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FIRST OF ALL, I'D LOVE TO SHOW MY APPRECIATION AND GRATITUDE TO ALLAH THE ALMIGHTY WHO MADE THE PERFECT CONDITION FOR THIS WORK TO SEE THE LIGHT.
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MOKHTAR ZEGHBA

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GENERAL INTRODUCTION

Context of the Study

Nowadays, the Internet is a phenomenon in facilitating interaction between people and access to information. Everyone, companies, individuals and governments use the web. It allows you to share your ideas and areas of interest with other users around the world.

Among the areas of web application, e-learning, and online learning, has witnessed a great demand by users because of the ease of obtaining information, or because it is free or at good prices, and its basic concept depends on the presence of the learner in a place different from the source of education, which may be book, teacher, or even a group of learners. Distance education is the transfer of an educational program from its location on the campus of an educational institution to geographically dispersed places. It aims to attract students who under normal circumstances would not be able to continue with a traditional educational programme. This usually involved correspondence courses where the student corresponded with the school by mail, but today it includes online education, and there was a common mistake in considering distance education synonymous. For education via the Internet, and in fact, education through the Internet is one of the means of distance education, but due to the prevalence of the first, it has often been considered synonymous with distance learning. The distance-learning program can be completely distance learning or a combination of distance learning Traditional education in the classroom (in this case, it is called the hybrid education system or the co-educational system).

In light of the Corona crisis that afflicted the world, and in order to preserve the public safety of students and teachers alike, and to ensure the continuity of education in good conditions, and in these difficult circumstances, remote study has become an inevitable matter. It includes the other phases, and other difficulties have emerged, represented in communicating the information correctly and easily, supervising students by teachers and parents, and on the other hand ensuring understanding and understanding. The goal of our project is to build a platform dedicated to running schools so that students can communicate quickly and smoothly with the administration and teachers It also provides the possibility of raising lessons and sharing them with students, and also provides the possibility of monitoring the student's activities by his guardian, by providing the opportunity for communication between parents, administration and teachers, and facilitating the work of administrators in grouping students for exams by knowing the number of students in an exact manner in all phases. Facilitating the work of professors through rapid assessment and feedback, reducing human potential and saving time.

CHAPTER 01

Web technology

1.1. Introduction

In the last five years, a real revolution has occurred in the world of computing; this revolution is the explosion of the Internet more particularly the foundation on which it is built: the Web, considered as a tool for communication, research/publication of information, and creation of new services.

This chapter first introduces the Internet in general and the web in particular, and then defines the websites and their characteristics.

1.2. Internet

The internet is now widely used by most people for a wide range of services: file sharing, information retrieval, online shopping, banking, social media, etc.

However, as the Internet continues to evolve, it not only connects people with each other or with a service, but also allows objects to connect with each other to get and share information or to take action. The Internet of Things is currently translating into an increase in the number of connected objects. These objects carry a growing number of sensors and actuators allowing them to measure the environment and act on it, thus making the link between the physical world and the virtual world. Specifically, the Internet of Things poses several problems, in particular because of its very large scale, its dynamic nature and the heterogeneity of the data and the systems that compose it (powerful / not very powerful, fixed / mobile devices, powered by batteries / DC power supplies, etc.). These characteristics require tools and methods for the creation of applications capable of extracting useful information from the many available data sources and of interacting with the environment, by means of actuators, as well as with users, through dedicated interfaces. Indeed, the Internet of Things must be designed for easy use masking the underlying technological complexity, and quiet handling preventing threats and potential risks. In the IoT, any object is potentially connected to the Internet and capable of communicating with other objects. This creates new security threats. In the past, the Internet linked traditional objects such as PCs, tablets, etc. But currently the internet has to connect non-traditional objects [1]

1.2.1. Objective

The objective was to operate a network that was supposed to withstand a nuclear attack and sabotage, by compensating for the excessive centralization of existing infrastructure.

The network initially only allowed the exchange of texts, which is called e-mail. This network was developed and extended by academics in the late 70s.

In 1977, the Internet became a reality because TCP / IP was effectively used to connect various networks to Arpanet.

In the 1990s, its popularization went through the appearance of the World Wide Web. The Internet as we know it was born! It is now the largest network in the world, bringing together people from all countries.

1.3. The web

The Web was invented several years after the Internet, but it was it that contributed to the explosion of Internet use by the public, thanks to its ease of use. Since then, the Web is frequently confused with the Internet when it is actually only one of its services

1.3.1. WWW

The World Wide Web, literally the "world spider web", commonly known as the Web, sometimes the Web or the WWW, symbolizing the mesh network of information servers, is a public hypertext system operating on the Internet that allows the consultation of information, thanks to links created between documents : web pages.

The web page allows both the display of texts, images and input forms but can call and display different other types of digital documents: sound, video, applications... (This list is not exhaustive in view of technical progress).

Its consultation by the Customer requires a navigation software (browser or browser).

The concept of the World Wide Web was created in 1989 at CERN by Tim Berners-Lee, and then developed by himself and Robert Cailliau in 1990 with the aim of designing a system to navigate simply from one space to another of the Internet using hypertext links and thanks to a browser.

1.3.2. Evolution du web

The Web is characterized by a constant evolution of the substance and form of web pages.

In its initial design.

1.3.2.1. Le Web 1.0

Web 1.0 has inserted in people's minds an intensifying disaffection with channels and libraries by directing people towards diverse, varied, instantaneous responses, at their fingertips, without physical displacement, all thanks to the Internet. It has become the great universal encyclopedia, where we find all the desired information (more or less verified!). It guarantees the free flow of information; there is no question of censorship, especially since the network has no identifiable head; at most, efforts can be made to temporarily restrict its dissemination (some governments are still trying to do so).

Web 1.0 has an answer to everything; we refer to it spontaneously. Are we looking for something? We immediately resort to the Internet: temperature, route, price, etc. Talk to the doctors: their "patients / Internet" arrive with a diagnosis thought in advance and discuss the type of drugs to take without too many side effects…

The major institutions understood that, henceforth, they had to be present on this new "universal encyclopedia", under pain of ceasing to exist in public opinion. All social, political, economic, educational, sports, religious groups have returned to school, in order to produce and maintain their own sites on Web 1.0. These sites present above all the origin, history, goals, services offered by the organization.

However, it is claimed that there are well beyond a million religious sites on the Internet. We quickly saw the arrival of institutional sites at all levels. For example in the Catholic Church: individuals, parishes, associations, dioceses, religious communities, monasteries, shrines... and even the Vatican, which was in the first users. It offers objectives, descriptions, official documents, spiritual paths, biblical texts, retreats, sacred art, personal opinions, etc. There are no limits.

Sometimes these sites quickly become frozen, fossilized for lack of volunteers to maintain them or competent people to take care of them. Static, they age quickly. To make them more alive, institutions and individuals have launched an initiative with major consequences for the future: blogs. That is, a space for dialogue between sites (or individuals) and Internet users interested in a common theme. This behavior was going to spawn a real second revolution in communication through the Internet, with formidable consequences for religions: Web 2.0. [2]

1.3.2.2. TheWeb 1.5

A first evolution was realized by solutions based on a dynamic web called web 1.5. This dynamic web is usually based on the association of PHP programming language and MySQL databases. When the internet user accesses the dynamized site, he makes run on the server the PHP language, which will fetch the information in the database to transcribe it in the HTML page on the user station. [2]

1.3.2.3. The Web 2.0

The web has undergone a new evolution with the appearance of new technologies such as the AJAX language that makes pages interactive and fluid and the RSS Feed, which allows staying informed of the news of a web interface. This is the advent of the collaborative, interactive and participatory web.

Web 2.0 induces a complete change of attitude. It introduces interactivity as an obligatory function. It changes everything. Web 2.0 fundamentally promotes socialization, through constant exchanges. No interactivity, no interest! Participating becomes the rule; otherwise, one "disembarks from the train".

The current presence of religions on the Web is divided into two types...: "new religions" and traditional religions. The "new religions" were born directly on the Web from the initiative of individuals or small groups: they were designed and organized only for the Web; they intend to render all kinds of services at the religious level (meditation, prayer, sermons, religious songs, and objects for sale...).Pour leur part, les religions plus classiques proposent sur leurs sites les grands principes évoqués plus haut (histoire, buts, services, etc.), souvent avec une visée jusqu'ici plutôt utilitariste : « se servir » des nouveaux médias pour répandre leur foi.

Many practices are already in place; there are various examples in the United States. Let's remember one : faced with a desire in vogue to confess via the Internet, the archdiocese of New York has offered, on the Web, a process of complete confession, except that at the end the internet user is invited to present himself to a priest to receive absolution.

Beyond this pragmatism displayed in the United States by different religious groups, there remains a reality: many religious stakeholders have difficulty coping now on arrival from a very new culture, to an unprecedented cultural upheaval. It is a complete reframing of the way of thinking of people – and mainly young people – into a new social fabric, which will never be as before and which opens up new horizons. However, this new vision of the world directly affects the construction of meaning and identity, especially among the rising generations. To new media, new schemes of thought and action, personal and collective. What are the characteristics that emerge from these destabilizing changes? What will be the potential consequences for religions?

Before answering these questions directly, let us dwell briefly on the good sides of the Web, before mentioning some weaknesses – many books deal with it, so we will only give an overview of it.

Remember the positive that we find in Web 1.0: documentation accessible 24 hours a day, 7 days a week; no need to travel to have access to full of information : we transcend places and times. No more censorship, full freedom of access to anything.

Web 2.0, on the other hand, is based on interpersonal and equal exchanges, «friendly ". Useful blogs for reflection and dialogue. Existential dimensions attract: the entertainment found there often promotes a search for meaning. Web 2.0 satisfies both the personal interest (the "I") and the community aspect (the "we"). It transforms the worldview, in direct line with globalization, creating new connectivity, even between distant people... Several group leaders play a positive role: they connect with each other. Web 2.0 responds to the need to meet collectively and help each other. It often has a so-called viral, contagion effect, for good causes: for example, the Arab Spring. It contributes to the building of an online community that can also respect the varying degrees of belonging of its audiences, etc.

On the other hand, ethicists – especially Christian churches – have repeatedly pointed out the potential weaknesses or dangers of the Web. Isolationism: unrestrained individualism, narcissism and alienation. Superficiality of relationships, which adversely affects real interpersonal contacts. Bombardment of information and endless choice. Immorality: sexuality, violence. Dependence: impossible to detach from it. Non-respect for others: attacks, desire to impose one's power. Camouflage, thanks to avatars. Take the other as a "he-object" and not as an "I-person". Disincarnating: the body becomes heavy in the face of the imaginary (kind of revenge on the too notional or the too scientific?) Recovery of new media by the economic, materialistic and hedonistic system. Generalized relativism. Disengagement from any action on the ground. [2]

1.4. The web site and web application

1.4.1 The web site

A website (also called a website) is a coherent set of web pages that are hyper-linked to each other, designed to be accessed with a web browser, published by an owner (a company, an administration, an association, an individual, etc.) and hosted on one or more web servers.

1.4.1.1. Web site creation steps

The creation of a website is a project in its own right comprising a large number of phases including:

Design

The design of a site makes it possible to set up a model on which we will rely during the implementation. This step should lead to the development of a specification describing all the functionalities planned for the realization of the website. The design of a website thus follows directly from the definition of needs. The analysis of the needs of the site then concerns the following points:

+ The choice of the type of site to realize (showcase, merchant, etc.)

+ + the type of content to integrate into the site

+ Determine the audience of the site

+ The shape of the data

+ Define the structure of the site

+ Define the graphic charter of the site

Achievement

After the web, design comes the realization, which is the stage of technical concretization of the client project. This is the phase of pure development, the one where you have to produce the code necessary for the needs of the site. This is when the graphical mockups are transformed into HTML pages.

The realization of a website is based on a set of tools and web development technologies. We distinguish:

- Side technologies: This is the set of tools supported by the browser

- Server-side technologies: This is the set of tools running on the web server.

Association of a domain name

A website is identified on the Internet through a web address. The web address is usually made up of three parts:

- Service.

- The root i.e. the name corresponding to the domain name itself.

- The suffix commonly called extension (or domain name).

Hosting and uploading

In order to make a website available on the Internet, it is necessary to have it hosted on a web server. Hosting is a service provided by a specialized provider called Internet hosting that provides the site, a dedicated disk space on a web server permanently connected to the Internet.

SEO and promotion

SEO is the set of activities that allow a website to appear in the first pages of search engines when a user performs a search from a few keywords. This service has the advantage of making the site known to Internet users, increasing its visibility and thus increasing the number of prospects.

1.4.2. Web Application

A web application is an application that is invoked with a web browser on the Internet. Since 1994 when the Internet became accessible to the public and especially in 1995, when the World Wide Web put a usable face on the Internet, the Internet has become a platform of choice for a large number of increasingly sophisticated and innovative web applications. In just a decade, the Web has evolved from being a repository of pages used primarily to access static, mostly scientific information, to a powerful platform for application development and deployment. New technologies, languages and web methodologies make it possible to create dynamic applications that represent a new model of cooperation and collaboration between large numbers of users. Web application development has been quick to adopt standard component and component orientation software engineering techniques. [3]

1.4.2.1 Modern Web application:

Examples

Early Web applications offered mostly textual user interfaces and limited interactivity. Today's Web applications offer rich interfaces, are interactive, and support collaboration among users. Here we examine several applications that represent the current generation of Web applications, sometimes collectively called Web 2.0.

1. Google docs

Google docs and spreadsheets is a recent service offered by Google that provides the traditional word processing and spreadsheet functionalities as a Web application. They

are streamlined services that support the most often-used features and do not support many features that are offered by commercial word processors. The interface looks very much like a typical desktop application. The user does not have to press a submit button after every change (a hallmark of the first generation Web applications). The user's data is automatically saved in the background. You can even drag a piece of text in the window. In addition to the usual word processing features, Google docs offers features that are associated with Web 2.0. A document may be shared with other users so that different people may collaborate on editing it. Naturally, the document may be searched using keywords. Additionally, documents may be tagged with terms the user chooses so that documents may also be searched for based on tags. Documents may be saved in a variety of formats (on the Google servers) and mailed to other users. Other users may be given read-only or read-write access to the document. Tagging and collaboration are two features common to modern Web applications.

2. Flickr

Flickr is a photo-sharing site where users store their photos and tag them for future retrieval. Further, users may tag any of the photos on the site that are available publicly. Similar to Wikipedia, Flickr is à site that would have nothing without its users. As more and more users participate, the volume of content grows and tags allow photos to be found easily.

3. Wikipedia

Wikipedia has become one of the most popular sites on the Internet. It is used by many as an authoritative source of information, from finding definitions of technical terms to explanations of current events. The key feature of Wikipedia is that users produce its content. Anyone can add or edit the information on Wikipedia. In contrast to a traditional printed or on-line encyclopedia that employs professional editors and writers to produce, structure, and authenticate its content, Wikipedia relies on social structures to ensure the creation and correction of its content. The vast numbers of users of the Internet form a large pool of potential volunteers. The Wikipedia is updated constantly rather than following the multi-year release cycle of a traditional encyclopedia. An innovative aspect of the Wikipedia application, considered a characteristic of Web 2.0 applications, is that it provides a platform for users to collaborate to create a valuable product. What makes Wikipedia valuable, its content, is indeed produced by the users themselves. This aspect creates what is called the network effect: The more users there are, the more useful the product becomes. Amazon already introduced early forms of user collaboration to enhance the product by encouraging users to provide book reviews. Wikipedia is based on the concept of a wiki, described later.

4. Myspace

Myspace is a site for social networking. A user registers and creates a profile detailing his, her, or its characteristics (Profiles exist for animals and companies and products, presumably created by real humans). Each user's space is open to be visited by other users. Users seem to enjoy sharing all kinds of information about themselves and to communicate and interact with other users. The basic thesis that makes Myspace work is that people like to interact with other people. Myspace provides a platform for social interaction, albeit in virtual space. Users have populated Myspace with a variety of

multimedia documents including images and videos. The site constantly changes its appearance to maintain the interest of its users.

1.5. Web technology

The realization of a website is based on a set of tools and web development technologies. We distinguish:

1.5.1. Client-side technologies * Front-End *:

This is the set of tools supported by the browser

HTML (Hyper Text Markup Language)

HTML is a language for describing the layout and form of the content of a web document and including hyperlinks

An HTML page is thus a simple text file with an extension .htm or html, and whose data set is between tags (called markers or tags).

Hypertext is a system using the HTML language, which allows the creation of hypertext links. A hypertext document is therefore a document that contains hyperlinks. When documents are not only textual, but also audiovisual, we can talk about hypermedia system and documents.

CSS (Cascading Style Sheet)

CSS is a formatting language that describes the presentation of a document (element positioning, alignment, fonts, colors, margins and spacing's, borders, background images, etc.) written in HTML or XML regardless of its structure.

JS (JavaScript)

JavaScript (often shortened to JS) is a lightweight, interpreted, object-oriented language with first-class functions, and is best known as the scripting language for Web pages, but it is used in many non-browser environments as well. A prototype-based, multi-paradigm scripting language is dynamic, and supports object-oriented, imperative, and functional programming styles.

JavaScript runs on the client side of the web, which can be used to design / program how the web pages behave on the occurrence of an event. JavaScript is an easy to learn and powerful scripting language, widely used for controlling web page behavior.

Contrary to popular misconception, JavaScript is not "Interpreted Java". Briefly, JavaScript is a dynamic scripting language supporting prototype based object construction. The basic syntax is intentionally similar to both Java and C++ to reduce the number of new concepts required to learn the language. Language constructs, such as if statements, for and while loops, and switch and try ... catch blocks function the same as in these languages (or nearly so).

JavaScript can function as both a procedural and an object-oriented language. Objects are created programmatically in JavaScript, by attaching methods and properties to otherwise empty objects at run time, as opposed to the syntactic class definitions common in compiled languages like C++ and Java. Once an object has been constructed, it can be used as a blueprint (or prototype) for creating similar objects.

JavaScript's dynamic capabilities include runtime object construction, variable parameter lists, function variables, dynamic script creation (via eval), object introspection (via for ... in), and source code recovery (JavaScript programs can decompile function bodies back into their source text). [4]

1.5.2. Server-side technologies*Back-End*:

This is the set of Tools running on the web server.

ASP (Active Server Pages)

Free. Cross-Platform. Open source.
A Framework for building web apps and services with .NET and C#. [5]

PHP (Hypertext Preprocessor)

PHP is a popular general-purpose scripting language that is especially suited to web development.

Fast, flexible and pragmatic, PHP powers everything from your blog to the most popular websites in the world. [6]

Node.js

Node.js is similar in design to, and influenced by, systems like Ruby's Event Machine and Python's Twisted. Node.js takes the event model a bit further. It presents an event loop as a runtime construct instead of as a library. In other systems, there is always a blocking call to start the event-loop. Typically, behavior is defined through callbacks at the beginning of a script, and at the end a server is started through a blocking call like Event Machine::run (). In Node.js, there is no such start-the-event-loop call. Node.js simply enters the event loop after executing the input script. Node.js exits the event loop when there are no more callbacks to perform. This behavior is like browser JavaScript — the event loop is hidden from the user.

HTTP is a first-class citizen in Node.js, designed with streaming and low latency in mind. This makes Node.js well suited for the foundation of a web library or framework.

Node.js being designed without threads does not mean you cannot take advantage of multiple cores in your environment. Child processes can be spawned by using our child_process.fork () API, and are designed to be easy to communicate with. Built upon that same interface is the cluster module, which allows you to share sockets between processes to enable load balancing over your cores. [7]

1.6. Conclusion

In this chapter, we provided an overview of the nature of the Internet from its history, the services it provides, including the Web, and the methods of developing the Web from techniques and tools once through generations until we reached our generation, and now we are about to take a curve or in other words delve into the field, and we By this we mean the field of distance education

CHAPTER 02

E-learning & Distance education

2.1. Introduction

Distance education has a history that spans almost two centuries, and this time represents significant changes in how learning occurs and is communicated. From basic correspondence through postal service to the wide variety of tools available through the Internet, society has embraced new forms of communication through the years. One such form, online learning, is known to have a history of access beginning in the 1980's whereas another term, referred to as e-Learning, does not have its origins fully disclosed. As researchers and designers utilized these emerging technologies, we find that a relaxed use of the terminology makes it difficult to design and evaluate similar learning environments without understanding the specific characteristics. The design of different types of learning environments can depend on the learning objective, target audience, access (physical, virtual and/or both), and type of content. It is important to know how the learning environment is used, and the influences of the tools and techniques that distinguish the differences in learning outcomes as the technology evolves. [8]

2.2. Literature definitions

As learning technology and its associated fields continue to evolve, practitioners and researchers have yet to agree on common definitions and terminologies. As a result, it is difficult for researchers to perform meaningful cross-study comparisons and build on the outcomes from the previous studies. This contributes to conflicting findings about distance learning, e-Learning, and online learning environments. In addition, terms are often interchanged without meaningful definitions. As an initial step, we reviewed the relevant literature to determine how these learning environments were defined. [8]

2.2.1 Distance learning

Distance education is the most renowned descriptor used when referencing distance learning. It often describes the effort of providing access to learning for those who are geographically distant. During the last two decades, the relevant literature shows that various authors and researchers use inconsistent definitions of distance education and distance learning. As computers became involved in the delivery of education, a proposed definition identified the delivery of instructional materials, using both print and electronic media (Moore, 1990).The instructional delivery included an instructor who was physically located in a different place from the learner, as well as possibly providing the instruction at disparate times elaborated on the definition by including a comparison of the pedagogical methods used in traditional environments and referring to the instruction as «teaching by telling. «The definition also stated that distance education uses emerging media and associated experiences to produce distributed learning opportunities. Both these definitions recognized the changes that were apparent in the field and attributed them to the new technologies that were being made available .Keegan (1996) went further by suggesting that the term distance education is an"umbrella"term, and as such, has terms like correspondence education or correspondence study that may have once been synonymously used, being clearly identified as a potential offspring of distance education. King, Young, Driver-Richmond, and Schrader (2001) do not support the interchangeable use of the terms distance learning and distance education, because both terms do differ. Distance learning is referenced more as ability, whereas distance education is an activity within the ability [of learning at a distance]; though, both definitions are still limited by the differences in time and place. As new technologies become apparent, learning seemed to be the focus of all types of instruction, and the term distance learning once again was used to focus on its limitations associated with «distance", i.e. time and place (Guilar & Loring, 2008; Newby, Stepich, Lehman, & Russell, 2000). The term then evolved to describe other forms of learning, e.g. online learning, e-Learning, technology, mediated learning, online collaborative learning, virtual learning, web-based learning, etc. (Conrad, 2006). Thus, the commonalities found in all the definitions is that some form of instruction occurs between two parties (a learner and an instructor), it is held at different times and/or places, and uses varying forms of instructional materials. [8]

2.2.2 E-Learning

The origins of the term e-Learning is not certain, although it is suggested that the term most likely originated during the 1980's,within the similar time frame of another delivery mode online learning. While some authors explicitly define e-Learning, other simply a specific definition or view of e-Learning in their article. These definitions materialize, some through conflicting views of other definitions, and some just by simply comparing defining characteristics with other existing terms. In particular, Ellis (2004) disagrees with authors like Nichols (2003) who define e-Learning as strictly being accessible using technological tools that are either web-based, web-distributed, or web-capable. The belief that e-Learning not only covers content and instructional methods delivered via CD-ROM, the Internet or an Intranet but also includes audio- and videotape, satellite broadcast and interactive TV is the one held by Ellis. Although technological characteristics are included in the definition of the term, Tavangarian, Leypold, Nölting,Röser, and Voigt (2004)as well as Triacca, Bolchini, Botturi, and Inversini (2004)felt that the technology being used was insufficient as a descriptor. Tavangarian et al. (2004) included the constructivist theoretical model as a framework for their definition by stating that e-Learning is not only procedural but also shows some transformation of an individual's experience into the individual's knowledge through the knowledge construction process. Both Ellis (2004) and Triaccaet al. (2004)believed that some level of interactivity needs to be included to make the defining truly applicable in describing the learning experience, even though Triacca et al. (2004)added that e-Learning was a type of online learning. As there is still the main struggle as to what technologies should be used so that the term can be referenced, some authors will provide either no clear definition or a very vague reference to other terms such as online course/learning, web-based learning, web-based training, learning object so distance learning believing that the term can be used synonymously What is abundantly obvious is that there is some uncertainty as to what exactly are the characteristics of the term, but what is clear is that all forms of e-Learning, whether they be as applications, programs, objects, websites, etc., can eventually provide a learning opportunity for individuals.[8]

2.2.3 Online learning

Online learning can be the most difficult of all three to define. Some prefer to distinguish the variance by describing online learning as “wholly” online learning, whereas others simply reference the technology medium or context with which it is used. Others display direct relationships between previously described modes and online learning by stating that one uses the technology used in the other. Most authors describe online learning as access to learning experiences via the use of some technology .Both Benson (2002) and Conrad (2002) identify online learning as a more recent version of distance learning, which improves access to educational opportunities for learners described as both nontraditional and disenfranchised. Other authors discuss not only the accessibility of online learning but also its connectivity, flexibility and ability to promote varied interactions (Ally, 2004; Hiltz & Turoff, 2005; Oblinger & Oblinger, 2005).Hiltz and Turoff (2005) in particular not only elude to online learnings' relationship with distance learning and traditional delivery systems but then, like Benson (2002) makes a clear statement that online learning is a newer version or, and improved version of distance learning. These authors, like many, believe that there is a relationship between distance educations or learning and online learning but appear unsure in their own descriptive narratives.[8]

2.3. The Major Goals of Distance learning

- To provide an effective alternative path to wider opportunities in education and especially in higher education:

  There are different categories of potential learners. There are some who never been able to enter into any institution of higher learning. Some just need additional knowledge in a particular discipline. There are still others who are in need of refresher courses to cope with the latest development in their perfection. For all of those there is need for distance learning or correspondence education.

- To provide education facilities to all qualified and willing persons:

  The objective of correspondence courses is to provide education facilities to all qualified and willing persons who are unable to join regular university and other courses due to various reasons. For them, there is an incessant search for an alternative system and that system is distance education.

- To provide opportunities of academic pursuits to educated citizens willing to improve their standard of knowledge:

  There are many learners, both young and adults, who cannot afford to join the face-to-face system of education due to personal and professional responsibilities. For such type of persons, some provisions have to be made through distance education. Hence, the objective is to provide opportunities to improve the standard of knowledge and learning through continuing education while in employment.

- To provide education facilities to those individuals who look upon education as a life-long activity:

  Distance education facilities are needed for those individuals who look upon education as a life-long activity or to acquire knowledge in a new area. Because lifelong education is emphasized for all stages of life. In this context, the report of the National Policy on Education, 1986 is worth- mentioning here.

  The NPE-1986 says, "Life-long education is a cherished goal of the educational process. This presupposes universal literacy. Opportunities will be provided to the youth, homemakers, agricultural and industrial workers and professionals to continue the education of their choice, at the pace suited to them. The future thrust will be in the direction of open and distance learning. " [9]

2.4. The benefits of Distance learning

- **More flexibility**

  Online courses allow you to fit them where you want in your schedule. Normally, those who work and want to take courses in addition to their work find it difficult to manage their time. Online courses allow them to decide when they are most available to study. They can take their courses by traveling by bus, car, train, or plane. This is obviously not possible in face-to-face education, which requires a predefined schedule and a fixed location. However, online courses give you the time to manage yourself to learn.

- **Suitable for all rhythms**

  Each learner works at their own pace. In case you are faster than the others are, there is no need to wait for them. The reverse is also true: if you are slower, you can take your time without disturbing anyone. Trainings can also be tailor-made according to the level of learning.

- **The opportunity to study for everyone**

Thanks to the online format, people with disabilities were able to find a job. There is a category of the population, which hardly tolerates close communication. Shy students find it easier to learn at home. There is no pressure, no need to think about the appearance.

- **Convenient**

Distance education, unlike face-to-face education, allows training to be provided in asynchronous time and place. Learners no longer need to travel and adhere to schedules. We train where we want, when we want. All you need is a WI-FI connection and a laptop, tablet, or smartphone. E-learning allows learners who want to stay at home, for example for family reasons, to use their free time to continue learning and develop professionally. With distance learning, there is no need to travel or ask a teacher to come to your home, the lessons will have the particularity of being carried out online. You can work in a familiar environment that allows you to work easily. In addition, a considerable saving of time is to be expected. E-learning, when it is well designed, is now based on playful and varied media: videos, interactive formats, podcasts, forums, questionnaires, slide shows, etc.

- **Choose the training of your dreams**

Getting the training of your dreams often requires moving to another city or country. Online training makes this task easier for many students.

2.5. The disadvantages

- **Less interaction**

Online education makes it easy to access a classroom remotely, at a time that suits the learner. However, the latter may experience a feeling of isolation, due to the individual format of this type of learning, which can make him feel lonely. Nevertheless, with the constant advancements in technology, learners can engage more actively with teachers or other students, using tools such as video conferencing, social media, and discussion forums.

- **Health problems**

Learners who take online training spend a lot of time on their computers and other such devices; which can lead to visual fatigue, poor posture or other physical problems, which can affect the learner.

- **Less commitment**

Younger learners are often the ones with the most problems with self-discipline. Therefore, they will be less motivated to complete their online training, because there will not have been a teacher physically present to motivate them to study.

- **Lack of credibility**

By communicating with a teacher, there is no way to ensure that the authorship of the mission is yours. Therefore, many organizations are wary of online certificates received. To solve the problem, serious educational institutions use a number of verification methods: they organize video conferences, special programs, and require original student documents. These difficulties more often relate to the final tests. But for any essay or course, students can order special resources offering these services. The trick also applies to traditional teaching.

- **Quality of service**

The verification problem described, unfortunately, works in two directions. The student is also limited in the preliminary assessment of the proposed material. Often, after paying for courses and several courses, an understanding comes from their low grade. Attitude attentive to the choice of the programs, the study of the opinions and ratings will make it possible to solve the problem.

2.6. Distance learning during Lockdown of Covid-19 Pandemic

E-learning has become the mandatory component of all educational institutions like schools, colleges, and universities in and around the world due to the pandemic crisis of COVID-19. This deadly situation has flipped out the offline teaching process. E-learning provides an effective teaching method that brings out the best in students. To find out the student's attitude towards e-learning, primary data has been collected from national and international wise through Google forms, which include the student community from various schools, colleges, and universities. This research paper aims to study the E-learning process among students who are familiar with web-based technology. It also helps to find out solutions to improve the self-study skills of students. The stratified sampling method has been adopted in this study and the sample size is 175 across the world. The findings of the study reflect the impact of E-learning, students' interest in using E-learning resources, and their performance. In conclusion, this study shows that E-learning has become quite popular among the students all over the world particularly, the lockdown period due to the COVID-19 pandemic.

The purpose of education is to mold a person to be perfect. Education provides the pathway to reach their destiny. Education helps in inculcating social responsibilities as well. The main core of education is to learn. Learning is a process of acquiring knowledge or skills through study, experience, or being taught. Any freak accident that happens in the world will always leave its impact on education. Therefore, the epidemic of COVID 19 has its footprints on education. The outbreak of this dangerous virus across the globe has forced educational institutions to shut down to control the spread of this virus. This happening made the teaching professionals think of alternative methods of teaching during this lockdown. Thus, it paves the way towards web-based learning or e-learning or online learning. In today's scenario, learning has stepped into the digital world. In which teaching professionals and students are virtually connected. E-learning is quite simple to understand and implement. The use of a desktop, laptop, or smartphones and the internet forms a major component of this learning methodology. E-learning provides rapid growth and proved to be the best in all sectors, especially in education during this lockdown.

E-learning seems to be the forthcoming trend. It has been extending widespread. The online method of learning is best suited for everyone. Depending on their

availability and comfort, many people choose to learn at a convenient time. This enables the learner to access updated content whenever they want it. Due to the wide set of benefits, it gives to students. The findings of the study reflect the impact of E-learning, students' interest in using E-learning resources, and their performance. In conclusion, this study showed that E-learning has become quite popular among the students across the world particularly, the lockdown period due to the COVID-19 pandemic.[10]

2.7. Famous Platform

- **Coursera**

  Coursera is a popular online education platform that offers courses from top education providers around the world. Over the years, the company has grown rapidly and provides the world's best standards of education through MOOC.

  This online learning platform partners with universities including Stanford, Duke, Penn, Princeton, Michigan, Peking, and HEC Paris and companies like IBM, Google, and PwC. Overall, they have 190 active partners from 48 countries. The platform is backed by renowned investors such as Kleiner Perkins, New Enterprise Associates, Learn Capital, and SEEK Group.

- **Skillshare**

  Skillshare is an online education platform that is beneficial for both students and teachers. The website offers thousands of courses related to design, business, marketing, technology, photography, film, fashion, music, gaming, cooking, writing, DIY. Crafts and more.

  Instructors can easily create classes through the systematic guidelines provided by the platform. Furthermore, this top online learning platform offers referral compensation for teachers if any of the students subscribe to the premium package.

- **Lynda.com (now LinkedIn Learning)**

  Lynda.com, now part of LinkedIn Leaning is an MOOC website that covers a wide variety of creative, technology, and business courses. For over a decade, Lynda.com has been offering informative and clear video-based training for individual, corporate, and academics. The site is quite famous for teaching skills such as photography and coding.

Currently, the platform serves over 10,000 organizations, including renowned ones such as Adobe, Full Sail University, Patagonia, NBC and USC.

- **Udemy**

Udemy is a popular online learning platform that gives people a chance to develop their careers and explore a wide variety of hobbies. From web development to public speaking, they offer a broad range of courses. Reputed companies like Booking.com, Lyft, Adidas, and General Mills use the business plan of Udemy.

Furthermore, Udemy provides great support for instructors. They can create, share and promote their courses via re-targeting ads, search and discovery, email campaigns and external partner promotion.

- **edX**

EdX is a MOOC platform that offers university-level online courses. It has over 120 institutional partners like Harvard, MIT, Berkeley, and Delft, RWTH, Sorbonne and more.

The platform offers six different types of programs – one-off courses, Micro Master's Program, Professional Certificates, Global Freshmen Academy and XSeries Program. These programs cover skill development courses for leisure purposes, meeting the demand of the current job market and for students to get a better understanding of a subject.

- **Moodle**

Moodle™ stands for Modular Object-Oriented Dynamic Learning Environment. Founded and developed by Martin Dougiamas in 2002, Moodle™ was designed to provide educators, administrators, and learners with an open, robust, secure and free platform to create and deliver personalized learning environments. Moodle™ is a user-friendly Learning Management System (LMS) that supports learning and training needs for a wide range of institutions and organizations across the globe.

Today, Moodle™ is the most widely used Learning Management System in the world, with well over 100,000 registered implementations worldwide supporting over 150 million learners. Moodle™'s open source project is managed by a dedicated team at Moodle™ HQ with a head office in

Perth, Australia and satellite offices around the world. Moodle™'s modular nature and inherent flexibility make it an ideal platform for both academic and enterprise level applications of any size.

- **Google Classroom**

Google Classroom is a free, internet-based collaboration tool developed by Google as part of G Suite for Education for creating, distributing, and grading assignments. With a Google account, educators can use the platform to create a virtual classroom, invite students to attend live instruction, and record students' grades. The main purpose of Google Classroom is to simplify and streamline the process of sharing files between students and teachers. Documents are stored in Google Drive and can be edited within Drive's suite of applications, including Google Docs, Sheets, and Slides.

Google Classroom also encourages parent participation. Teachers can invite parents to the Google Classroom to share summaries of student work and receive automated email summaries of student work and class announcements.

- **Tools for Distance education**
  - **Google Meet**

Google Meet, also known as Google Hangouts Meet, is built to let dozens of people join the same virtual meeting, and speak or share video with each other from anywhere with internet access.

It is meant for use by businesses and other organizations, and it is a great way for colleagues who do not work in the same building to communicate.

A Google Meet organizer can share whatever is on their screen with everyone on a call, and any participant can turn their own audio and/or video feed off at any time, participating however, they want

  - **Zoom**

Zoom is a cloud-based video conferencing service you can use to virtually meet with others - either by video or audio-only or both, all while conducting live chats - and it lets you record those sessions to view later. Over

half of Fortune 500 companies reportedly used Zoom in 2019 and during 2020 it hit even greater heights, racking up 227 per cent growth over the year.

When people are talking about Zoom, you'll usually hear the following phrases: Zoom Meeting and Zoom Room. A Zoom Meeting refers to a video conferencing meeting that's hosted using Zoom. You can join these meetings via a webcam or phone. Meanwhile, a Zoom Room is the physical hardware setup that lets companies schedule and launch Zoom Meetings from their conference rooms.

Zoom Rooms require an additional subscription on top of a Zoom subscription and are an ideal solution for larger companies.

2.8. Challenges facing distance education under Corona in Algeria

The Corona (Covid-19) pandemic, which is spreading in Algeria, prompted the country's government, after suspending the study, to resort to the distance education system, amid questions about the success of this experiment in light of the presence of a number of obstacles it faces.

On April 5, the Algerian Ministry of Education launched an online support program for fourth-year students, intermediate and third secondary (baccalaureate), through digital platforms of the government office for distance education and training.

The Ministry has allocated a digital platform for the benefit of the fifth year students who are coming to the primary education certificate exam

This step comes as an embodiment of the plan drawn up by the Ministry of Education as part of the measures taken to confront the interruption of education for students in 48 governorates, and to limit the spread of Corona in the school environment. According to the ministry

In addition, the Algerian President, Abdelmadjid Tebboune, had ordered an immediate cessation of studies in schools and universities to prevent the spread of the Corona virus, starting from Thursday, March 12, 2020, until the end of the spring vacation on April 5, so that the decision was extended until the 29th of the same month.

The spring vacation was scheduled to begin on March 19, to last 15 days, but starting from April 4, the Algerian authorities expanded the night curfew to include all governorates of the country, to avoid the spread of the Corona virus, and all political, sports and cultural activities were suspended until 29 of the same month

On April 13, the Algerian Minister of Education, Mohamed Wagout, supervised a meeting using video conferencing technology with the directors of education in the country's governorates to find out the weekly outcome of broadcasting distance education classes for students.

Wagout said, "The process of broadcasting education classes exceeded 10 million views, according to the YouTube platform's count."

He added, "Efforts to confront the interruption of education are continuing, and the program must be activated and expanded to include local radio stations, especially for the category of students who do not have the means of technology and communication."[11]

2.8.1. Exam obsession

For his part, the parliamentarian and head of the Algerian Federation of Education Workers (Independent), Farhat Chabekh, believes that the government's decision to go to distance education "was supposed to have been before the Corona epidemic."

Shabak said in an interview with Anatolia, "We waited for this experience to be before Corona in order to help students, especially the poor among them, who do not have the means of technology in distance learning."

He stressed that "the success of this initiative is difficult in terms of preparing for exams, and the results will be disastrous because the students do not pay attention to the lessons in the presence of the teacher, let alone in his absence."

He explained, "The government's initiative is positive and its results will appear after three or four years, not now, in light of the outbreak of the Corona virus."[11]

2.8.2. Activists: Will the students absorb the lessons?

After the government started education through digital platforms for students, activists on social media platforms expressed their concern about the state's initiative.

Wedad Sally wrote on Facebook: "The question is: Are the students' comprehension of these (lessons) evaluated through the number of views or what?"

He added, "How can you (the ministry) make sure that the students actually followed and absorbed the lessons?"

The media, Lamia Ghassemi, said on her Facebook page: "There are several regions in Algeria that suffer from frequent power cuts. Who guarantees that the student will watch television during the period of the material?"

Qassemi added, "If we also accept that parents will force their children to follow lessons via the screen, are all families able to provide a private room for the student to study remotely?"

She pointed out that "the idea is far from achieving its desired goal, which is educational attainment."[11]

CHAPTER 03

Conception

3.1. Introduction

In this chapter, we will provide you with a set of diagrams and techniques used in order to accomplish the project, accompanied by some screenshots for clarification

3.2. General project presentation

In light of the Corona virus crisis and the problem of education in Algeria, and in order to preserve the public safety of students and teachers alike, new ideas must be found, so we propose The Remote school platform

This is after we noticed that the Moodle platform for university education is not suitable for other levels - primary, middle and secondary - because of its difficulty.

Hence, the Remote school platform is trying to avoid all these obstacles and ensure an easier and more effective use and offer more features that suit the target group.

3.3. Tools and techniques used

In this paragraph, we can distinguish between two approaches, BackEnd and FrontEnd, their technologies and tools, in order to divide the work and effort into two separate sections.

3.3.1. BackEnd (Server side) and FrontEnd (Client side)IDE: WebStorm

WebStorm is an integrated development environment for coding in JavaScript and its related technologies. Just like IntelliJ IDEA and other JetBrains IDEs, WebStorm will make your development experience more enjoyable, automating routine work and helping you handle complex tasks with ease.

Here are some key features you get with WebStorm :

- Out-of-the-box support for JavaScript, TypeScript, React, Vue, Angular, Node.js, HTML, style sheets, and others.
- Smart editor with code completion, on-the-fly error detection, safe code refactoring, and fast navigation across the entire codebase.
- A variety of built-in developer tools that allow you to debug and test your client-side and Node.js apps as well as to work with version control, linters, build tools, terminal, and HTTP client.
- Tools for efficient teamwork, including a service for remote collaborative development and pair programming and the ability to share your project configuration with others.

- The ability to customize your work environment by experimenting with things like themes and plugins.[12]

3.3.2. BackEnd (Server side) Tools and Techniques

- **Node.js**

Node.js is similar in design to, and influenced by, systems like Ruby's Event Machine and Python's Twisted. Node.js takes the event model a bit further. It presents an event loop as a runtime construct instead of as a library. In other systems, there is always a blocking call to start the event-loop. Typically, behavior is defined through callbacks at the beginning of a script, and at the end a server is started through a blocking call like EventMachine::run (). In Node.js, there is no such start-the-event-loop call. Node.js simply enters the event loop after executing the input script. Node.js exits the event loop when there are no more callbacks to perform. This behavior is like browser JavaScript — the event loop is hidden from the user.

HTTP is a first-class citizen in Node.js, designed with streaming and low latency in mind. This makes Node.js well suited for the foundation of a web library or framework.

Node.js being designed without threads does not mean you cannot take advantage of multiple cores in your environment. Child processes can be spawned by using our child_process.fork () API, and are designed to be easy to communicate with. Built upon that same interface is the cluster module, which allows you to share sockets between processes to enable load balancing over your cores. [7]

- **Express**

Is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications? [13]

Features

- Robust routing
- Focus on high performance
- Super-high test coverage
- HTTP helpers (redirection, caching, etc.)
- View system supporting 14+ template engines
- Content negotiation
- Executable for generating applications quickly

- **MongoDB**

MongoDB is a document database with the scalability and flexibility that you want with the querying and indexing that you need

MongoDB's document model is simple for developers to learn and use, while still providing all the capabilities needed to meet the most complex requirements at any scale. We provide drivers for 10+ languages, and the community has built dozens more. [14]

- **Mongoose**

Mongoose is an Object Data Modeling (ODM) library for MongoDB and Node.js. It manages relationships between data, provides schema validation, and is used to translate between objects in code and the representation of those objects in MongoDB. [15]

- **JSON Web Token (JWT)**

JSON Web Token (JWT) is an open standard (RFC 7519) that defines a compact and self-contained way for securely transmitting information between parties as a JSON object. This information can be verified and trusted because it is digitally signed. JWTs can be signed using a secret (with the HMAC algorithm) or a public/private key pair using RSA or ECDSA.

Although JWTs can be encrypted to also provide secrecy between parties, we will focus on signed tokens. Signed tokens can verify the integrity of the claims contained within it, while encrypted tokens hide those claims from other parties. When tokens are signed using public/private key pairs, the signature also certifies that only the party holding the private key is the one that signed it. [16]

- **Postman**

Postman is the collaboration platform for API development. Postman simplifies each step of building an API and streamlines collaboration so you can create better APIs—faster. [17]

3.3.3. FrontEnd (Client side)Tools and Techniques

- **Vue js**

Vue (pronounced /vjuː/, like view) is a progressive framework for building user interfaces. Unlike other monolithic frameworks, Vue is designed from the ground up to be incrementally adoptable. The core library is focused on the view layer only, and is easy to pick up and integrate with other libraries or existing projects. On the other hand, Vue is also perfectly capable of powering sophisticated Single-Page Applications when used in combination with modern tooling and supporting libraries. [18]

Features:

- Tiny size.
- Virtual DOM rendering and performance.
- Reactive two-way data binding.
- Single-file components and readability.
- Integration capabilities and flexibility.
- Solid tooling ecosystem.
- Easy to learn.
- Concise documentation.

- **BootstrapVue**

With BootstrapVue you can build responsive, mobile-first, and ARIA accessible projects on the web using Vue.js and the world's most popular front-end CSS library — Bootstrap v4.[19]

3.3.4. Connecting the FrontEnd and the BackEndREST API:

- **Representational state transfer**

Also known as, RESTful API is an application-programming interface (API or web API) that conforms to the constraints of REST architectural style and allows for interaction with RESTful web services. REST stands for representational state transfer and was created by computer scientist Roy Fielding.

An API is a set of definitions and protocols for building and integrating application software. It’s sometimes referred to as a contract between an information provider and an information user—establishing the content required from the consumer (the call) and the content required by the producer (the response). For example, the API design for a weather service could specify that the user supply a zip code and that the producer reply with a 2-part answer, the first being the high temperature, and the second being the low.

In other words, if you want to interact with a computer or system to retrieve information or perform a function, an API helps you communicate what you want to that system so it can understand and fulfill the request.

You can think of an API as a mediator between the users or clients and the resources or web services they want to get. It is also a way for an organization to share resources and information while maintaining security, control, and authentication—determining who gets access to what.

Another advantage of an API is that you do not have to know the specifics of caching—how your resource is retrieved or where it comes from.

Example :

In this simple example, we will try to fetch the list of students registered in the school

```
axios.get("/dashboard/:" + this.$route.params.schoolName + "/students",
        { headers: {'x-auth-token': this.token }}) .then(res => {
          this.users = res.data;
      }).catch((error) => {
           console.error(error);
    });
```

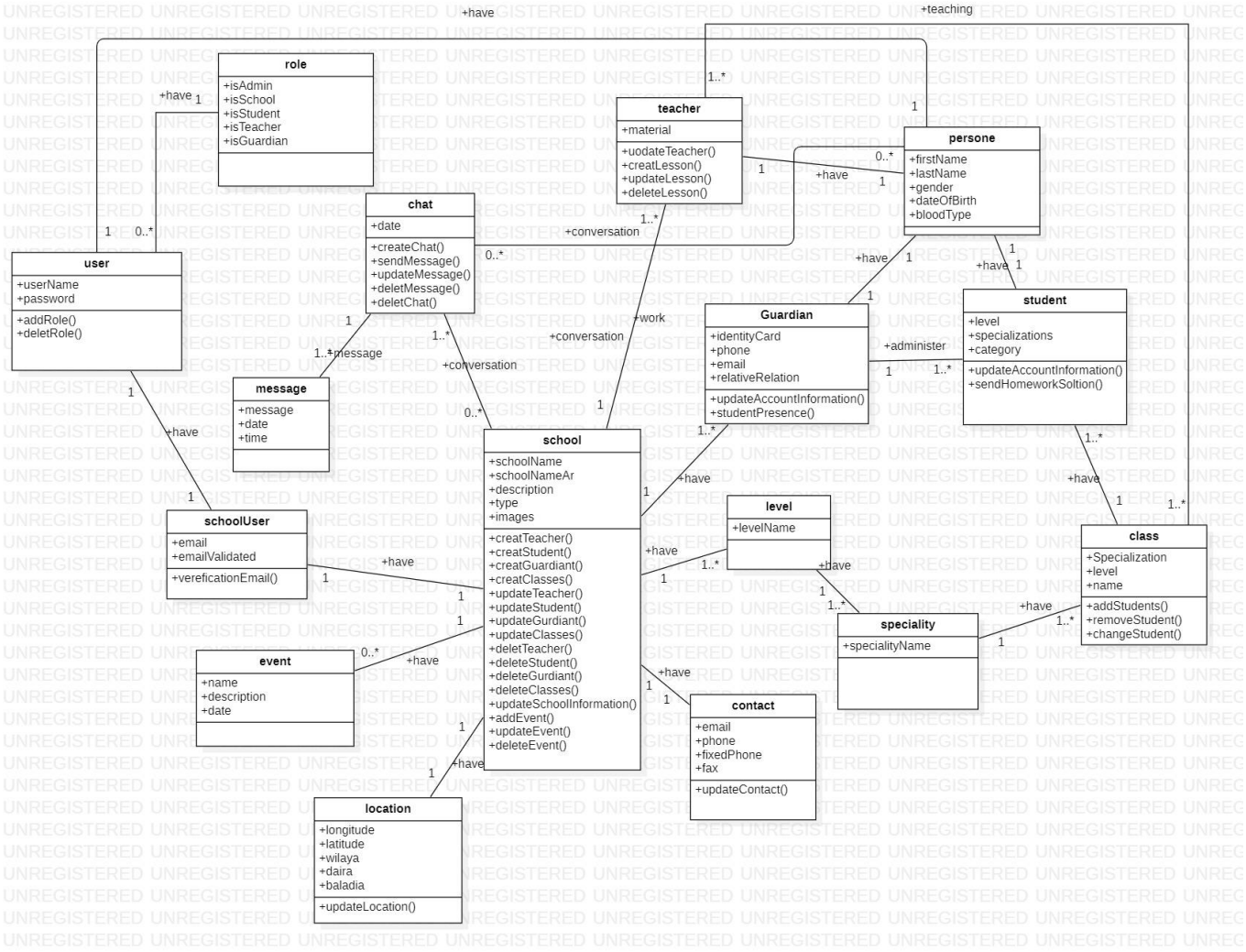
3.4. Uml and Screenshot

In this paragraph, we can distinguish between two approaches, BackEnd and FrontEnd, their technologies and tools, in order to divide the work and effort into two separate sections

3.5. Class diagram

- NoSQL databases approach modelling from a different point of view generally. NoSQL modelling usually begins with asking questions on how the data in the database is going to be queried, so the main modelling is 'what are the list of questions that I want to ask of my database', whereas with SQL databases, modelling usually is a function of what data you have.

Once you have a list of questions, you then need to design a model that will answer those questions via the NoSQL database.



Class Diagram : Remote school platform

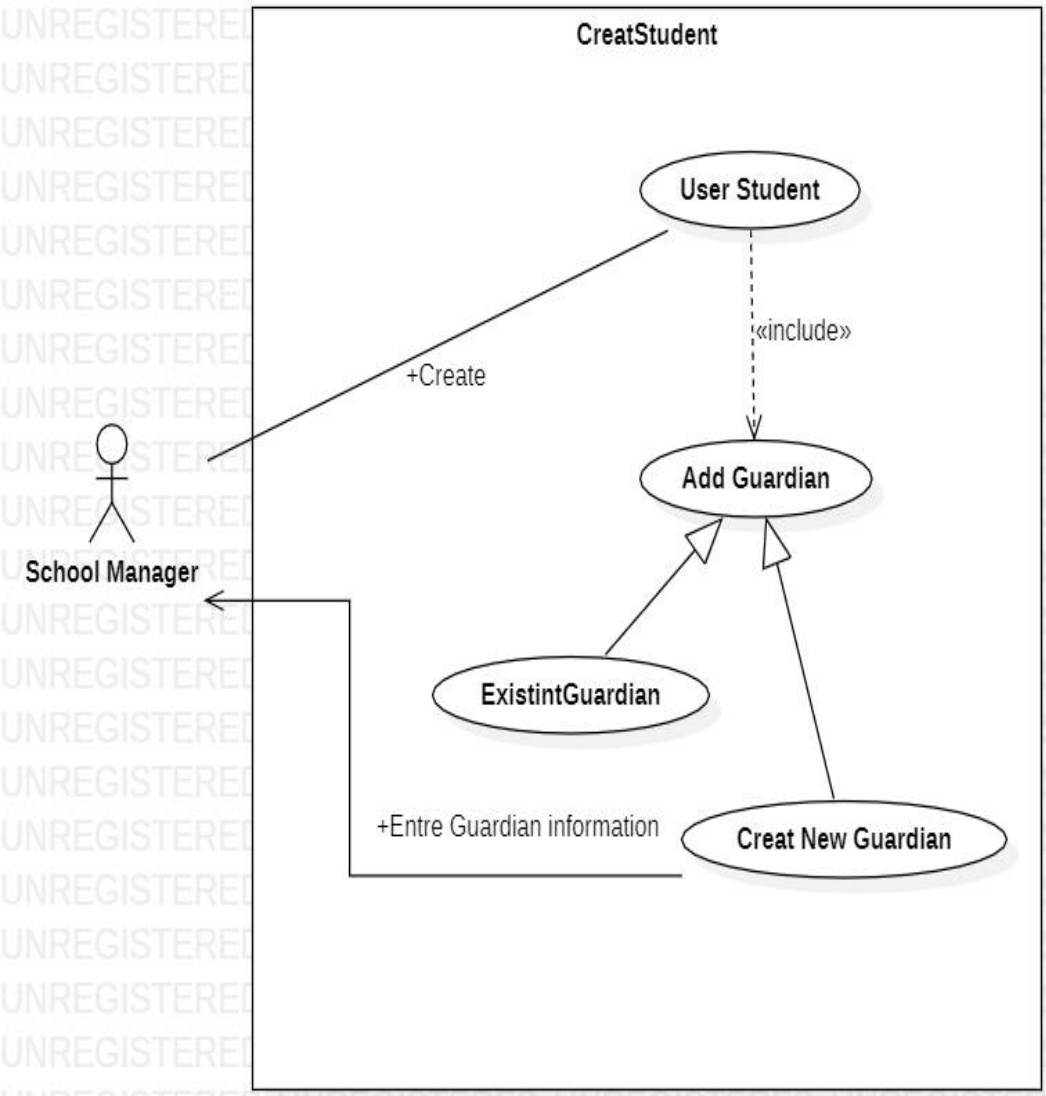
- But the real design is in the form of a "schema", which we create with the help of npm mongoose in node.js so the tables and their relations becomes schema

Example: the table's school, level, speciality and class become to this

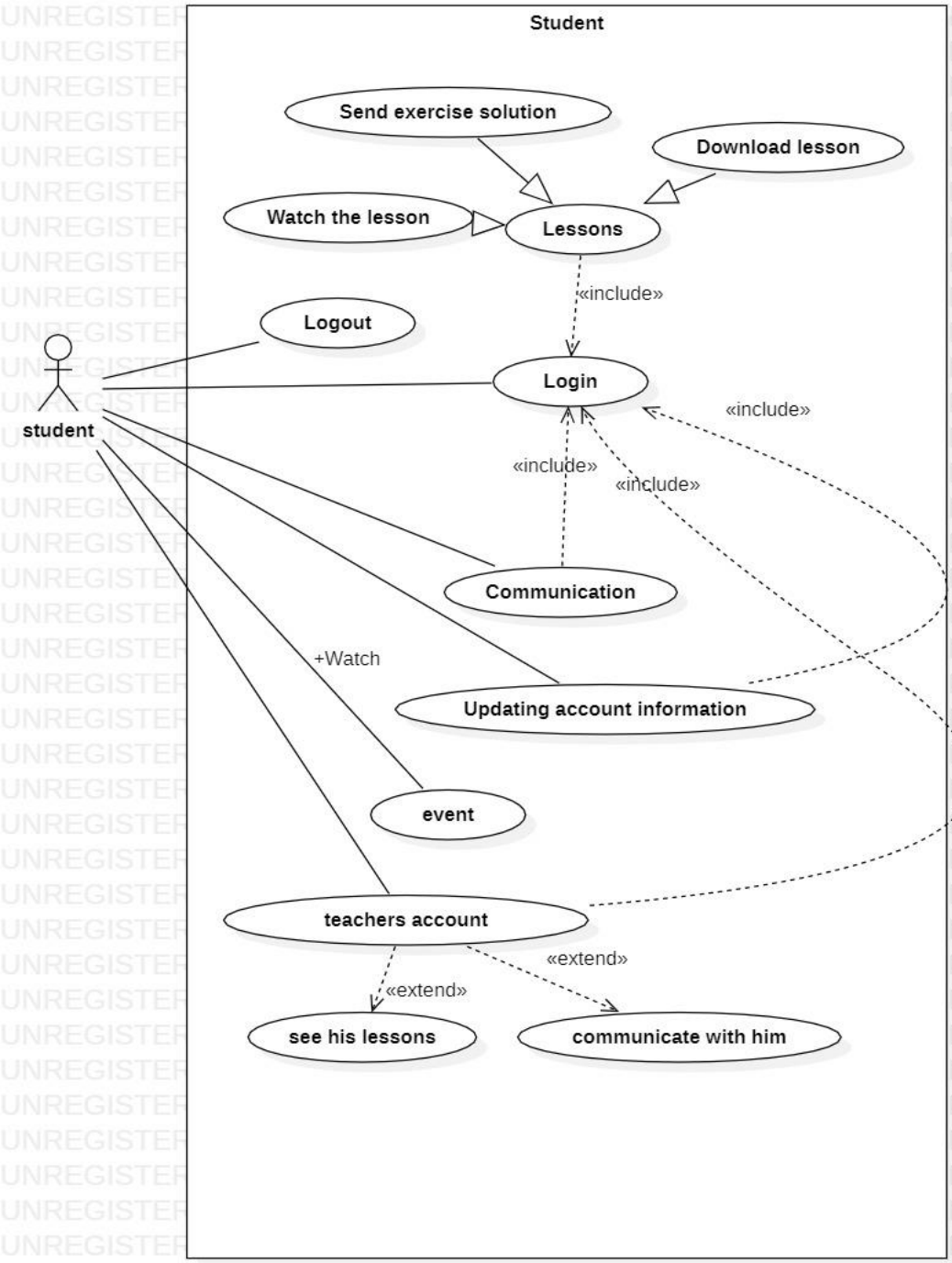
```
schoolName: {
    type: String,
    required: true,
    unique : true
},
schoolNameAr: {
    type: String,
    required: true,
},
description:{
    type:String,
    required:true,
    maxlength : 550,
    minlength : 5
},
contact : { type: Schema.Types.ObjectId, ref: 'contact' },

location: {
    type: Schema.Types.ObjectId,
    ref: 'location'
},
type : {
    type : String
```

```
    type : {
        type : String,
        require : true,
        enum: ["التعليم الابتدائي", "التعليم المتوسط","التعليم الثانوي" ]
    },
    students : [{ type: Schema.Types.ObjectId, ref: 'student' }],
    parents : [{ type: Schema.Types.ObjectId, ref: 'parent' }],
    teachers : [{ type: Schema.Types.ObjectId, ref: 'teacher' }],
    classes : [
        {
            level : {
                type : String,
            },
            speciality : [
                {
                    specialityName : {
                        type : String,
                    },
                    classId : [
                        { type: Schema.Types.ObjectId, ref: 'class' }
                    ]
                }
            ]
        }
    ]
});
```

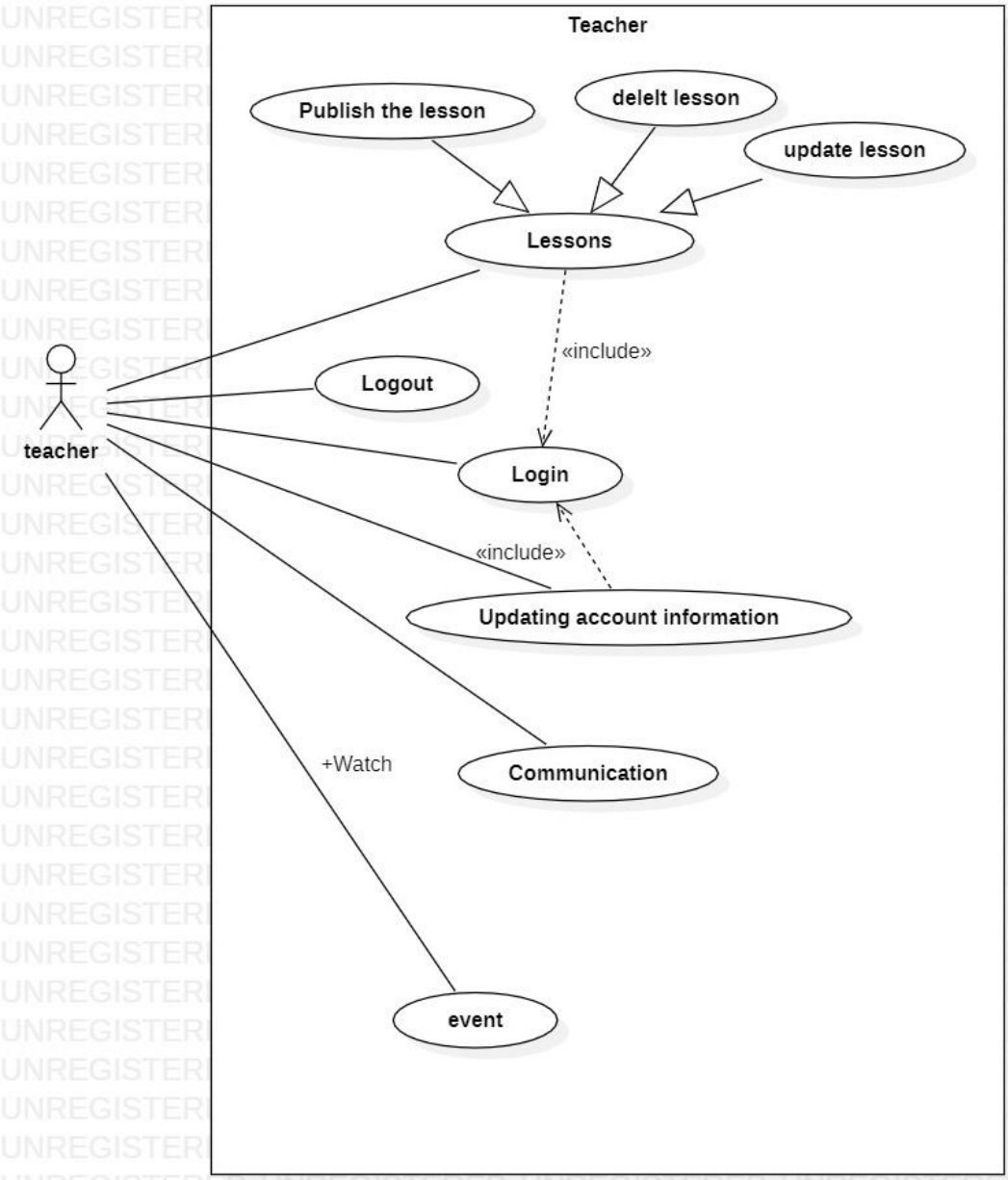
3.6. Use case diagram



Use case Diagram: Create a student with or without a parent account

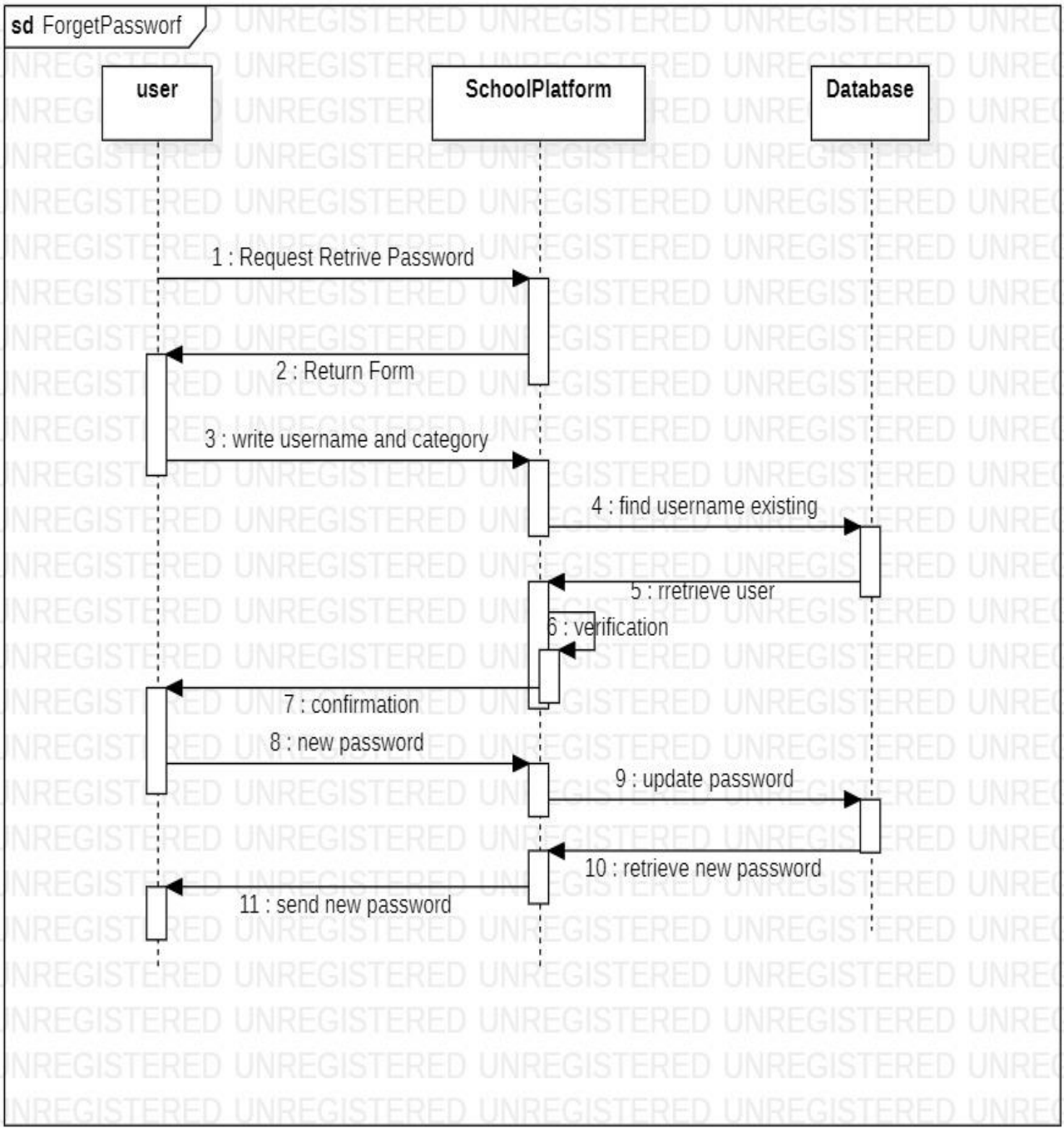


Use case Diagram: Student

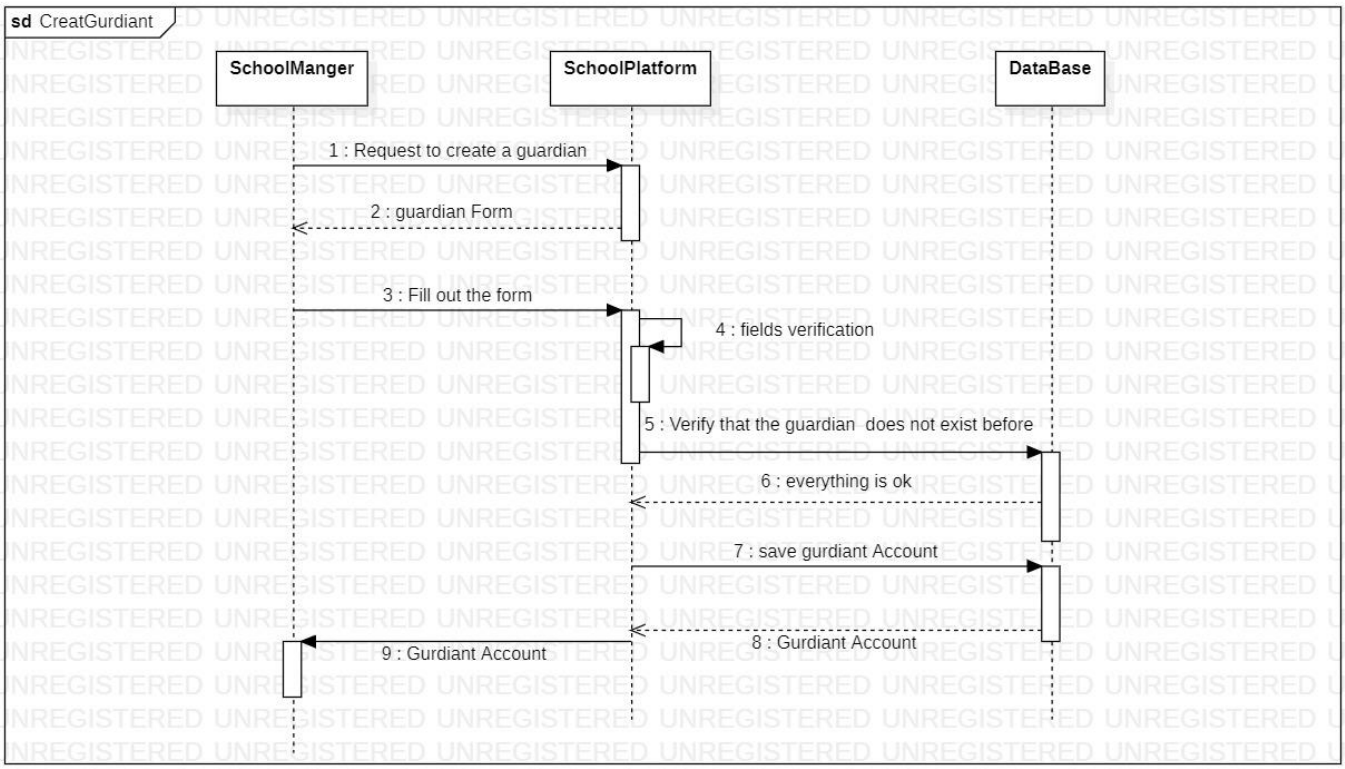


Use case Diagram: Teacher

3.7. Sequence diagram:



Sequence diagram: Forget password



Sequence diagram: Create Guardian

3.8. Project creation steps

Jwt and middleware

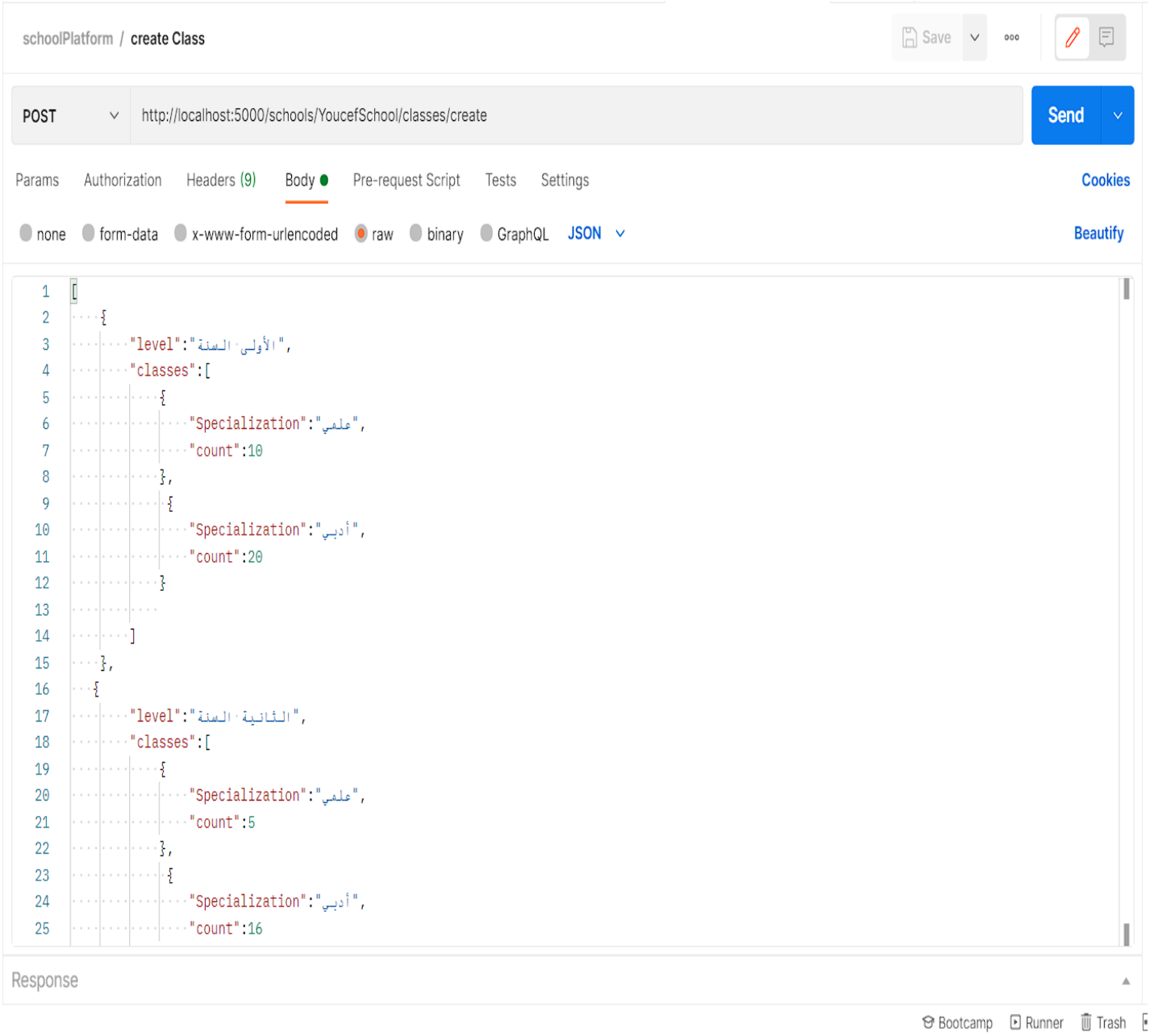
For the authenticate and authorization we use **JWT** in middleware

```
const jwt = require('jsonwebtoken')
require('dotenv').config()

module.exports = function auth(req , res , next){
    const token = req.header('x-auth-token')
    if (!token) return res.status(401).send('Access denied. No token provided.')

    try {
        const decoded = jwt.verify(token ,process.env.PrivateKey)
        req.user = decoded
        next()
    }
    catch (ex){
        res.status(400).send('Invalid token.')
    }
}
```

Simulation the requests:

We use Postman to simulate applications request in order to separate the work so the backend engineer does not need a FontEnd engineer

Example: create Classes request



What really is storing inside Mongo DB:

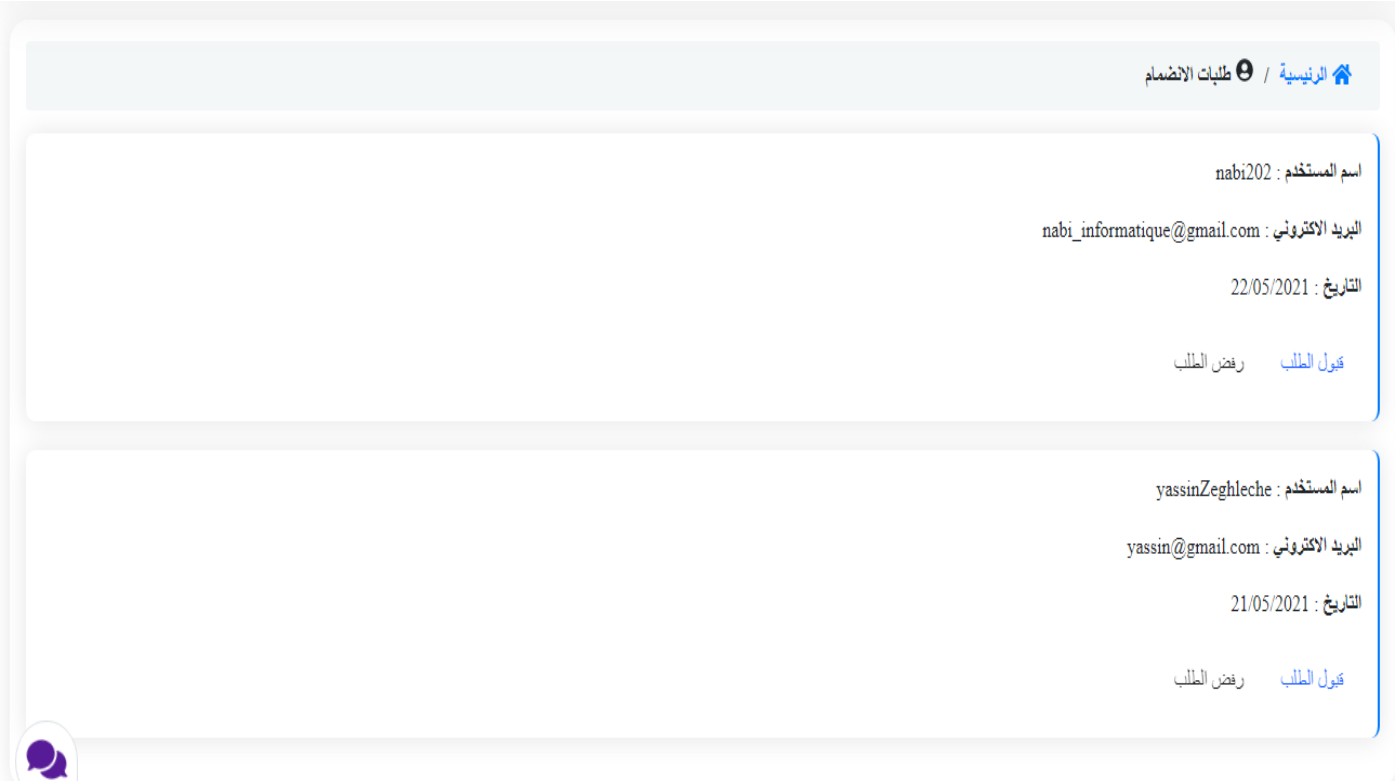
The shape that really is stored

Example: School document and their classes


```
_id: ObjectId("609ea37ed1c9c53664046977")
› students: Array
› teachers: Array
v classes: Array
  v 0: Object
      _id: ObjectId("60b8e2f60aef2d634c079b17")
      level: "السنة الأولى"
    v speciality: Array
      v 0: Object
        v classId: Array
            0: ObjectId("60b8e2f60aef2d634c079af9")
            1: ObjectId("60b8e2f60aef2d634c079afa")
            2: ObjectId("60b8e2f60aef2d634c079afb")
            3: ObjectId("60b8e2f60aef2d634c079afc")
            4: ObjectId("60b8e2f60aef2d634c079afd")
            5: ObjectId("60b8e2f60aef2d634c079afe")
            6: ObjectId("60b8e2f60aef2d634c079aff")
            7: ObjectId("60b8e2f60aef2d634c079b00")
            8: ObjectId("60b8e2f60aef2d634c079b01")
            9: ObjectId("60b8e2f60aef2d634c079b02")
            10: ObjectId("60b8e71c74692b43d86d988c")
            11: ObjectId("60b8e7ca74692b43d86d988d")
          _id: ObjectId("60b8e2f60aef2d634c079b18")
          specialityName: "علمي"
      v 1: Object
        › classId: Array
          _id: ObjectId("60b8e2f60aef2d634c079b19")
          specialityName: "أدبي"
  › 1: Object
  schoolName: "mokhtarSchool"
  description: "String"
  type: "التعليم الابتدائي"
  location: ObjectId("609ea37ed1c9c53664046976")
  __v: 54
  schoolNameAr: "somthing"
› categorys: Array
```

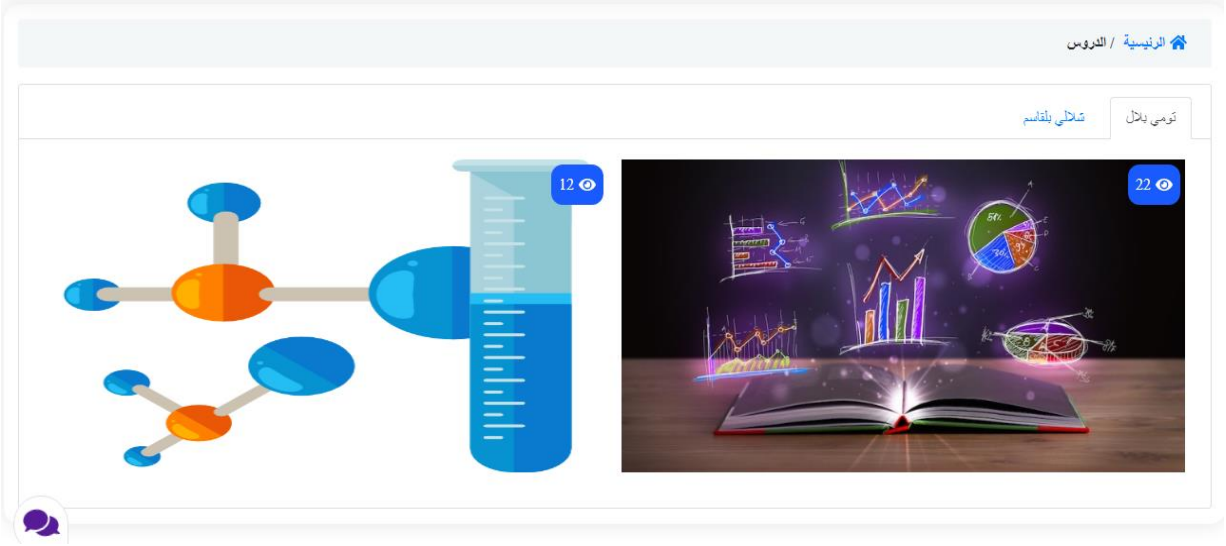
3.8.1. Admin Part:

Example: accepting, refusing schools request



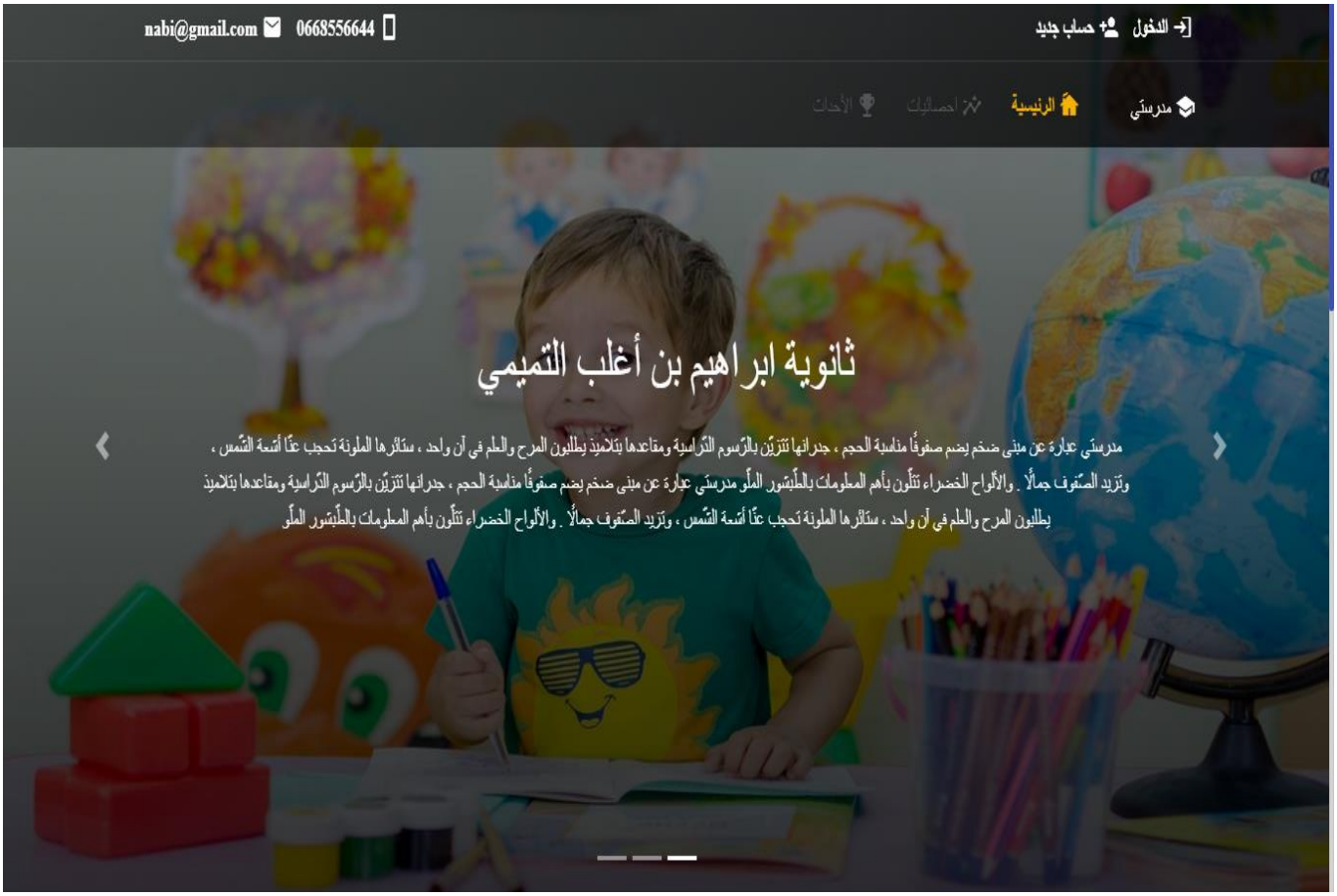
3.8.2. Guardian part:

Monitoring the student of the lessons he has attended and where he Guardian part, monitoring the student of the lessons he has attended and where he has left off

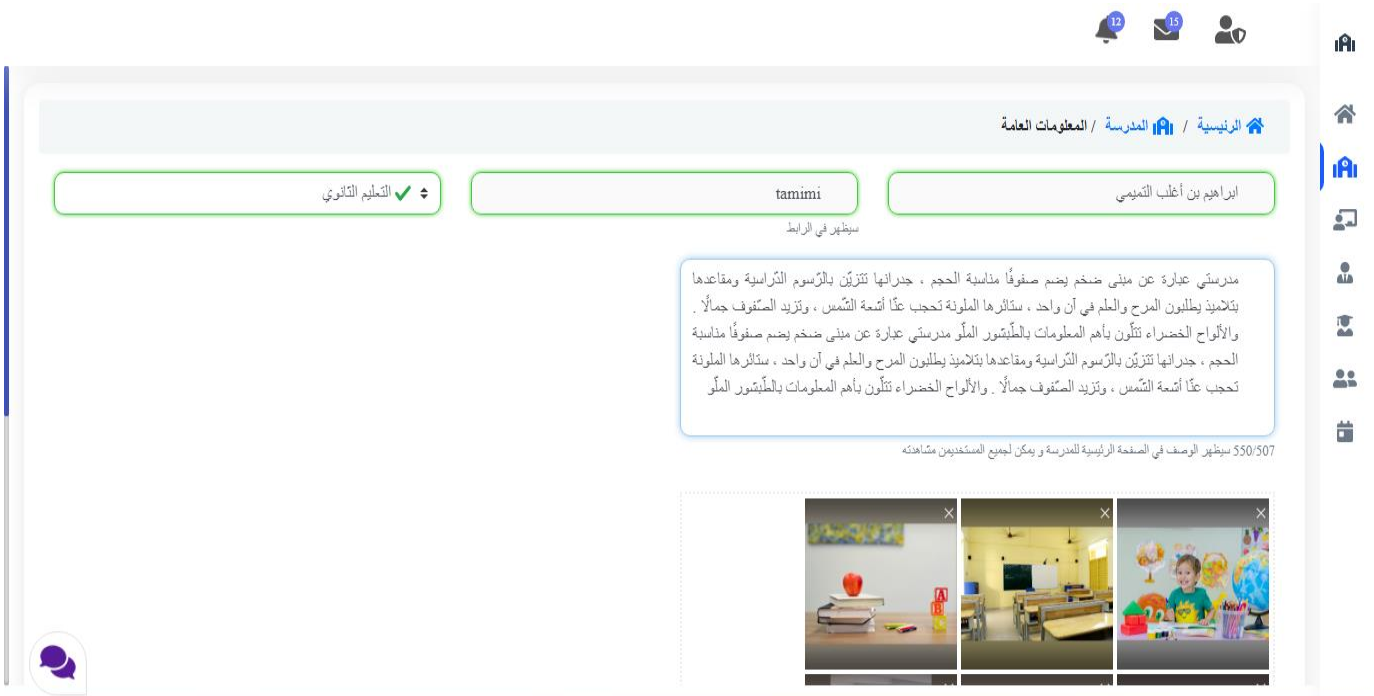


3.8.3. School Profile

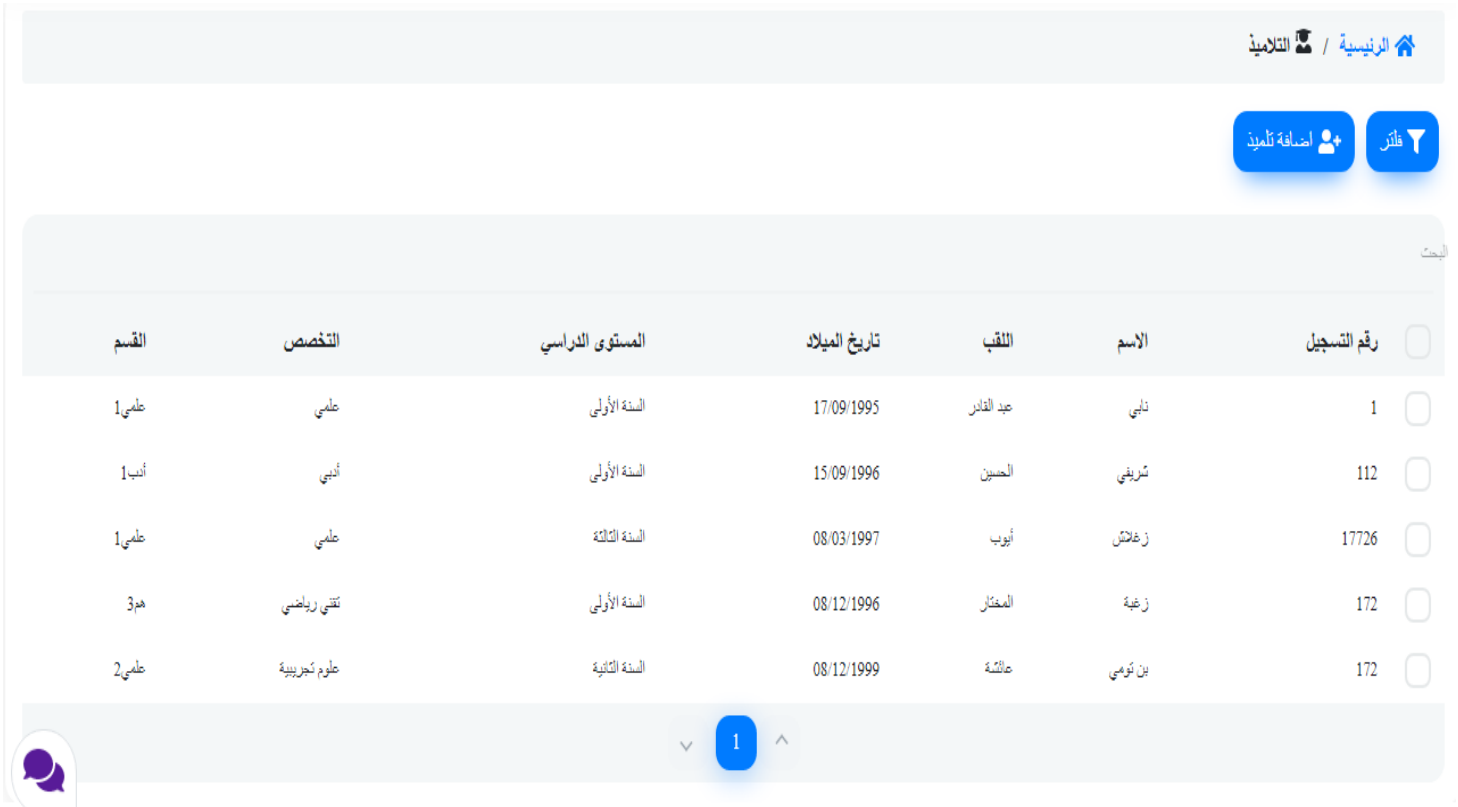
- **Main Page**



- **Updating School information**



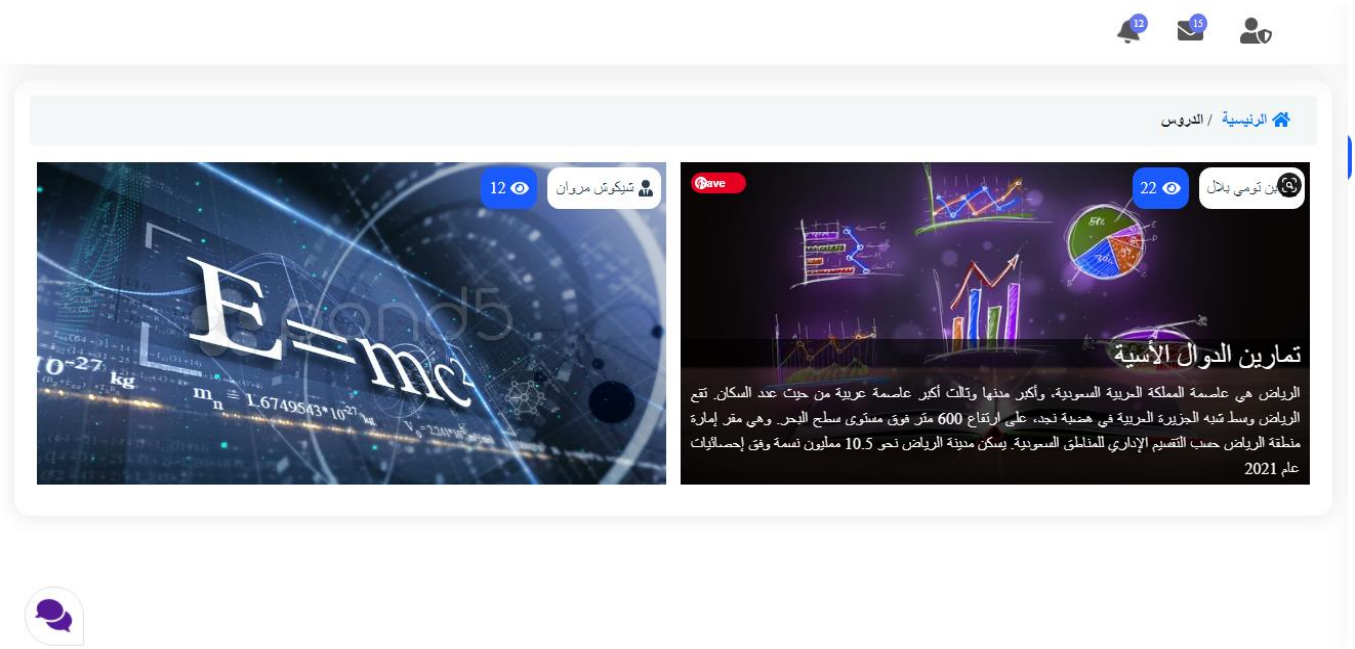
- **School students control**



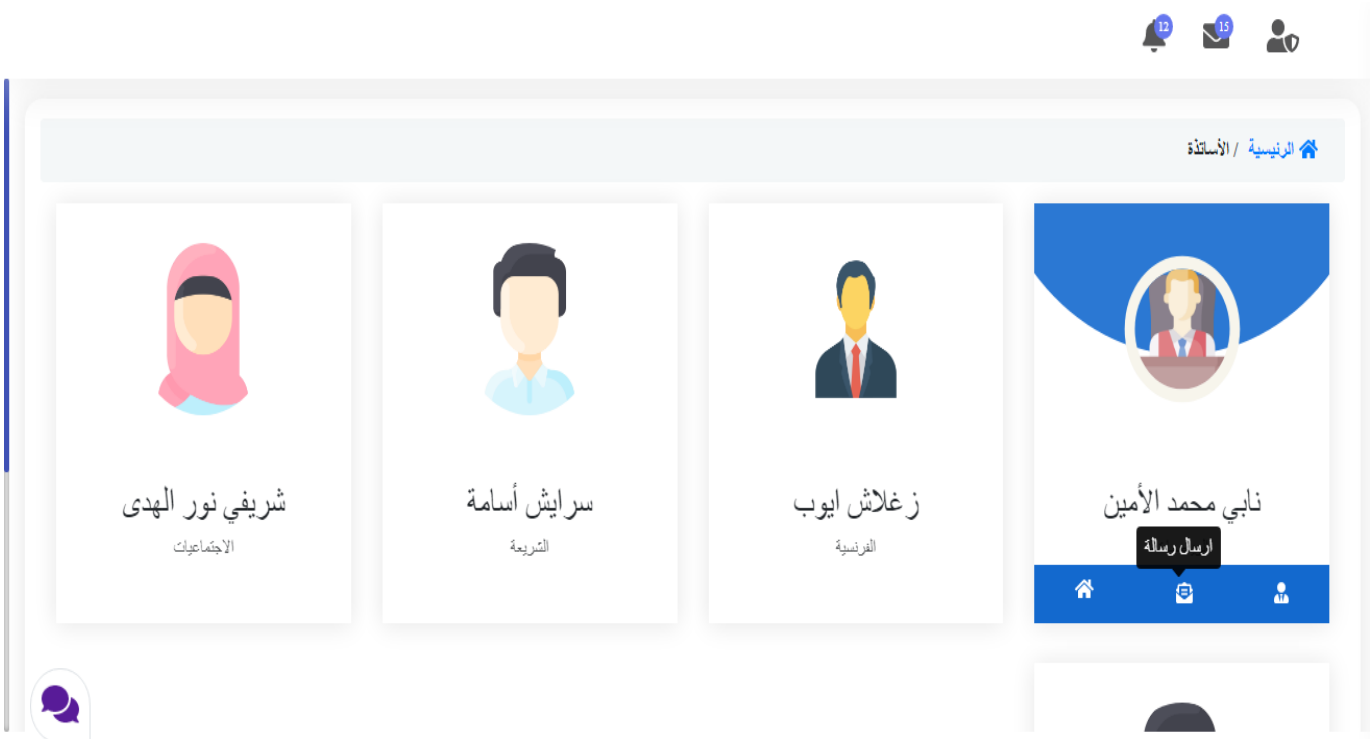
- **Dynamic insertion of classes**

3.8.4. Student Profile

- **Lessons offered on the platform by professors**

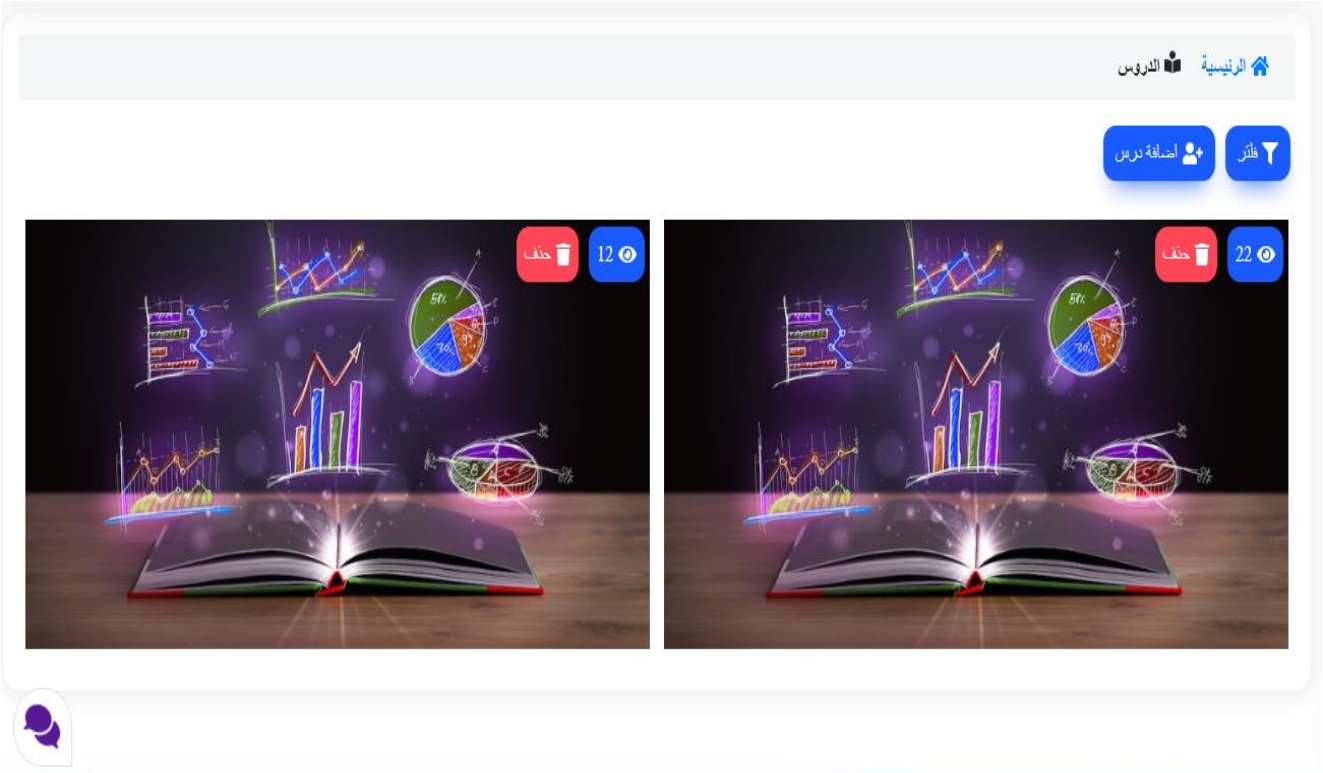


- **His teachers' accounts and the ability to communicate with them and see what they offer from lessons**

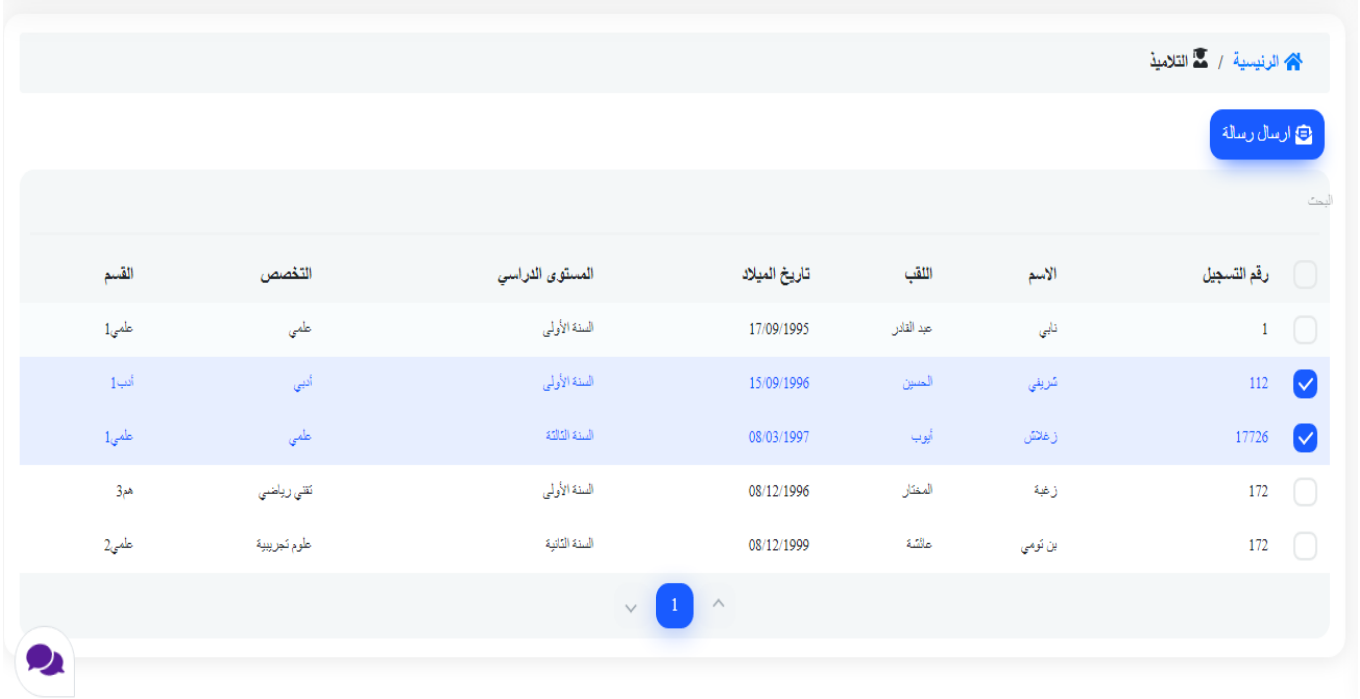


3.8.5. Teacher Profile

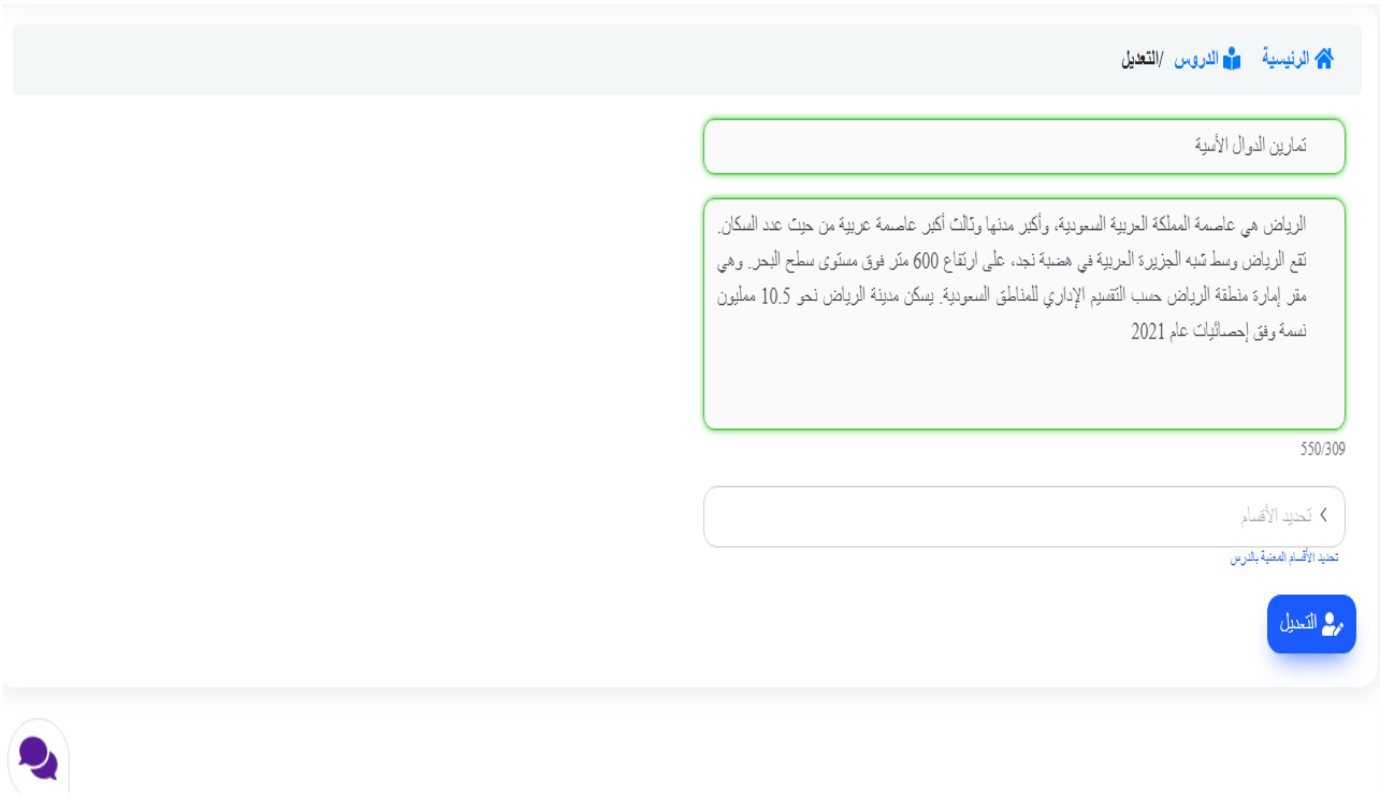
- **See the lessons, delete them and edit them**



- **Seeing his students the possibility of communicating with them or sending lessons**



- **Insert a lesson**



GENERAL CONCLUSIN

General Conclusion

Due to the huge evolution of the computer science and the widely usage of the internet, we put distance education in Algeria under the microscope specifically the three educational phases of the Ministry of Education, In an attempt to solve some of the problems raised in this topic, we used the latest and most popular languages and technologies currently used to create web applications such as:

- Node Js
- Vue Js
- bootstrap-vue
- Mongo dB
- REST API ….Etc.

We also used the Unified Modelling Language (UML) to model our system, and express the needs related to it. We explained the platform in general using "class diagram" and in addition to explaining some scenarios such as modifying the user data using "sequence diagram", also took screenshots of some of the platform's pages for clarification

Given the lack of time and difficult circumstances, especially in light of the Corona pandemic, this work is only the beginning and remains open for several additions. We aspire to provide the following additions:

- Create an application for the platform for smartphones that runs on all operating systems
- The possibility of teaching with live broadcast technology
- Add comments and interactions between teachers and students, to know their opinions and benefit from them
- Add the possibility of requesting and extracting official administrative documents such as the school certificate
- Health follow-up of students by creating a medical file for each student

At the end of this summary, we consider our work as a small step forward and we ask God to benefit us in the near future

Recommendations:

- Implementing training courses in the use of computers, the Internet et and digital floors

for e-learning, such as Moodle and Brokers, for students and professors;

- Providing a strong internet connection at the national level and spreading it in remote

areas;

- Providing the professor and students with electronic devices that assist him in elearning;

- E-learning requirements whether electronic devices or software, must be secured in

advance and maintained on an ongoing basis.

- Spread awareness of the concept of e-learning and its importance, and how to benefit

from it at the level of higher education institutions, especially in the light of the Corona

crisis and circulate it even after the crisis;

- Increasing support for universities to upgrade the e-learning infrastructure;

- Increase financial allocations for e-learning;

- Providing rooms equipped with devices and equipment necessary for the e-learning

process;

- Conducting studies on the requirements and obstacles to e-learning in Algerian

universities;

- Conducting comparative studies between the requirements of e-learning in Algeria and

in the leading countries in this field;

- Establishing an independent department specialized in e-learning at the local level

(universities) and at the central level (the Ministry of Higher Education) to follow up its

implementation;

- Forming a working group at the level of all colleges of the university that studies and

directs the use of e-learning and its applications in all Its branches; and the creation of a

platform that helps implement the principles of governance, on top of which is

electronic monitoring.

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Abstract

In this note, we dealt with a group of ideas and concepts and discussed their origin and history, such as distance education, online education, distance education platforms and many more ...., until we came up with our idea, which is the distance education platform for non-university levels, and in this context we proposed The way to embody the idea from diagrams and tools to pictures of what we have accomplished and presented.

résumé

Dans cette note, nous avons traité d'un groupe d'idées et de concepts et discuté de leur origine et de leur histoire, tels que l'enseignement à distance, l'enseignement en ligne, les plateformes d'enseignement à distance et bien d'autres encore ...., jusqu'à ce que nous ayons notre idée, qui est le plate-forme d'enseignement à distance pour les niveaux non universitaires, et dans ce contexte, nous avons présenté la méthode de création de l'idée à partir de diagrammes et d'outils jusqu'aux images de ce que nous .avons réalisé et présenté

ملخص

في هاته المذكرة تناولنا مجموعة من الأفكار والمفاهيم وناقشنا منشأها و تاريخها كالتعليم عن بعد ،التعليم عبر الانترنت ، منصات التعليم عن بعد والكثير .... ، الى ان توصلنا الى طرح الفكرة الخاصة بنا الا وهي منصة التعليم عن بعد للأطوار الغيرجامعية ، وفي هاذا السياق طرحنا طريقة إنشاء الفكرة من مخططات وأدوات الى صور مما أنجزناه ووقدمناه .

Hashtags

#E-learning #Distance education #Online learning #platform #Web technology #schools #students #Front-End #Back-End