

Table of Contents

I.	Introduction:.....	5
II.	Server Technologies and management services associated with hosting and managing websites:.....	6
	DNS (Domain Name Server):.....	6
	A. Purpose of DNS:.....	6
	B. Types of DNS:	6
	C. How the domain names are organized and Managed:.....	9
	Purpose and relationships between communication protocols, server hardware, operating systems and web server software with regards to designing, publishing and accessing a website:	10
	A. Definition:.....	10
	B. Purpose for publishing and accessing the Websites:.....	11
	C. Relationship:.....	11
	Web Development Technologies and Framework:.....	13
	Influence of search engines on website performance:	13
III.	Analysis of the Website:	16
	A. Home Page:	16
	B. Students:	16
	C. Parents:	16
	D. Schools system:	17
	E. About Us and Contact Us:.....	17
IV.	Website Creation Tools and Method:	18
1.	Method Used/ UX and UI evaluation:	18
2.	Technologies:	19
	A. Front-end Technologies:.....	19
	B. Back-end Technologies:	20
	C. Capabilities of the Backend and Frontend technologies:	21
	D. Relationship between Front-End and Back-End website technologies:.....	21

E.	How frontend and backend relate to presentation and application layer:.....	21
F.	Tools and Techniques involved in building a custom website:.....	23
V.	Design Document:	25
A.	Shortlisting:.....	25
B.	Site Mapping:.....	26
C.	Wireframes:.....	27
1.	Home page.....	27
2.	Students:	28
3.	Parents:	33
4.	About Us:.....	36
5.	School System:.....	39
6.	Contact Us:	39
D.	Mockups:.....	40
1.	Home Page:.....	40
2.	School:	41
Parents:	44
About Us:	46
School's System:	48
Contact Us:.....		48
E.	User and Client Requirements:	49
1.	User Requirements:	49
2.	Client Requirements:	49
VI.	Comparison between the website and the design document:.....	50
1.	Home Page:.....	50
VII.	Critical Evaluation:	51
VIII.	Test Plan and Quality Assurance:	52
1.	Test Plan:	52
2.	Website functionality and performance:.....	53
3.	Quality Assurance:.....	54

4. Evaluation of the Test Plan plus Potential Improvements:	55
Bibliography	56
Appendix 1.....	59
I. Source Code:.....	60
HTML:	60
Home Page:.....	60
Student- MiddleSchool- Login:	66
Student- MiddleSchool- Marks:.....	68
Student- MiddleSchool- Weekly Schedule:.....	73
Student- MiddleSchool- Academic Schedule:	78
Student- MiddleSchool- Activities Enrolled:.....	82
Student- HighSchool- Login:	86
Student- HighSchool- Marks:	88
Student- HighSchool- Weekly Schedule:	93
Student- HighSchool- Academic Schedule:.....	98
Student- HighSchool- Universities Enrolled:	103
Student- HighSchool- Activities Enrolled:	109
Parent- Overview:	116
Parent- Kindergarten and Preschool- Login:	118
Parent- Kindergarten and Preschool - Marks:.....	121
Parent- Kindergarten and Preschool - Schedule:	126
Parent- Kindergarten and Preschool - Activities Enrolled:.....	130
Parent- Kindergarten and Preschool - Behavior:	134
Parent- Kindergarten and Preschool -Teachers Feedback:	137
Parent - Middleschool- Login:	141
Parent - Middleschool - Marks:	143
Parent - Middleschool - Weekly Schedule:	149
Parent - Middleschool - Academic Schedule:.....	153
Parent - Middleschool - Activities Enrolled:	158

Parent - Middleschool - Behavior:	161
Parent - Middleschool – Teachers Feedback:	165
Parent - Highschool- Login:.....	169
Parent - Highschool - Marks:	172
Parent - Highschool - Weekly Schedule:	177
Parent - Highschool - Academic Schedule:	182
Parent - Highschool - Universities Enrolled:	186
Parent - Highschool - Activities Enrolled:.....	193

I. Introduction:

I work for as front-end developer for a leading web-solutions and marketing company, where I have been tasked by my manager to create an interactive modern website for one of the governmental partners departments in Jordan (Ministry of Education, Ministry of Higher Education, Ministry of Health, Ministry of Water and Irrigation, Ministry of Foreign Affairs). For this task, I've chosen to create the website for the Ministry of Education; because after looking thoroughly at their existing website, I've found that it needs an upgrade, because it is not as modern as the other country's Ministry of Educations and doesn't have functionalities that help the parents and students.

II. Server Technologies and management services associated with hosting and managing websites:

In this section, I'll be taking about what a DNS is, along with identifying its purpose and types DNS, including explanations on how the domain names are managed and organized. After that, I'll be explaining the purpose and relationships between communication protocols, server hardware, operating systems and web server software with regards to designing, publishing and accessing a website. Then, I'm going to evaluate the impact of common web development technologies and frameworks with regards to website design, functionality and management. And finally, I'll be reviewing the influence of search engines on website performance and provide evidence-based support for improving a site's index value and rank through search.

DNS (Domain Name Server):

“The Domain Name System (DNS) is the phonebook of the Internet. Humans access information online through domain names, like nytimes.com or espn.com. Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources.” (cloudflare, n.d.).

A. Purpose of DNS:

DNS has great importance when it comes to publishing website; since it maps a name to the IP address of the website. Let's say that you want to search for Google, you just must type Google.com rather than writing the IP address for Google each time you want to search for it. So, the purpose of the DNS is to ease the process of searching through the web, so that the user wouldn't have to go and memorize the IP address for each website on the web, because it will be either troublesome and sometimes impossible.

B. Types of DNS:

1. DNS Resolver:

“A DNS resolver, also known as a resolver, is a server on the Internet that converts domain names into IP addresses.” It receives DNS queries that a human cant read or understand and then converts them into readable hostname such as www.Google.com. Also, its responsible for tracking the IP address for the Hostname along with acting as the middleman between a client and DNS server after receiving a DNS query from a web client then a DNS resolver will either respond with cached data or send a request to root nameserver. Here are the steps for how the DNS resolver works (Hope, 2019):

1. The DNS resolver receives a domain name, then queries one of thirteen root nameservers.
2. The root nameserver maintains an up-to-date index of TLD nameservers, each of which handles a specific TLD, such as .com, .org, or .net. The root nameserver passes the query to a server that handles that TLD.
3. The TLD nameserver maintains an up-to-date index of authoritative nameservers within that TLD. The query is forwarded to the server associated with that domain name.
4. The authoritative nameserver's index contains the server address information, as kept on record by the domain name registrar whose services are directly contracted by the domain name owner.
5. This information is recursively returned to the DNS resolver, which responds to the requesting user with the resolved IP address.

And here is diagram that further explains the process:



(Hope, 2019)

2. DNS Root nameserver:

“A root name server (also called a DNS root server or a root server for short) is responsible for fundamental functions when it comes to translating domain names into IP addresses: it answers client requests in the domain name system’s root zone (the root zone marks the largest layer in the DNS’ name space). Here, the root name server doesn’t execute the name resolution itself and instead informs the requesting client about which other name server (DNS server) it can obtain further information from regarding the desired IP address.” (Knowhow, 2019)

“This is carried out via the so-called root zone file, which is an important element of every DNS root server. The file itself only contains a size of roughly 2 MB. However, it contains all the names and IP addresses of all the top-level domains (TLDs). This data belongs to an important function: the root server relies on this file if it names the name server that contains the necessary details of its request.” (Knowhow, 2019)

3. TLD nameserver:

“A TLD (top-level domain) is the highest level of domain names in the root zone of the DNS of the Internet. For all domains in lower levels, it is the last part of the domain name, that is, the label that follows the last dot of a fully qualified domain name. In other words, the last part of an Internet domain name that follow the final dot of a fully qualified domain name. For example, in the domain name www.dnsknowledge.com, the top-level domain is com.” (DNS, 2009)

“Internet Corporation for Assigned Names and Numbers (ICANN) looks after most top-level domain. It operates the Internet Assigned Numbers Authority (IANA) and is responsible for maintaining the DNS root zone. DNS server which keeps all root zone is called TLD name server.” (DNS, 2009)

4. Authoritative nameserver:

“An authoritative name server provides actual answer to your DNS queries such as – mail server IP address or web site IP address (A resource record). It provides original and definitive answers to DNS queries. It does not provide just cached answers that were obtained from another name server. Therefore, it only returns answers to queries about domain names that are installed in its configuration system. (DNS, 2009)” There are two types of Authoritative Name Servers:

1. Master server (primary name server)
2. Slave server (secondary name server)

C. How the domain names are organized and Managed:

1. Organization of the domain names:

“Domain names are registered on a first-come, first-served basis. The requirements for registration vary between the different gTLD and ccTLDs. Some of them are open, in the sense that there are no restrictions on the persons or entities that may register names. Others are restricted, in that only persons or entities satisfying certain criteria (eg, residency in the territory) may register names in them.” (Bettinger, n.d.)

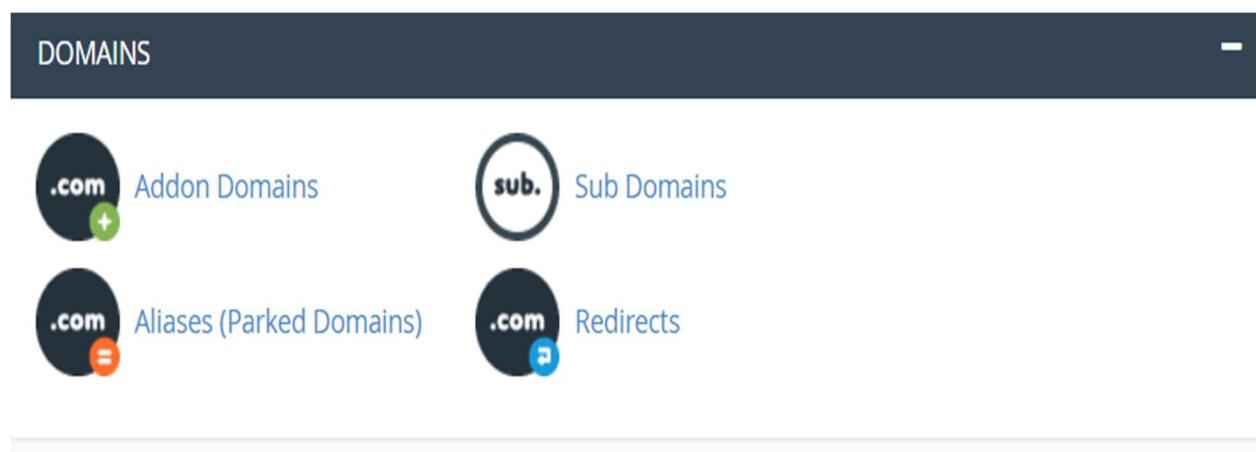
“As a domain name functions as an address, no two entities can have the same domain name under the same top-level domain. It is, however, possible for the same term to be registered by separate entities in different top-level domains.” (Bettinger, n.d.)

“Third- and fourth-level domains are usually chosen by the registrant of the second-level domain name, but, as seen above, certain registration authorities control the second and third-level domains so as to designate, for example, the purpose or locality of the domain.” (Bettinger, n.d.)

2. Managing Domain Names:

“Domain management, or domain name management, refers to the ongoing tasks of keeping a personal or corporate domain (or domains) stable, secure, and able to support related websites. The domain name not only establishes its owner’s presence on the Internet, it also serves as a portal to a business or personal website designed to serve that owner’s unique needs. Site owners may be tempted to focus all their attention on setting up and maintaining the website itself, but managing the domain is a key factor in keeping the website live and accessible.”

The hosting I used to publish my website offer ways to manage the domain names I pointed to my website. Here are the ways to manage domain names on Infinityfree.net:



Addon Domains: “you can add your own domains that you have registered with a domain registrar. Once you have added your domain, a unique clearly labelled folder will be created on our system and you will be able to upload your domains content within it either by FTP, File Manager, Website Builder or Script Installer” [1]

Sub Domains: “Subdomains are URLs for different sections of your website. They use your main domain name and a prefix. For example, if your domain is maindomain.com a sub-domain of your domain might be new.maindomain.com. Subdomains are relative to your account htdocs directory. A folder in the same name as the subdomain is created for you to upload your websites files into. Each sub domain is a new unique website.“ [1]

Aliases (Parked Domains): “Parked Domains (Domain aliases) allow you to "point" or "park" additional domain names to your existing hosting account. This will allow users to also reach your website when entering the "parked" or "pointed" domain into their browsers. To park a domain on an existing site on your account you can use the options below, remember you must change the nameservers first!” [1]

Redirects: “Here you can add / remove redirects (http 301) for your sites.” [1]

Purpose and relationships between communication protocols, server hardware, operating systems and web server software with regards to designing, publishing and accessing a website:

A. Definition:

1. Communication Protocols:

“Communication protocols are formal descriptions of digital message formats and rules. They are required to exchange messages in or between computing systems and are required in telecommunications” ([techopedia, n.d.](#))

Popular protocols include: File Transfer Protocol (FTP), TCP/IP, User Datagram Protocol (UDP), Hypertext Transfer Protocol (HTTP), Post Office Protocol (POP3), Internet Message Access Protocol (IMAP), Simple Mail Transfer Protocol (SMTP).

2. Web Server Hardware:

“As hardware, a Web server is a computer that holds web server software and other files related to a website, such as HTML documents, images and JavaScript files. Web server hardware is connected to the internet and allows data to be exchanged with other connected devices.” ([Rouse, 2019](#))

3. Host Operating System:

“A host operating system is the primary operating system (OS) installed on a computer system's hard drive. In most cases, there is only one host OS. Other OSs, known as virtual OSs, may operate within the host OS.” (techopedia, n.d.)

“When virtual operating systems are required to deal with computer resources in different ways, one or more virtual operating systems are installed within the host operating system, allowing the operating systems to function simultaneously. However, the host operating system must boot first, then the other operating system(s) boots.” (techopedia, n.d.)

4. Web Server Software:

“A Web server is a computer system that hosts websites. It runs Web server software, such as Apache or Microsoft IIS, which provides access to hosted webpages over the Internet. Most Web servers are connected to the Internet via a high-speed connection, offering OC-3 or faster data transmission rates. A fast Internet connection allows Web servers to support multiple connections at one time without slowing down” (techterms, 2018)

B. Purpose for publishing and accessing the Websites:

Web publishing could be a process of publishing original content on the internet and these processes embody building and uploading web site and updating the pages as well as it is comprising of private, business and community websites additionally to eBooks and blogs. additionally, net business enterprise includes completely different files like text, video, pictures and alternative supply of media and it's conjointly called on-line business enterprise. net accessing means that net access that embody access to web and it's a system of electronically hold on machine-readable text document that is employed in World Wide Web to transfer webpage data from the webserver to the browser.

C. Relationship:

Starting with Communication protocols, communication protocol could be a system of rules that permit 2 or additional entities of a communication system to transmit info through associate degree reasonably variation of physical amount and represents an agreement between human activity devices. Similarly, while not a protocol simply 2 devices are connected however cannot be communicated and protocol defines the format of packets and also the rules for human activity them across the network also as completely different protocol give different levels of service like

easy error correction, multimedia system information retrieval et al. too. in addition, there are four parts of knowledge communication and that they are Message, sender, receiver, transmission medium and protocol also as there are varied properties of a transmission that a convention will characterize.

Similarly, net server hardware helps to deliver web page that may be accessed through the net and it matters the web traffic as a result of it's have to be compelled to be ensured that HTTP requests are repaired inside minimum reaction time and web server hardware conjointly matters the client's read through that it's thought-about to be rude if service supplier build his customer wait in the main on the web. Similarly, Web Server hardware uses multiple processor and few desktop PCs have quite one processor and there are differing types of server hardware like web servers, mail servers and file servers and also the work of web servers is that it run Apache HTTP server which give access to websites over the net. (Christensson, 2011)

Additionally, webserver software package runs Apache or Microsoft IIS, that provides access to hosted webpages over the net. Most net servers are connected to the net via a high-speed affiliation, providing OC-3 or quicker information transmission rates and any laptop is used as web server till it connects with the net and it's a program that uses HTTP to serve the files from websites to user also because it consists of physical server, server software system and also the software that is employed facilitate HTTP communication. (Christensson, 2011)

Moreover, to work those webserver hardware, software and communication protocol a software system is required that is aware of as host operating system and host operating system uses container-based virtualization through which containers are logical partitions that's accustomed separate application on constant server and permits application on the same server to share the same operating system however still give hardware isolation. the most edges of host software system are that it will use multiple operating system environments on constant laptop and once a virtualization machine is made then it conjointly creates a virtual hard disc through that all the info are store in this virtual hard disk and if it's crashed then it'll not have an effect on the host machine. (Christensson, 2011)

Finally, to publish and for accessing the web site communication protocol, webserver hardware, software and software system is needed if anyone is absent then we tend to cannot publish or access the web site. Similarly, to publish the web site each webserver hardware and software package is needed and to speak or send message to the admin communication protocol is required also. additionally, web site is revealed by hosting, so host software system is additionally needed and that they are interconnected with one another if one isn't operating then website won't perform or work properly. eventually all the parts are needed to publish and access the web site.

Web Development Technologies and Framework:

Firstly, web development technology is a Front-End Technology used for Front-End Development which includes hypertext mark-up language, CSS and JavaScript because html is a foundation for every website and Cascading Stylesheet help vogue} to expand restricted style properties of HTML and JavaScript is employed for Back-End development also because it is that the method of communication between computers to every alternative by victimization Mark-up language. additionally, internet development technology is that the interface between web servers and web shoppers. Similarly, framework may be a code tool for developer to create and manage internet application, web service and websites also because it provides the foundations and system level services for code developers to create Content Management System (CMS) to manage digital info on the online. Framework is especially utilized by developers to outline content management capabilities and user authentication options; body tool and framework contain templating capabilities for representing info on the browser. additionally, there are different types of programing language and every have their own framework for instance, for PHP there are totally different framework like Laravel, Symfony, CodeIgniter and for .NET there's ASP.net framework and for JavaScript there are React.js, Vue.js, Meteor.js and many others. Framework is an abstraction within which common code providing generic practicality can be selectively overridden or can be specialized by user code providing specific functionality.

Influence of search engines on website performance:

1. Search Engines Optimization and the influence of the search engines on website performance:

“Search engines optimization (SEO) is a set of rules which can be followed by website (or blog) owners to optimize their website for search engines and improve their search engines ranking. Moreover, it is a great way to increase the quality of your website by making it user-friendly , faster and easier to navigate. It also can be considered as a framework since the whole process has a number of rules or guidelines, a number of stages and a set of control.” (Chris, 2016).

Nowadays, SEO becomes a lot of necessary than ever in competitive market, it serves legion users per day WHO trying to find answer to their question or for solutions to their issues.

So, the rationale that created SEO became necessary and had influence on web site performances are: (Chris, 2016).

- Firstly, virtually of search engines users are a lot of possible to click one in all prime five suggestions within the results pages. So, to require benefits of this factor and attract guests to the web site, the websites must be compelled to seem in one in all the highest suggestions.

- Secondly, SEO isn't solely a search engine, it additionally practices improve the user expertise and the capability of the web site.
- Thirdly, the user believes the search engines and having a presence within the prime suggestion for the keywords that the users are trying to find. SEO will facilitate will increase the website's trust through higher than things.
- Next, SEO is sweet for the social promotion of the web site. this suggests those that realize web site by looking Google or Yahoo are a lot of possible to push it on Facebook, Google+, Instagram or different social media channels.
- In additions, SEO is very important for the sleek running of a giant web site. The websites with over one author will like SEO during a direct and indirect approach. Increasing in computer program traffic is that the direct profit and having a typical framework (checklists) to use before business content on the positioning is the indirect benefit.
- Last however not least, SEO will place the web site become the winner of the competition. For instances, 2 websites are merchandising a similar factor, the computer program optimized web site is a lot of possible to own more customers and create more sales.

2. Evidence-based support for improving a site's index value and rank through search engine optimization:

Obviously, up SEO to own the higher SEO rankings, the web site can get a lot of access times and the higher probability that folks World Health Organization need to interact with the net site or the service of the web.

To improve SEO ranking, it's tons of thanks to try this through various optimizations starting from keywords to incoming links to header tag changes.

The clear things, the SEO ranking is incredibly abundant a metric concerning the health of the web site, which is additionally a perform of the website's performance.

The search engines mention to the net load speed, means the quicker pages would earn higher SEO rankings than slow ones.

Mention to the net hosting may be a half will indispensable to boost the web ranking on computer program. As you recognize an in-depth relationship exists between web site speed and SEO ranking. as a result of web site speed additionally depends most on the standard of the net hosting, it's continually the great plan to ascertain with the supplier to see what quite package the net have associate degreed whether an upgrade is so as.

The import things are rigorously placed header tags. It's a widely known facts that reader is delay by massive walls of text. Do them and favor , organize the web site content in a very means that's straightforward to scan to follow. build frequent use of spacing and exhausting returns to line text apart and make it flow naturally. Search engines additionally offer higher preference to keywords within header tags.

Next, incoming links are a significant influencer inside SEO ranking. The means this works is that the computer program ranks responsibility and connection of the web site partly supported what number times different sites link thereto. even as incoming links facilitate to ascertain your web site as a reputable supply of data, outward-bound links from your web site to different authoritative websites additionally plays an element in SEO.

The image optimization additionally the necessary component will facilitate improve the ranking of the web site. proof shows that a well-placed image will increase conversion rates on a web site. and, the best thanks to signal the connection of a picture to a pursuit engine is by relevant keywords.

Last however not least, change the content of the web site can facilitate the website have an extremely ranks on the search engines.

III. Analysis of the Website:

Since I'm creating a website for the Ministry of Education in Jordan, I had to go to their existing website to see what I can improve. Then after doing some research, I thought about some ideas that will make the website modern, and user-friendly. So, the basic idea of the website is that it will focus on the benefit of students and parents. Also, like any other website, it will have a page explaining about the ministry and a page to contact the ministry by sending them an E-mail. Another thing the website will have, which will benefit the parents mostly, is an explanation on the school's system in Jordan. Here are all the new and creative points that website will cover:

A. Home Page:

The home page will have the basic overview of the Ministry along with a navigation bar for the other pages. Also, there will be a small section for the news in which it will be updated weekly.

B. Students:

The students page will be a two portals (one for the middle school students and one for the high school students) for the students to enter, where the student will enter his/her ID and password, in which its given to him/her by the school registered. Once the student enters the portal he/she can check on their marks throughout the semester, along with weekly and academic schedule, and finally the activities the enrolled in during the semester, Each portal has the same functionalities except one thing in high school portal, it will have a functionality called Universities to Enroll. This functionality, as I mentioned, is only available for high schoolers; because they are the ones who will go to straight to university after finishing high school. So basically, the idea behind "University to Enroll" is that after the high school year is done and the marks are out, the "University to Enroll" will map the student's average with the universities that accept the student's average where then the student can contact them. This will save the student time to go and lookup universities to enroll on the internet, hopping they accept his/her average.

C. Parents:

The parents page will have a functionality called Monitor your Child, where it is a 3 portal (one for Kindergarten and Preschool, one for Middle school, and one for High school) system that the parents can enter by entering their ID and password given to them by the school they registered their child in where they can monitor his/her performance in school along with an overview about Monitor your child functionality. The functionalities that the portals will have are:

1. Showing the child's marks.
2. Showing the child's behavior.

3. Showing the teachers feedback on the child's performance.
4. Showing the child's Academic and Weekly schedule, except for the portal for the kindergarten and preschool, where it will only show their Weekly schedule
5. Showing the activities that their child enrolled in
6. Showing the universities that the child applied, which is only available for the high school portal.

D. Schools system:

This section of the website will mostly benefit the parents; because they will know how the system for any school in Jordan. From how the teachers should teach their students to the regulations that each school needs to abide to. Another thing this section has is the ranking of schools in Jordan; so that the parents who wants to look for the top schools can just check on the ranking without researching schools in Jordan.

E. About Us and Contact Us:

Those pages in the website are just basic pages where the about us page will just explain to the one who visit the website about the Ministry. Whereas the contact us page will allow the visitor to contact the ministry if there is a problem or something else.

If those functionalities are checked successfully, this website will be interactive, user-friendly, modern, and worth to be invested on.

IV. Website Creation Tools and Method:

After creating the sitemap to know how the website will move from page to page, then the wireframes, to sketch how the website would look like before the implementation of colors and pictures, and finally mockups to show the design with colors and pictures but with no functionalities, now it time to create the website. But before that, the tools, technologies need to build a website need to be identified, then the method to use to create the website.

1. Method Used/ UX and UI evaluation:

There are many methods for creating a functional website, it can be a custom-built website or online creation tools (Templates websites).

Custom-built websites are those which are built from scratch using a variety of tools such as HTML, CSS, and JavaScript to name but a few. In stark contrast to template-based sites, custom built sites are much more customizable, interactive, and responsive. Building a website from scratch provides all the tools needed to create and customize a website exactly how you would like it. A greater level of expertise is required when building a custom-built site, as it involves some coding, although there are several useful websites from which a novice can learn the skills needed to create such a site.

Search Engine Optimization plays a huge role in the success of a website. With custom-built websites, the developer can optimize the site during its creation, thus allowing for Google and other search engines to read each page, giving the end user more relevant search results. Subsequently, custom-built websites have a better ranking on the system.

Custom-built websites usually take longer to develop than their template-based counterparts because everything is being built from scratch and for a specific purpose or business. Long-term, it will save time and money because it is much easier to customize. Furthermore, as we continue move more into a mobile-first mentality, the responsiveness of a custom-built website will ensure a seamless transition as custom designs allow a site to be responsive across all devices and web browsers.

Using templates is a quick and easy method of starting a website. One of the most common ways to start a website is to use a WordPress platform and apply a template. This is an ideal method for someone who has no technical expertise with regards to web development as there is no coding required. The development time and associated costs are both minimal.

However, not all templates and website builders are responsive. Most are very limited, particularly with regards to using more complex features such as forms or e-commerce. They offer very little customization. In the industry, these are known as WYSIWYG (what you see is what you get) site builders. The customization features included are often very generic and weigh down the website

with regards to load spend and search engine optimization. Furthermore, the basic nature of a template along with its features and options means that other sites could be using the same template. Consequently, your website will lack individuality and will not stand out as well as desired.

Now for the User experience (UI) and User interface (UX). User experience focuses more on the technical side, what the user feels when using the website, like how does he feel when he/she moves from one page to the next, are they satisfied or dissatisfied. While the user experience is what the user sees in the website, like are they happy with the design, or are the colors hurt their eyes. So for that, there no sides for having good UI or good UX because it depends on the developer, like if the functionalities are perfectly fine, but the design is not (like the users are not satisfied with the colors), then its good UX but bad UI. Because some template has good UI and UX, but others don't, and vice versa for custom websites.

2. Technologies:

An essential part of designing a website, whether its custom built or template, is identifying the technologies to use. There are two types of technologies to use, front-end and back-end technologies. Front-end is a term that involves the building of webpages and user interfaces for web-applications. It implements the structure, design, behavior, and animation of everything you see on the screen when you open websites, web applications, or mobile apps. The core 3 technologies that all modern front-end web developers work to master are HTML5, CSS, and JavaScript. [\(glossarytech, n.d.\)](#). Whereas the backend is the portion of the website you don't see. It's responsible for storing and organizing data and ensuring everything on the client-side works. The backend communicates with the front-end, sending and receiving information to be displayed as a web page [\(FERGUSON, 2020\)](#). In this section what are the front-end and backend technologies that are most used when building a website. Then, I'm going to discuss the capabilities of front-end and backend technologies, along with the relationship between them and how can they relate to the application and presentation layer.

A. Front-end Technologies:

As I mentioned, front-end is what the user will see in the website, from the colors to the design. The most used technologies for front-end are HTML5, CSS3, and JavaScript, in which these are the ones that I'll be using to create the website for the Ministry of Health:

HTML5: "HTML5 is the latest evolution of the standard that defines HTML. The term represents two different concepts. It is a new version of the language HTML, with new elements, attributes, and behaviors, and a larger set of technologies that allows the building of more diverse and

powerful Web sites and applications. This set is sometimes called HTML5 & friends and often shortened to just HTML5.” (contributors, 2019)

CSS3: “CSS3 is the latest evolution of the Cascading Style Sheets language and aims at extending CSS2.1. It brings a lot of long-awaited novelties, like rounded corners, shadows, gradients, transitions or animations, as well as new layouts like multi-columns, flexible box or grid layouts. Experimental parts are vendor-prefixed and should either be avoided in production environments, or used with extreme caution as both their syntax and semantics can change in the future.” (contributors, 2019).

JavaScript: “JavaScript (JS) is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. While it is most well-known as the scripting language for Web pages, many non-browser environments also use it, such as Node.js, Apache CouchDB and Adobe Acrobat. JavaScript is a prototype-based, multi-paradigm, single-threaded, dynamic language, supporting object-oriented, imperative, and declarative (e.g. functional programming) styles. Read more about JavaScript.” (contributors, 2019)

B. Back-end Technologies:

Backend technologies controls the functionalities of the website, from sending emails, to login and registering and more. There a lot of backend technologies such as python’s Django or PHP’s Laravel, but the one that I’ll be using in the website is PHP’s Laravel. Here is an overview of PHP’s Laravel:

PHP (Laravel): Laravel is a web application framework with expressive, elegant syntax. They believe development must be an enjoyable and creative experience to be truly fulfilling. Laravel takes the pain out of development by easing common tasks used in many web projects, such as:

1. Simple, fast routing engine.
2. Powerful dependency injection container.
3. Multiple back-ends for session and cache storage.
4. Expressive, intuitive database ORM.
5. Database agnostic schema migrations.
6. Robust background job processing.
7. Real-time event broadcasting.

(driesvints, 2019)

C. Capabilities of the Backend and Frontend technologies:

Front-End:

1. Responsive design.
2. Markup and web languages such as HTML, CSS and JavaScript.
3. Search Engine Optimization (SEO).
4. Asynchronous request handling and AJAX.
5. Cross-browser compatibility issues and workarounds.
6. End-to-end testing with a headless browser.
7. Single page application

Back-End:

1. Scripting languages like Node.js, PHP, Python, Ruby or Perl.
2. Automated Testing Frameworks for the language being used.
3. Data transformation.
4. Application Data access.
5. Security concerns, authentication and authorization.

(palaksinghal9903, n.d.)

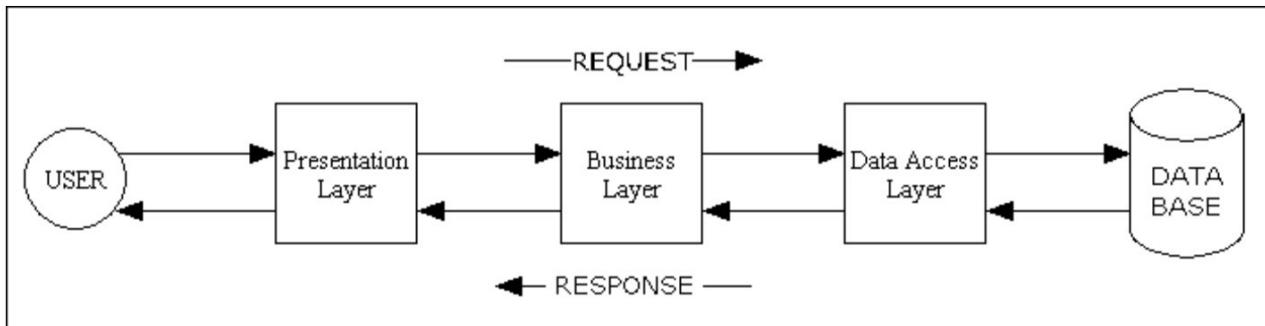
D. Relationship between Front-End and Back-End website technologies:

As I mentioned, front end is responsible for the design and responsiveness of the website, whereas backend is responsible for the functionality of the website. Frontend and backend work hand-to-hand with each other, there is no website with just front-end, it needs a backend to function. To simply put it, imagine that the frontend is the shape, look, and posture of a human, and the backend is the backbone. Without the backbone, the human body will break, it will be just an appearance but without performing any tasks. Without the backend, there is a high chance that the website will break and get hacked. That's why it is important for any website to have an appearance (front-end) and a backbone (backend) to function properly.

E. How frontend and backend relate to presentation and application layer:

Front-End and Back-Ends refers to the separation of concerns between the presentation layer, application layer and database layer as well as in front-end there is application and in back end

there are two layers i.e. application and database layer. Here is a representation of those three different layers of front-end and back-end:



Presentation Layer:

Presentation layer is known as front-end layer that consists of user interface and user interface is graphical that can be open through web browser and web application which show content and information useful to an end client. Additionally, this application layer is built by utilizing web technologies such as HTML, CSS and JavaScript and can be too built by utilizing frameworks and communicate with other layers by utilizing API calls.

Application Layer:

Application layer contains the functional business logic that drives the core capabilities of an application which is mostly written in Java, .NET, C #, Python, C++, etc.

Database Layer:

The database / data storage system and the data access layer are part of Database layer and examples of these systems include MySQL, Oracle, PostgreSQL, MongoDB, Microsoft SQL Server, etc. and Application layer accesses data through API calls.

Presentation layer is mostly deployed to the desktop, tablets and phones either through web browser or through web-based application utilizing a web server as well as application layer is mostly hosted in cloud or in dedicated workstation which depend upon the complexity and processing power required by the application. There are the different benefits of using three-layer architecture such as speed of development, scalability, performance and availability as well as it

also helps to improve development efficiency by allowing team to focus on their core competencies.

F. Tools and Techniques involved in building a custom website:

Since I'm building my website from scratch, there are a couple of tools and techniques that are needed to successfully create it, here are some that I'll be using to build the website:

I. Tools:

Mock flow: “MockFlow is an online wireframe software for designers planning, building and sharing work. MockFlow provides users with a large library of mockup components, icons, stickers and other shapes to quickly and efficiently build clean looking interface mockups.” (crozdesk, n.d.)

Gloomaps.com: Gloomaps is tool an online tool for creating sitemaps

Adobe photoshop: “Adobe Photoshop is a software application for image editing and photo retouching for use on Windows or MacOS computers. Photoshop offers users the ability to create, enhance, or otherwise edit images, artwork, and illustrations. Changing backgrounds, simulating a real-life painting, or creating an alternative view of the universe are all possible with Adobe Photoshop.” (Smith, 2019)

Visual Studio Code: “Visual Studio Code combines the simplicity of a code editor with what developers need for their core edit-build-debug cycle. It provides comprehensive code editing, navigation, and understanding support along with lightweight debugging, a rich extensibility model, and lightweight integration with existing tools.” (Microsoft, 2019)

I'll be using all those for building the website, since I already used Mockflow to create medium fidelity wireframes and Gloomaps to create the sitemap, for the developing phase I'll use the rest of the tools; because all of these tools are free to use, except Adobe photoshop, online, and can produce great quality content.

II. Techniques:

Along comes with the tools, are the techniques for building a custom website, here are the techniques that will be using for building the website:

1. Responsive Website: one of the most important things in website development is making the website responsive. Responsive means that the website can fit into any screen regarding the size. Since nowadays, users open websites from their phones, that's why the website need to be responsive, to maintain UX and UI.
2. Using High-quality Pictures: one of the things that makes a website a website are pictures; because if the website is only plain it will be unappealing to the user. For that, the use of high-quality image will be an interest to the user.
3. Creating new files for the CSS: separating the CSS code from the HTML code and putting it in a separate style sheet file is a great development practice; because if the CSS code is with HTML file, it would be harder for the developer to go back and edit, plus if the developer want to change the whole CSS code, he/she could just delete the link from the previous file and link the new one.
4. Not complicating the website for the user: the worst thing for a user is a complicated website, meaning that if the website is not clear with its navigation and the user must guess where the page, he/she wants to go is. Or if there is no way to return home when entering multiple pages in the website.
5. Maintaining Consistency: this means that the website needs to be consistent, like the home page have different text styles, then it is not consistent.

I'll be using all these techniques for the website; because this website focuses on the parents and the students, it needs to be compelling for them to enter and not complicated for them. Let's say the user entered one of the portals and he/she wants to log out, but there isn't a logout button, that's why the website needs to be friendly, modern and interactive.

V. Design Document:

After analyzing the functionalities of the website and who it will benefit from it the most, the next step is planning the process of creating the website. So, I've conducted a plan that will help me finish the website quickly, since I'm creating the website from scratch (Custom Website). Firstly, shortlisting, where I get inspiration of the design of the website from other websites on the web related to the subject (in this case Ministry of Education). Secondly, creating a sitemap, to show all the webpages that will be implemented to the website. Thirdly, creating wireframes, in which I sketch how the website would be without colors or pictures. Fourthly, Mockups, in which it is the same as the wireframe but with color, content and pictures. Fifthly, coding the website, in which I'll start coding the website based on the mockups and adding the functionalities (check the appendix called Appendix 1 to see the webpages along with the source code). Finally, comparing the final designs (Mockups) with the final pages to see whether the designs matches or not.

A. Shortlisting:

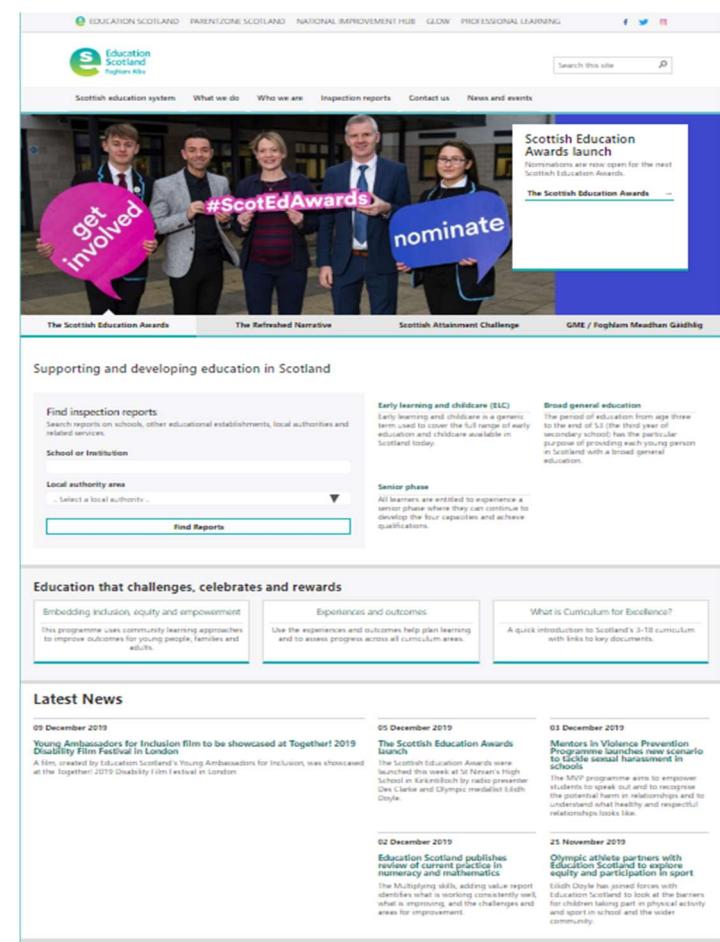
Shortlisting is “a reduced list of candidates (in this case other Ministry of education websites) for some situation that has been cut down from a larger list” (businessdictionary, n.d.). At first, my first list where 10 Ministry of education websites from different countries, which are:

1. New Zealand’s Ministry of education.
2. Scotland’s Ministry of education.
3. Jordan’s Ministry of education.
4. Italy’s Ministry of education.
5. United Arab Emirates’ Ministry of education.
6. United Kingdom’s Ministry of education.
7. Ukraine’s Ministry of education.
8. United States of America’s Ministry of education.
9. South Africa’s Ministry of education.
10. Russia’s Ministry of education.

After going through each of these websites thoroughly, I reduce the list into only three websites:

1. New Zealand’s Ministry of education
2. Scotland’s Ministry of education
3. United Arab Emirates’ Ministry of education

This was a hard choice, since all the websites looked amazing, but the one I’ve chosen to take my



The screenshot shows the official website of Education Scotland. At the top, there's a navigation bar with links to 'EDUCATION SCOTLAND', 'PARENTZONE SCOTLAND', 'NATIONAL IMPROVEMENT HUB', 'GLOW', 'PROFESSIONAL LEARNING', and social media icons. Below the header, there's a main banner for the 'Scottish Education Awards launch' with four people holding signs that say 'get involved', '#ScotEdAwards', 'nominate', and 'The Refreshed Narrative'. To the right of the banner, there's a sidebar for 'The Scottish Education Awards' with a link to 'Nominations are now open for the next Scottish Education Awards'. The main content area features several sections: 'Supporting and developing education in Scotland' with links to 'Find inspection reports' (for early learning and childcare, schools, and local authorities), 'Local authority area' (with a dropdown menu for selecting a local authority), 'Senior phase' (describing the curriculum from age 11 to 16), and 'Broad general education' (describing the curriculum from age 11 to 18). Below these are sections for 'Education that challenges, celebrates and rewards' (embedding inclusion, equity and empowerment; experiences and outcomes; and what is Curriculum for Excellence?), and 'Latest News' with several news items dated from November 2019 to December 2019.

inspiration from to build the website is Scotland's Ministry of education. Here is a screenshot of the home page of the website.

B. Site Mapping:

After the short siting comes the site mapping, where in this stage I map how the website will move from page to page. So, after analyzing my functionalities I created the site map. The website will be 43 pages, where it will start from the home page and move along with the other pages. There will be 5 portals (2 for the students and 3 for the parents), an about us page, a contact us page, and finally a page for the school system. The home page will be the center of all the pages, where it will have an overview and section for the news. Here is the site map that has been made using the tools in gloomaps.com:



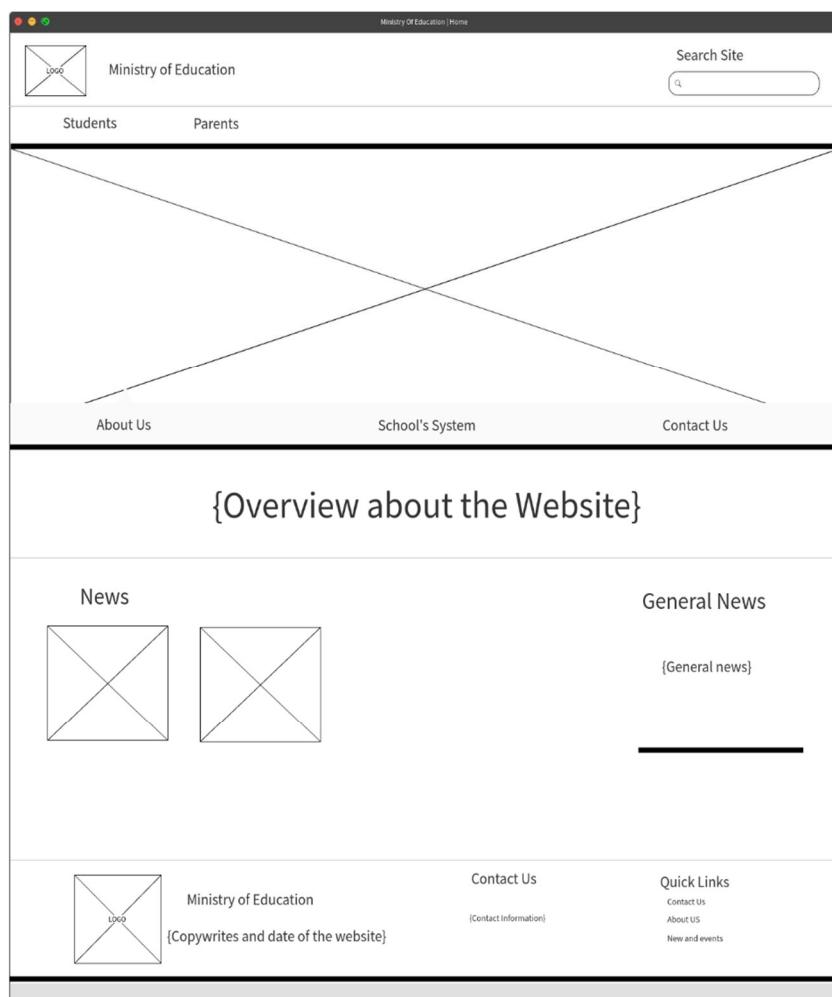
As I mentioned there will be 43 pages where the center will be page “Home”, then “Students , Parents, School’s System, About Us, Contact Us”. For the “Students” page, it will have two pages (which are considered to be portals) “Middle School and High School”, where each will have 5 pages “Activities Enrolled, Marks, Academic Schedule, Weekly Schedule”, except the “High School” page where it will have an extra page called “Universities to Enroll”. As for the parents, they will have 4 pages “Overview, Kindergarten and Preschool, Middle school, High school”. Each will have the same as the students but with two extra pages “Teachers feedback, Behavior”. As for the “Schools System” page, it will 4 pages “Education in Jordan, Regulations, Services, Schools Ranking”. As for the “About Us” page it will have only 4 pages “Education in Jordan, Vision and Mission, Our Minister, Our Role”. Finally, the “Contact Us” page where it will have only one page “Get in Touch”.

Check the link at the cover page of the report to see the site map in full details.

C. Wireframes:

After knowing what layout is going to be from the short listing and how many pages will be using the site map, now comes the how will this website look like. Wireframes are sketches of the real deal, in which they have no colors or pictures and sometimes no content, it is just to demonstrate the layout of the website. Inspired from Scotland's Ministry of Education website, I created the home page sketch, in which its somewhat of a replica to the design. As for the other pages, I created them from my own. There are 43 webpage sketches, in which the mockups need to look like them. The wireframes are created by tools from Mockflow.com. Here are the wireframes:

1. Home page



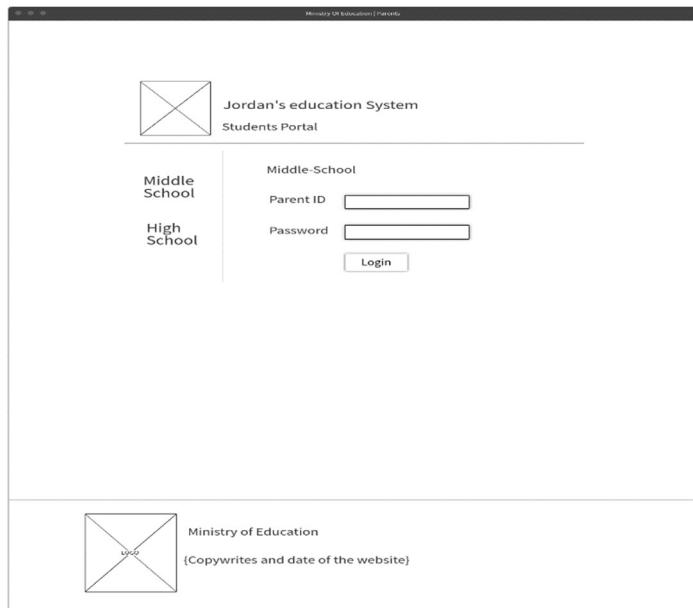
Home page:

This is the wireframe of the homepage where it has an identical design to Scotland's home page. At the header, there will be the logo and the title of the website along with a search bar. Then just below the header, there is a navigation bar, for the "Students" pages and the "Parents" (this is also a drop-down menu). Then there will be a slideshow that has some picture (only 3), and just below it, a navigation bar for the about us, school's system and contact us pages. And then there will be a section for the overview and News. And finally, a Footer, where it will contain the copywrites, logo, name of the website, quick links, and finally contact information.

2. Students:

The student page has two sections, Middle school and High School:

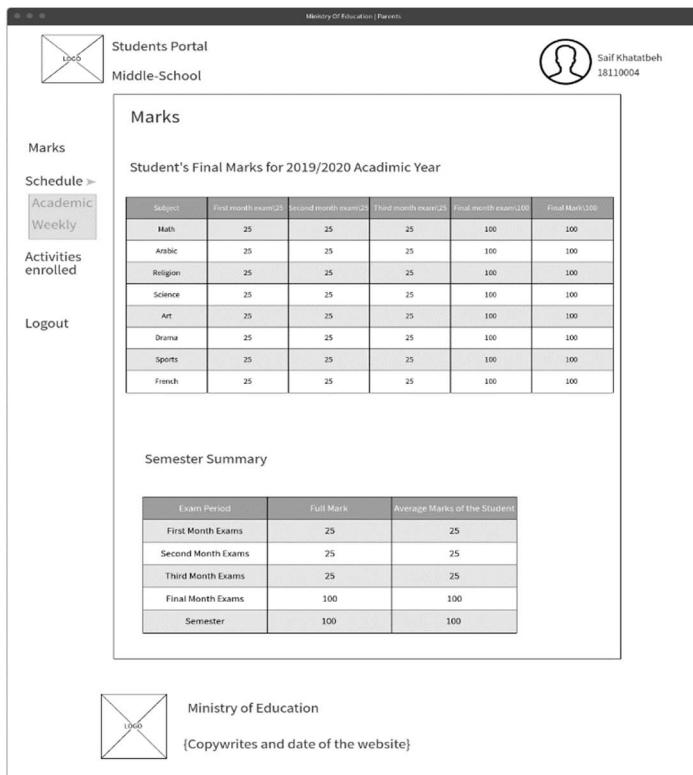
A. Middle school:



1. Login:

This is the basic design of the login page where the header will have a logo and title (Jordan Education System) along with the title of the section (Students Page). For the middle content, the page will have the two sections of “Students Page” (Middle School and High School) along with the “Middle School” portal credentials (Parent ID and the Password) with a login button. Finally, a footer that shows the logo of the ministry along with the title and the copywrites.

*Note: the design of this page is the same for the High school page



Subject	First month exam(25)	Second month exam(25)	Third month exam(25)	Final month exam(100)	Final Mark(100)
Math	25	25	25	100	100
Arabic	25	25	25	100	100
Religion	25	25	25	100	100
Science	25	25	25	100	100
Art	25	25	25	100	100
Drama	25	25	25	100	100
Sports	25	25	25	100	100
French	25	25	25	100	100

2. Marks:

Once Entering the ID and the password, the user will be greeted with the Marks page. The header will have the logo with the title of the portal (Middle School) along with a picture of the user, name and ID. For the middle section, there will be links to navigate through the portal (Marks, Schedule (Academic, Weekly), Activities Enrolled, and finally a logout link to exit the portal). For the Marks Page, there will be two schedules (one to show the student’s marks throughout the semester and one to summarize it). The footer the same as in the Login page.

*Note: the design for the rest of the pages is the same, but the content differs.

Ministry Of Education | Parents

 Saif Khatatbeh
18110004

Students Portal
Middle-School

Marks

Schedule > Academic Weekly

Activities enrolled

Logout

Academic Schedule for year 2019/2020	
Date	Event
01/09/2019	Beginning of the First Semester
01/10/2019-17/10/2019	First Month Exams
01/11/2019-17/11/2019	Second Month Exams
01/12/2019-17/12/2019	Third Month Exams
23/12/2019-31/12/2019	Christmas + New Year
01/01/2020- 20/01/2020	Final Month Exams
20/01/2020-14/2/2020	Winter Break
14/02/2019	Beginning of the Second Semester
29/02/2019-10/3/2019	First Month Exams
29/03/2019-10/4/2019	Second Month Exams
17/04/2019-24/04/2019	Easter
01/05/2019-17/05/2019	Third Month Exams
18/05/2019-23/05/2019	Break
24/05/2019-16/06/2019	Final Month Exams
16/06/2019-01/09/2019	Summer Break

Legend:

- Important Days
- Official Holidays

 Ministry of Education
(Copywrits and date of the website)

3. Schedule (Academic):

For the academic schedule, there will be the user's academic schedule along with a legend to show when are the official holiday and when are the important days.

Ministry Of Education | Parents

 Saif Khatatbeh
18110004

Students Portal
Middle-School

Marks

Schedule > Academic Weekly

Activities enrolled

Logout

Day	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth
Sunday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Monday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Tuesday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Wednesday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Thursday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Friday								
Saturday								

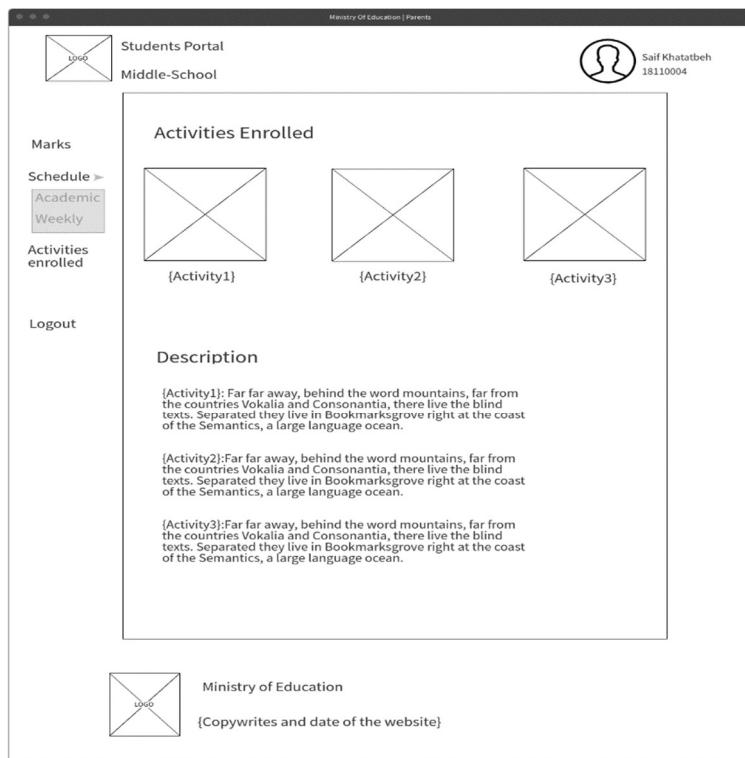
Legend:

- Important Days
- Holiday

 Ministry of Education
(Copywrits and date of the website)

4. Schedule (Weekly):

For the weekly schedule, there will be a schedule that shows what the user will take in school for the during the current year.



Students Portal
Middle-School

Marks

Schedule >
Academic Weekly

Activities enrolled

Logout

Ministry Of Education | Parents

Saif Khatatbeh
18110004

Activities Enrolled

[Activity1] [Activity2] [Activity3]

Description

(Activity1): Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

(Activity2): Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

(Activity3): Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

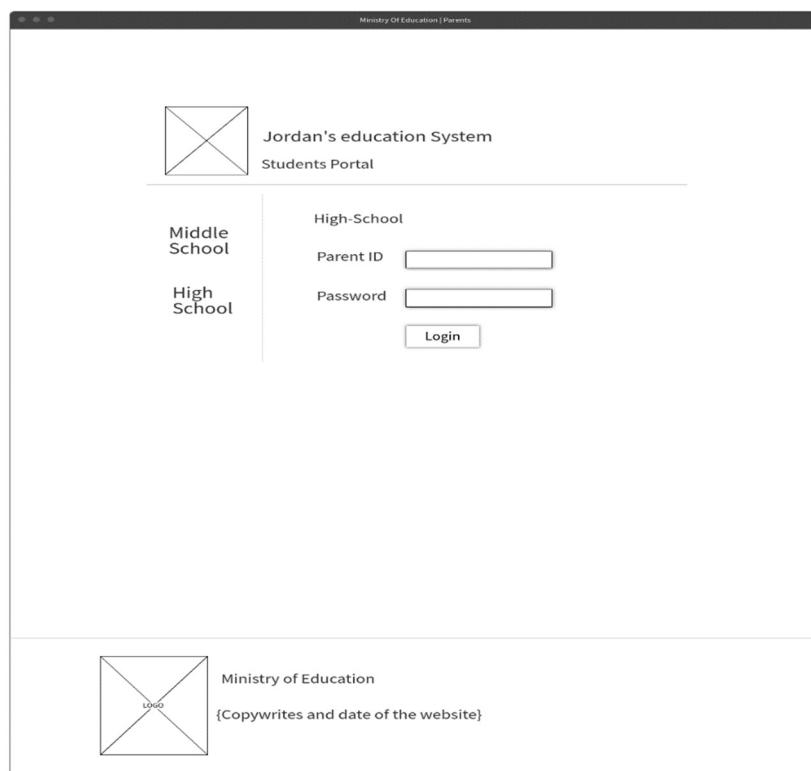
Ministry of Education
{Copywrits and date of the website}

5. Activities Enrolled:

For the activities enrolled, there will be 3 pictures of the activity the user enrolled in school along with a description of the activity

*Note: The High School Pages are the same as The Middle School Pages except one Page, that's why for the rest of the pages there will be no explanation:

B. High School



Ministry Of Education | Parents

Jordan's education System
Students Portal

Middle School

High School

High-School

Parent ID

Password

Ministry of Education
{Copywrits and date of the website}

Login Page

Marks:

Ministry Of Education | Parents

Students Portal High-School

Saif Khatatbeh
18110004

Marks

Schedule > Academic Weekly

Activities enrolled

Universities to enroll

Logout

Marks

Student's Final Marks for 2019/2020 Academic Year

Subject	First month exam(25)	Second month exam(25)	Third month exam(25)	Final month exam(100)	Final Mark(100)
Math	25	25	25	100	100
Arabic	25	25	25	100	100
Religion	25	25	25	100	100
Science	25	25	25	100	100
Art	25	25	25	100	100
Drama	25	25	25	100	100
Sports	25	25	25	100	100
French	25	25	25	100	100

Semester Summary

Exam Period	Full Mark	Average Marks of the Student
First Month Exams	25	25
Second Month Exams	25	25
Third Month Exams	25	25
Final Month Exams	100	100
Semester	100	100

Ministry of Education
{Copywrites and date of the website}

Ministry Of Education | Parents

Students Portal High-School

Saif Khatatbeh
18110004

Marks

Schedule > Academic Weekly

Activities enrolled

Universities to Enroll

Logout

Academic Schedule for year 2019/2020

Date	Event
01/09/2019	Beginning of the First Semester
01/10/2019-17/10/2019	First Month Exams
01/11/2019-17/11/2019	Second Month Exams
01/12/2019-17/12/2019	Third Month Exams
23/12/2019-31/12/2019	Christmas + New Year
01/01/2020- 20/01/2020	Final Month Exams
20/01/2020-14/2/2020	Winter Break
14/02/2019	Beginning of the Second Semester
29/02/2019-10/3/2019	First Month Exams
29/03/2019-10/4/2019	Second Month Exams
17/04/2019-24/04/2019	Easter
01/05/2019-17/05/2019	Third Month Exams
18/05/2019-23/05/2019	Break
24/05/2019-16/06/2019	Final Month Exams
16/06/2019-01/09/2019	Summer Break

Legend:

- Important Days
- Official Holidays

Ministry of Education
{Copywrites and date of the website}

Schedule (Weekly):

Ministry Of Education | Parents

Students Portal High-School

Saif Khatatbeh
18110004

Marks

Schedule > Academic Weekly

Activities enrolled

Universities to Enroll

Logout

Weekly Schedule for year 2019/2020

Day	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth
Sunday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Monday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Tuesday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Wednesday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Thursday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Friday								
Saturday								

Legend:

- Important Days
- Holiday

Ministry of Education
{Copywrites and date of the website}

Students Portal
Middle-School

Marks

Schedule >
Academic Weekly

Activities enrolled

Logout

Ministry Of Education | Parents

Saif Khatatbeh
18110004

Activities Enrolled



Description

{Activity1}: Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

{Activity2}: Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

{Activity3}: Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

Ministry of Education
(Copywrits and date of the website)

Activities Enrolled

Students Portal
High-School

Marks

Schedule >
Academic Weekly

Universities to Enroll

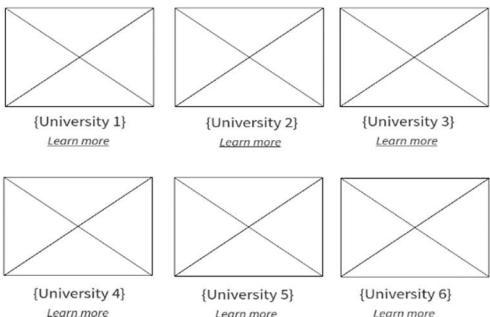
Logout

Ministry Of Education | Parents

Saif Khatatbeh
18110004

Universities to Enroll:

Here are the list of Universities that you can Enroll in based on your performance in school - academic and extracurricular wise:



{University 1} [Learn more](#)

{University 2} [Learn more](#)

{University 3} [Learn more](#)

{University 4} [Learn more](#)

{University 5} [Learn more](#)

{University 6} [Learn more](#)

For more information on how to contact these universities, please visit your university counselor in your school

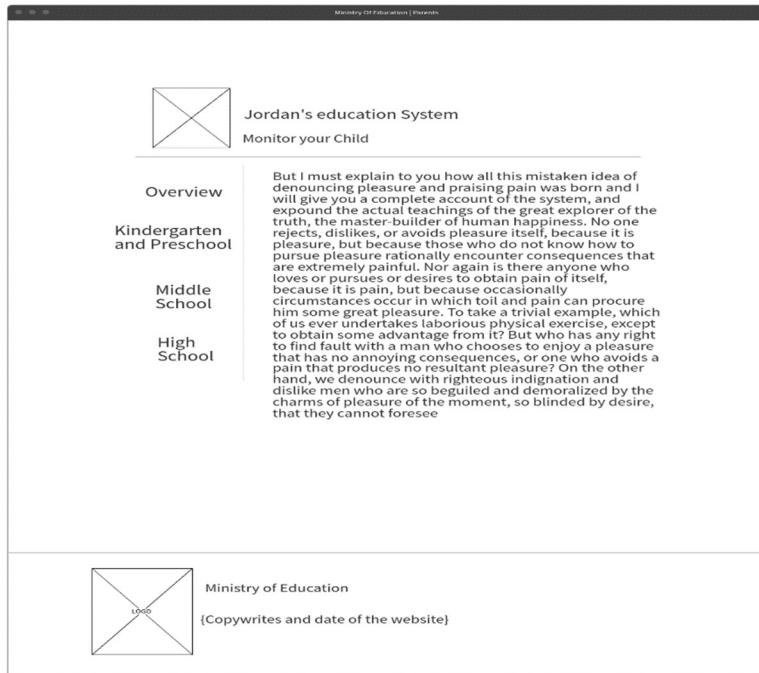
Ministry of Education
(Copywrits and date of the website)

Universities to Enroll:

For this section, there will be an overview to the page along with pictures of each university and “Learn more” links to go to the university’s website. And finally, a small caption in case of an error.

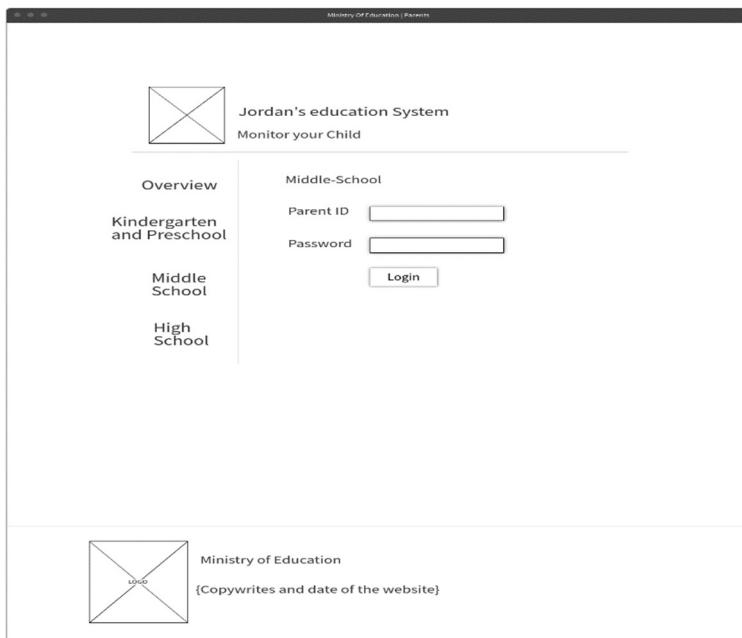
3. Parents:

A. Overview:



This page will only contain an overview to “Monitor your Child” system, which is basically a portal for parents.

B. Kindergarten and Preschool:



Login:

*Note: the design of this page is the same as Middle School login page. And this goes for the rest of the pages

Ministry Of Education | Parents

Monitor Your Child
Kindergarten and Preschool

Saif Khatatbeh
18110004

Marks

Student's Final Marks for 2019/2020 Academic Year

Subject	First month exam/25	Second month exams/25	Third month exam/25	Final month exam/100	Final Marks/100
Math	25	25	25	100	100
Arabic	25	25	25	100	100
Religion	25	25	25	100	100
Science	25	25	25	100	100
Art	25	25	25	100	100
Drama	25	25	25	100	100
Sports	25	25	25	100	100
French	25	25	25	100	100

Semester Summary

Exam Period	Full Mark	Average Marks of the Student
First Month Exams	25	25
Second Month Exams	25	25
Third Month Exams	25	25
Final Month Exams	100	100
Semester	100	100

Ministry of Education
{Copywrits and date of the website}

Marks

Ministry Of Education | Parents

Monitor Your Child
Kindergarten and Preschool

Saif Khatatbeh
18110004

Behavior

Behavior in school for year 2019/2020:

Teacher\Average	Comments	Mark\S
[Teacher1]	But I must explain to you how all...	5
[Teacher2]	But I must explain to you how all...	1
[Teacher3]	But I must explain to you how all...	3
[Teacher4]	But I must explain to you how all...	1
[Teacher5]	But I must explain to you how all...	1
[Teacher6]	But I must explain to you how all...	4
Average		2.5

If the mark is less the 3/5, then you are close of getting suspended from class.
If the average is less than 2/5, then you are close of getting suspended from the school

Ministry of Education
{Copywrits and date of the website}

Behavior:

For the behavior page, it will show the child behavior along with the mark and average.

*note: the design of the behavior page is the same for the other behavior pages in Middle school and High school

Ministry Of Education | Parents

 Monitor Your Child
Kindergarten and Preschool

 Saif Khatatbeh
18110004

Marks
Behavior
Schedule
Teacher's Feedback
Logout

Day	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth
Sunday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Monday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Tuesday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Wednesday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Thursday	Math	Science	Art	Drama	Arabic	Religion	Sports	Sports
Friday								
Saturday								

Official Schedule for year 2019/2020

Legend:
 Important Days
 Holiday

 Ministry of Education
{Copywrits and date of the website}

Schedule

Ministry Of Education | Parents

 Monitor Your Child
Kindergarten and Preschool

 Saif Khatatbeh
18110004

Marks
Behavior
Schedule
Teacher's Feedback
Logout

Teacher	Feedback
{Teacher}	But I must explain to you how all this mistaken idea of denouncing pleasure and prai...
{Teacher}	But I must explain to you how all this mistaken idea of denouncing pleasure and prai...
{Teacher}	But I must explain to you how all this mistaken idea of denouncing pleasure and prai...
{Teacher}	But I must explain to you how all this mistaken idea of denouncing pleasure and prai...
{Teacher}	But I must explain to you how all this mistaken idea of denouncing pleasure and prai...
{Teacher}	But I must explain to you how all this mistaken idea of denouncing pleasure and prai...

Teacher's Feedback for year 2019/2020:

you can only get the feedback of {Name} at the end of the year

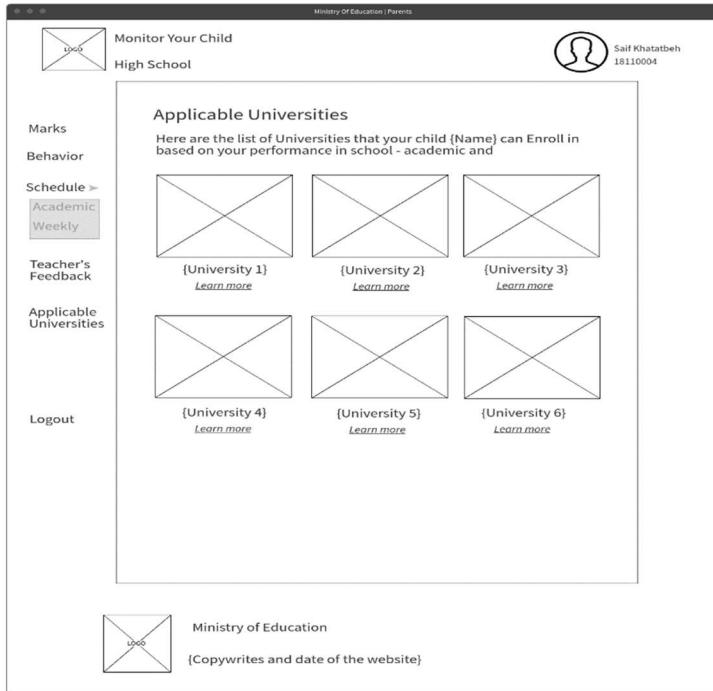
 Ministry of Education
{Copywrits and date of the website}

Teacher's Feedback:

For the teacher's feedback page, it will have a schedule that shows the teacher and the feedback that he has given to the child. Along with a note that shows that the feedback is only given at the end of the year.

*Note: Going from here I'm going to show only the different pages (High school's Universities Applied) since all the pages have the exact same design.

C. High School:

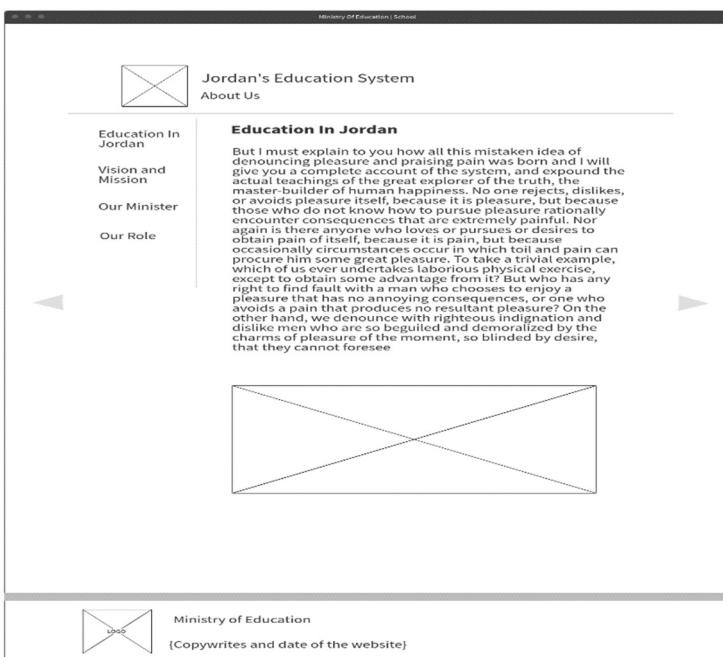


The screenshot shows a web interface for monitoring a child's performance. The top navigation bar includes 'Monitor Your Child', 'High School', and a user profile for 'Saif Khatatbeh' (18110004). On the left, a sidebar lists 'Marks', 'Behavior', 'Schedule > Academic Weekly', 'Teacher's Feedback', 'Applicable Universities', and 'Logout'. The main content area is titled 'Applicable Universities' and displays six university logos, each with a name and a 'Learn more' link: {University 1} through {University 6}. At the bottom, there is a logo for 'Ministry of Education' and a placeholder for 'Copywrited and date of the website'.

Applicable Universities:

This page will show all the universities that are applicable for their child. The design of this page will show the picture of each university along with its name and a learn more section which will take the parent to the university's website.

4. About Us:

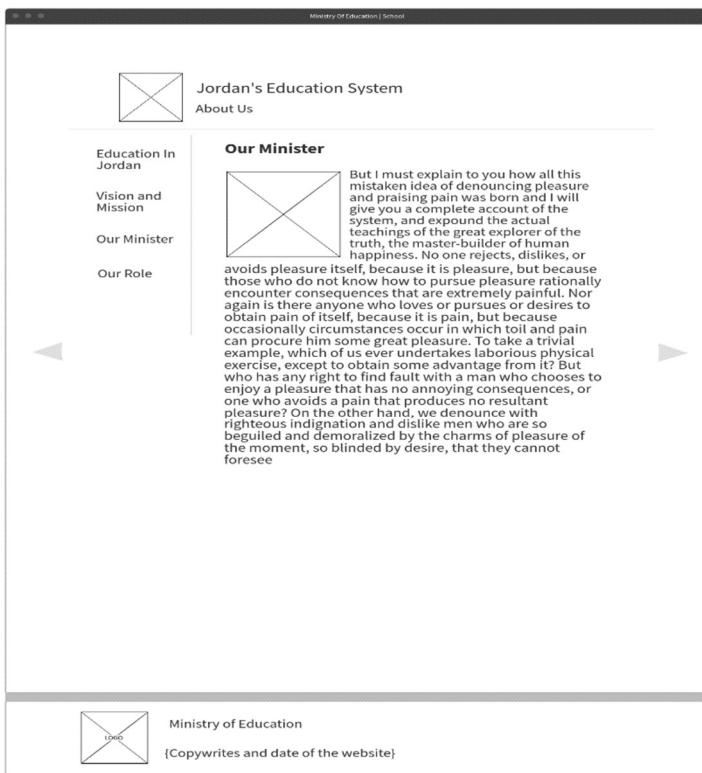


The screenshot shows a web interface for 'Jordan's Education System' under the 'About Us' tab. The top navigation bar includes a logo and the text 'Jordan's Education System' and 'About Us'. On the left, a sidebar lists 'Education In Jordan', 'Vision and Mission', 'Our Minister', and 'Our Role'. The main content area is titled 'Education In Jordan' and contains a large block of text from Cicero's 'On Moral Ends' discussing the nature of pleasure and pain. Below the text is a large redacted area. At the bottom, there is a logo for 'Ministry of Education' and a placeholder for 'Copywrited and date of the website'.

A. Education in Jordan:

This page will explain the education in Jordan. The design of this page is that it will have heading, paragraph, and a picture. Along with arrows for moving between each tab.

Ministry Of Education | School

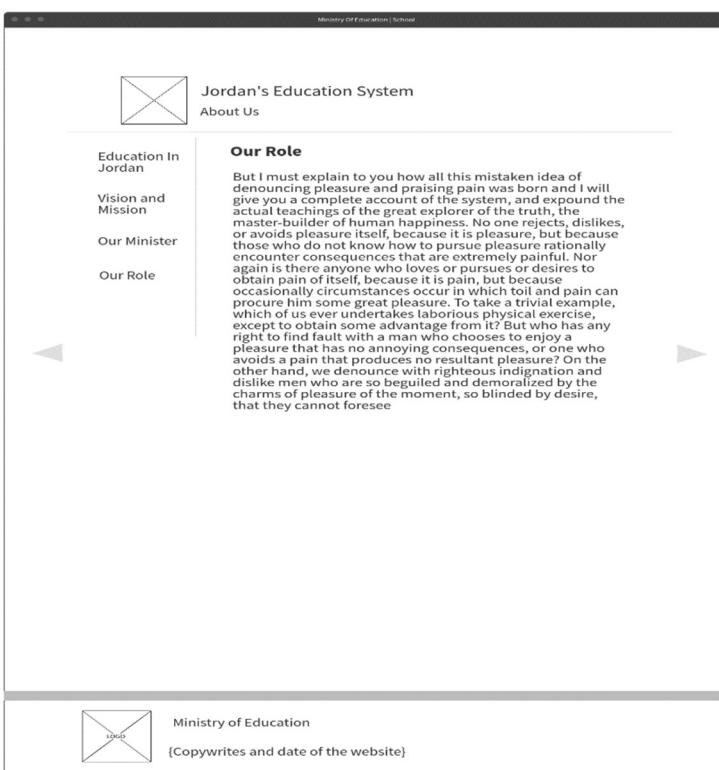


The screenshot shows a web page titled "Jordan's Education System" with a sub-section "About Us". On the left, there is a sidebar with links: "Education In Jordan", "Vision and Mission", "Our Minister", and "Our Role". The main content area has a heading "Our Minister" with a small square icon containing a diagonal cross. Below the heading is a large paragraph of text. At the bottom of the page, there is a logo and the text "Ministry of Education" and "(Copywrited and date of the website)".

B. Our Minister:

This page will talk about the minister of the ministry. The design of this page is that it will have a heading, a picture of the minister, and explanation about him. Along with arrows mentioned earlier in the education in Jordan tab.

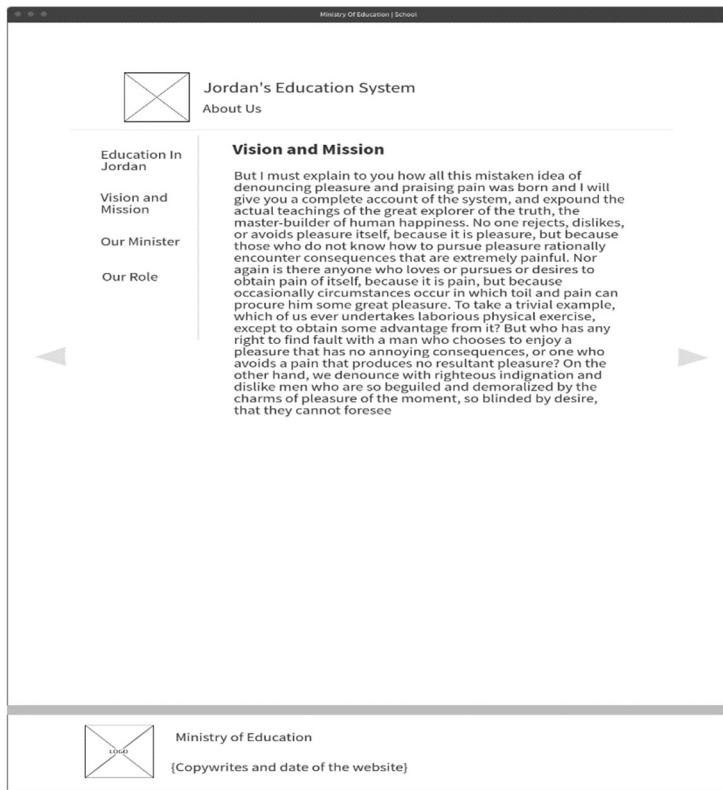
Ministry Of Education | School



The screenshot shows a web page titled "Jordan's Education System" with a sub-section "About Us". On the left, there is a sidebar with links: "Education In Jordan", "Vision and Mission", "Our Minister", and "Our Role". The main content area has a heading "Our Role" with a small square icon containing a diagonal cross. Below the heading is a large paragraph of text. At the bottom of the page, there is a logo and the text "Ministry of Education" and "(Copywrited and date of the website)".

C. Our Role:

This page will talk about the role of the ministry. It will have a basic design with just the heading and a paragraph explaining the role. Along with arrows.



The wireframe shows a navigation bar at the top with links: 'Ministry Of Education | School', 'Jordan's Education System', and 'About Us'. Below this is a sidebar with links: 'Education In Jordan', 'Vision and Mission', 'Our Minister', and 'Our Role'. The main content area has a heading 'Vision and Mission' followed by a large block of text. At the bottom of the page is a footer with the 'moe' logo and the text 'Ministry of Education {Copywrited and date of the website}'.

Vision and Mission

But I must explain to you how all this mistaken idea of denouncing pleasure and praising pain was born and I will give you a complete account of the system, and expound the actual teachings of the great explorer of the truth, the master-builder of human happiness. No one rejects, dislikes, or avoids pleasure itself, because it is pleasure, but because those who do not know how to pursue pleasure rationally encounter consequences that are extremely painful. Nor again is there anyone who loves or pursues or desires to obtain pain of itself, because it is pain, but because occasionally circumstances occur in which toil and pain can produce some great pleasure. To take a trivial example, which of us ever partakes in various physical exercise, except to obtain some advantage from it? But who has any right to find fault with a man who chooses to enjoy a pleasure that has no annoying consequences, or one who avoids a pain that produces no resultant pleasure? On the other hand, we denounce with righteous indignation and dislike men who are so beguiled and demoralized by the charms of pleasure of the moment; so blinded by desire, that they cannot foresee

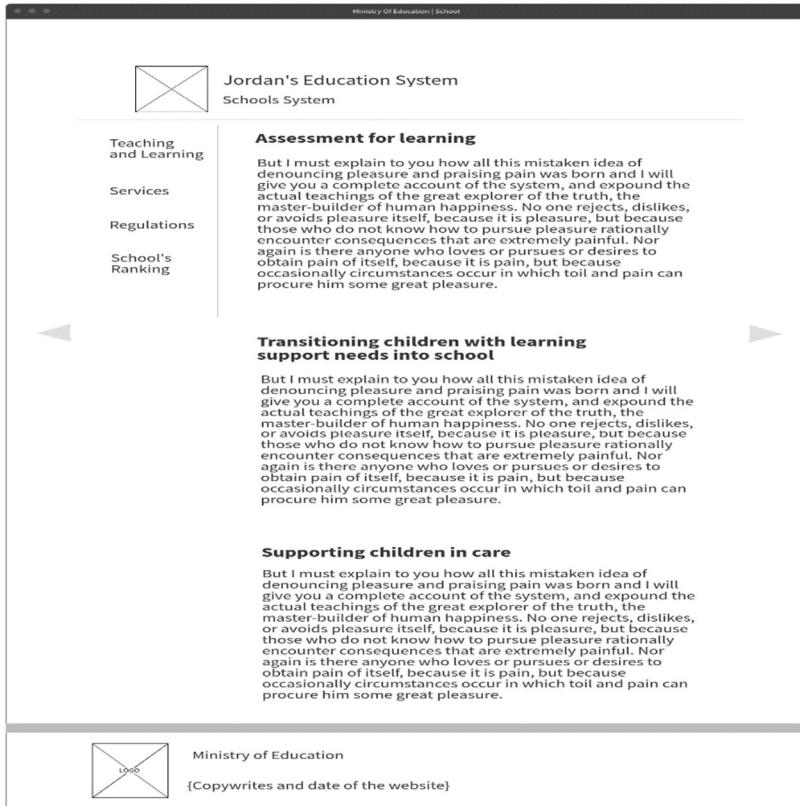
Ministry of Education
{Copywrited and date of the website}

D. Vision and Mission:

This page will talk about the vision and mission of the Ministry. The design is very simple with a heading and a paragraph explaining the vision and mission. Along with the arrows.

The next section is going to be for the school's system, where there will be just one wireframe since the design of each page is the same.

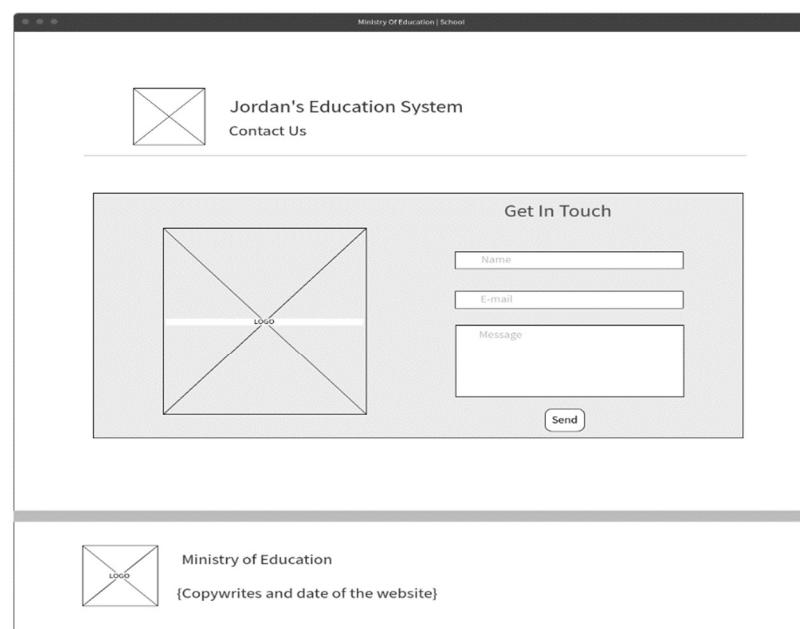
5. School System:



The screenshot shows a web page titled "Jordan's Education System Schools System". On the left, there is a sidebar with tabs: "Teaching and Learning" (selected), "Services", "Regulations", and "School's Ranking". The main content area has three sections: "Assessment for learning", "Transitioning children with learning support needs into school", and "Supporting children in care". Each section contains a large block of text. Arrows on the left and right sides of the content area indicate that users can navigate between the tabs.

Teaching and Learning:

The design of the page will have 3 heading each with a paragraph for explanation. Along with arrows to move between each tab.



The screenshot shows a web page titled "Jordan's Education System Contact Us". It features a logo on the left, a large input box for "Get In Touch" with fields for Name, E-mail, and Message, and a "Send" button. At the bottom, there is a "Ministry of Education" logo and copyright information.

6. Contact Us:

This page will have design of a box that shows the logo of the university, a heading, and input bars for the user to details for contacting the ministry, along with a send button to data

D. Mockups:

Mockups are the opposite of wireframes; they have colors and pictures to better represent the website. Here are the mockups for the website:

Since there are a lot of pages that similar in design, I decided to show all the different ones, which are:

Home Page

School: High School

Parents: Overview, High School- teachers Feedback and Behavior, login

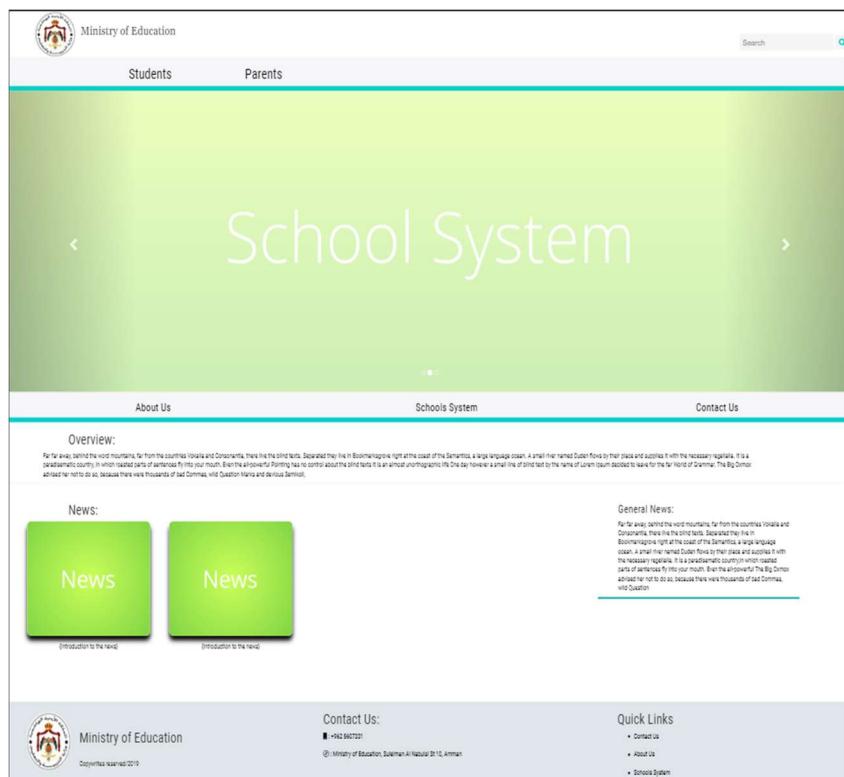
About Us

School System: Teaching and Learning.

Contact Us.

If you want to check on the other Mockups, please refer to the GitHub link at the cover page.

1. Home Page:



Like the design in the wireframe with the navigation bar and the slideshow and everything. The colors are inspired from Scotland's website. The design of the home page feels modern with the colors and everything, the slideshow will change pictures every 5 seconds.

2. School:

High School:



Jordan Education System

Student Portal Return home

Middle School High School

Student ID: Ex: 18110004

Password:

login

Return home

Ministry of Education

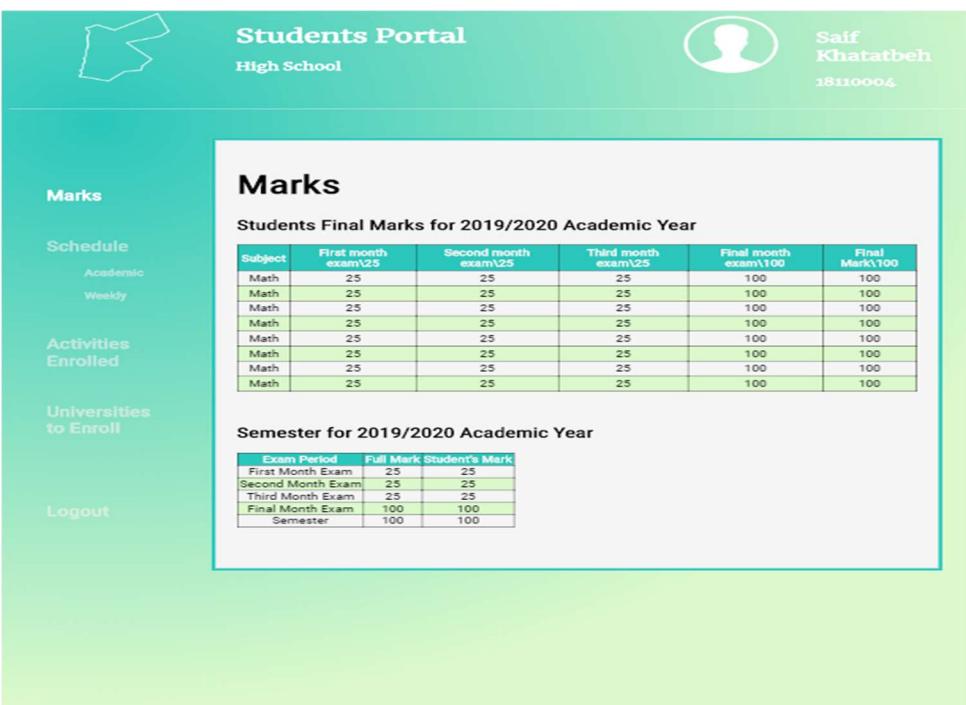
Copywrits Reserved/2019

1. Login:

A very similar design to the wireframe, the one change that is added is the Return Home button at the top right corner.

*Note the design of each mockup is like that in the wireframe, but with different colors.

*Note: each page has now the return home Button.



Students Portal

High School

Marks

Schedule

Academic

Weekly

Activities Enrolled

Universities to Enroll

Logout

Marks

Students Final Marks for 2019/2020 Academic Year

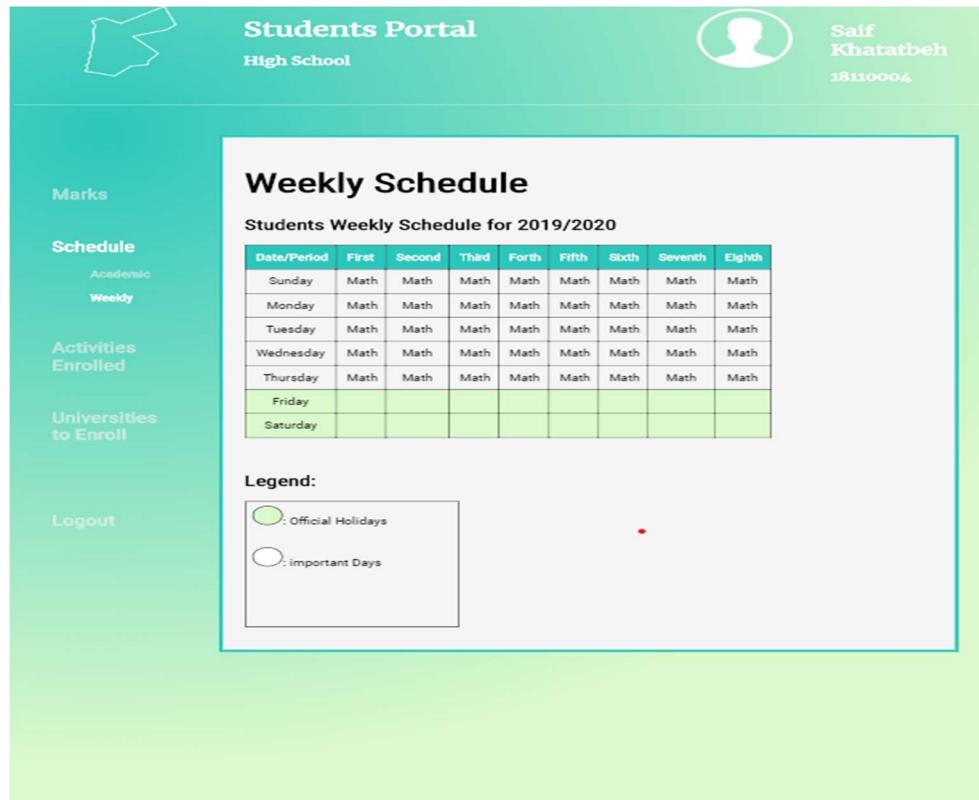
Subject	First month exam\25	Second month exam\25	Third month exam\25	Final month exam\100	Final Mark\100
Math	25	25	25	100	100
Math	25	25	25	100	100
Math	25	25	25	100	100
Math	25	25	25	100	100
Math	25	25	25	100	100
Math	25	25	25	100	100
Math	25	25	25	100	100
Math	25	25	25	100	100
Math	25	25	25	100	100

Semester for 2019/2020 Academic Year

Exam Period	Full Mark	Student's Mark
First Month Exam	25	25
Second Month Exam	25	25
Third Month Exam	25	25
Final Month Exam	100	100
Semester	100	100

Ministry of Education

2. Marks



Students Portal
High School

Saif Khatatbeh
18110004

Marks

Schedule

Academic
Weekly

Activities Enrolled

Universities to Enroll

Logout

Weekly Schedule

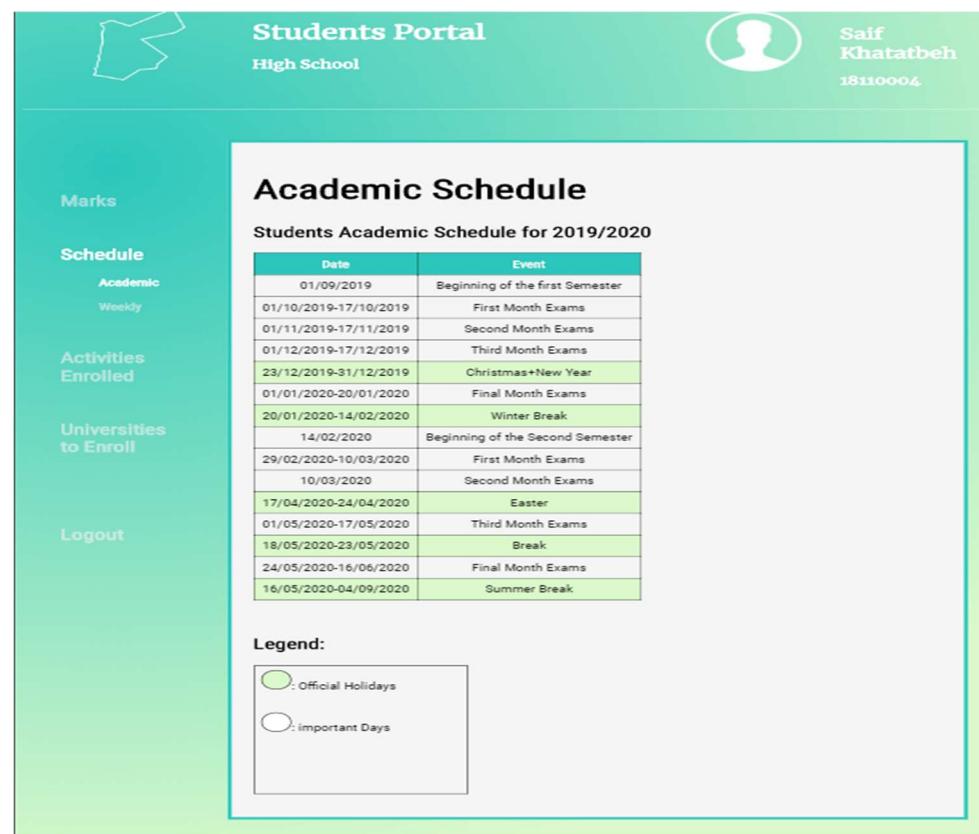
Students Weekly Schedule for 2019/2020

Date/Period	First	Second	Third	Forth	Fifth	Sixth	Seventh	Eighth
Sunday	Math	Math	Math	Math	Math	Math	Math	Math
Monday	Math	Math	Math	Math	Math	Math	Math	Math
Tuesday	Math	Math	Math	Math	Math	Math	Math	Math
Wednesday	Math	Math	Math	Math	Math	Math	Math	Math
Thursday	Math	Math	Math	Math	Math	Math	Math	Math
Friday								
Saturday								

Legend:

- (Green circle): official Holidays
- (Yellow circle): important Days

3. Weekly Schedule:



Students Portal
High School

Saif Khatatbeh
18110004

Marks

Schedule

Academic
Weekly

Activities Enrolled

Universities to Enroll

Logout

Academic Schedule

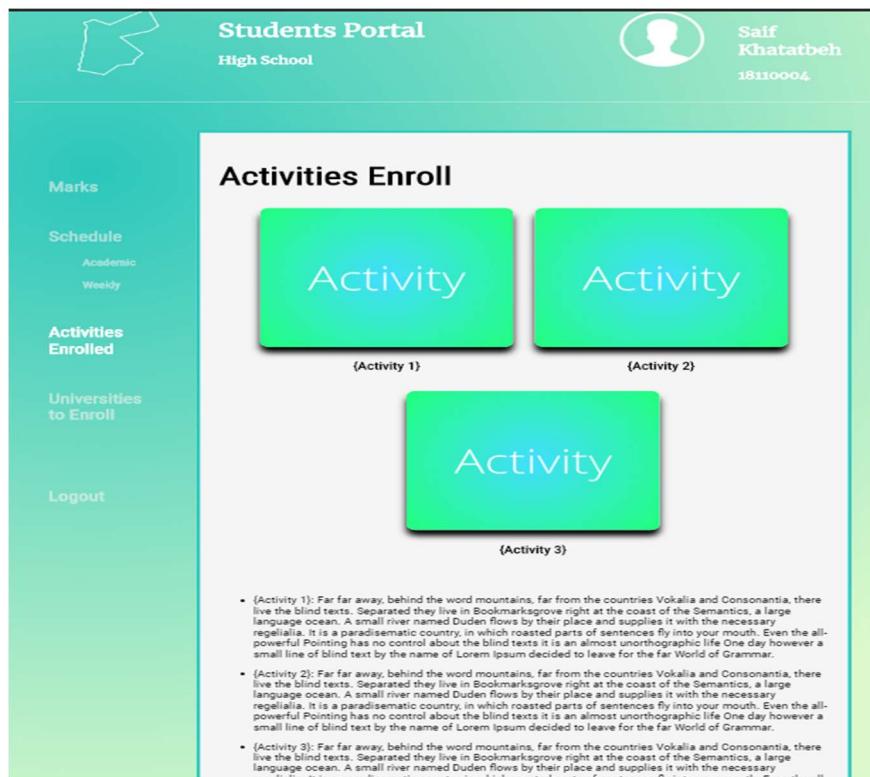
Students Academic Schedule for 2019/2020

Date	Event
01/09/2019	Beginning of the first Semester
01/10/2019-17/10/2019	First Month Exams
01/11/2019-17/11/2019	Second Month Exams
01/12/2019-17/12/2019	Third Month Exams
23/12/2019-31/12/2019	Christmas+New Year
01/01/2020-20/01/2020	Final Month Exams
20/01/2020-14/02/2020	Winter Break
14/02/2020	Beginning of the Second Semester
29/02/2020-10/03/2020	First Month Exams
10/03/2020	Second Month Exams
17/04/2020-24/04/2020	Easter
01/05/2020-17/05/2020	Third Month Exams
18/05/2020-23/05/2020	Break
24/05/2020-16/06/2020	Final Month Exams
16/05/2020-04/09/2020	Summer Break

Legend:

- (Green circle): Official Holidays
- (Yellow circle): Important Days

4. Academic Schedule



Students Portal
High School

Saif Khatatbeh
18110004

Marks

Schedule
Academic Weekly

Activities Enrolled

Universities to Enroll

Logout

Activities Enroll

Activity (Activity 1) Activity (Activity 2)

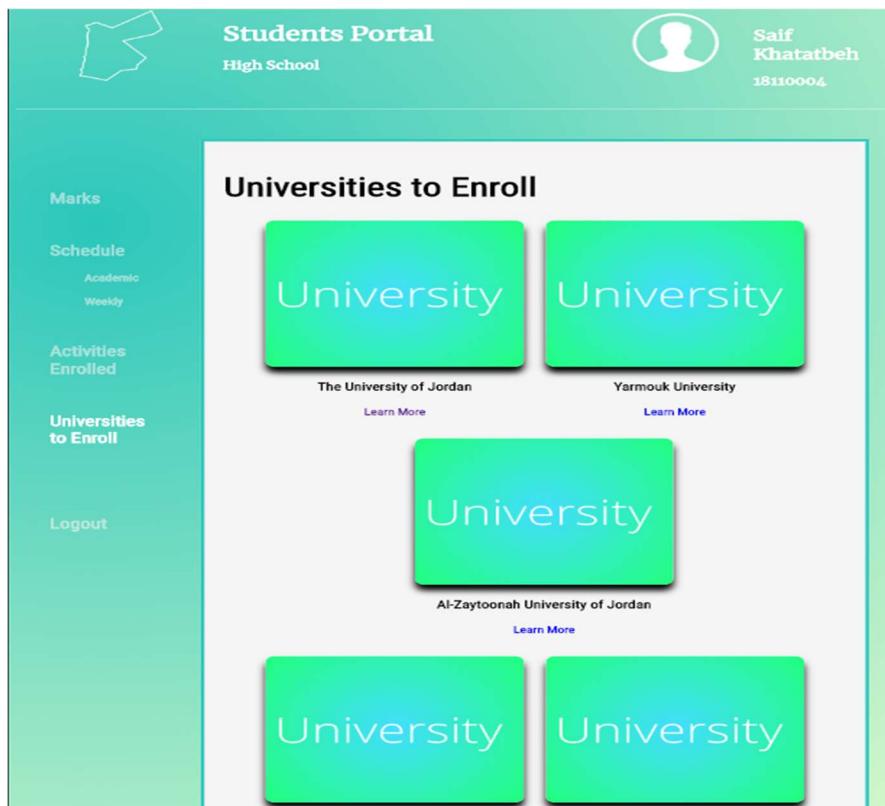
Activity (Activity 3)

(Activity 1): Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean. A small river named Duden flows by their place and supplies it with the necessary regelialia. It is a paradisematic country, in which roasted parts of sentences fly into your mouth. Even the all-powerful Pointing has no control about the blind texts it is an almost unorthographic life One day however a small line of blind text by the name of Lorem Ipsum decided to leave for the far World of Grammar.

(Activity 2): Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean. A small river named Duden flows by their place and supplies it with the necessary regelialia. It is a paradisematic country, in which roasted parts of sentences fly into your mouth. Even the all-powerful Pointing has no control about the blind texts it is an almost unorthographic life One day however a small line of blind text by the name of Lorem Ipsum decided to leave for the far World of Grammar.

(Activity 3): Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean. A small river named Duden flows by their place and supplies it with the necessary regelialia. It is a paradisematic country, in which roasted parts of sentences fly into your mouth. Even the all-powerful Pointing has no control about the blind texts it is an almost unorthographic life One day however a small line of blind text by the name of Lorem Ipsum decided to leave for the far World of Grammar.

5. Activities Enrolled



Students Portal
High School

Saif Khatatbeh
18110004

Marks

Schedule
Academic Weekly

Activities Enrolled

Universities to Enroll

Logout

Universities to Enroll

University The University of Jordan Learn More

University Yarmouk University Learn More

University Al-Zaytoonah University of Jordan Learn More

University University

University University

6. Universities to Enroll

Parents:

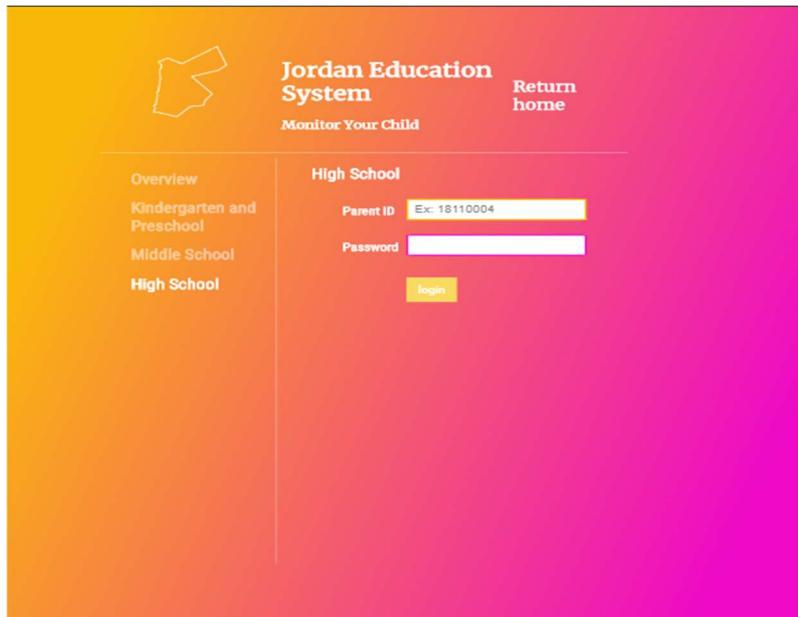


The screenshot shows the homepage of the Jordan Education System for parents. It features a yellow-to-red gradient background. At the top left is a map of Jordan. In the center, the text "Jordan Education System" is displayed above "Return home". Below that is a link "Monitor Your Child". On the left sidebar, there are links for "Overview", "Kindergarten and Preschool", "Middle School", and "High School". The main content area contains a large block of text from Cicero's "De Officiis" discussing pleasure and pain.



1. Overview

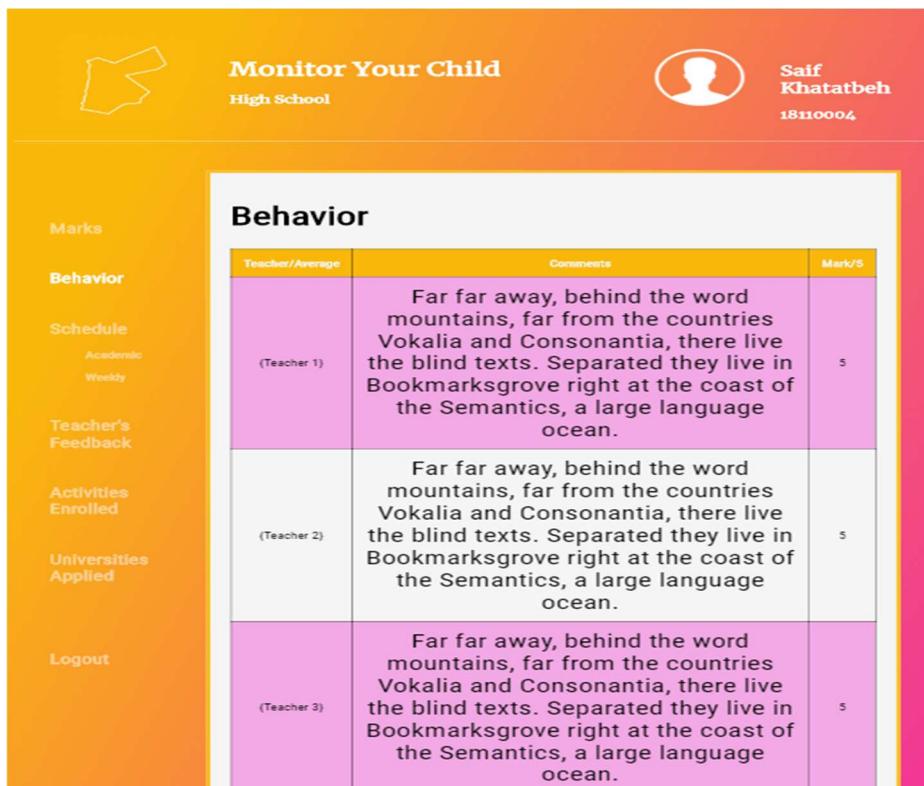
2. High-School:



This screenshot shows the "High School" section of the Jordan Education System for parents. The layout is identical to the main page, with a yellow-to-red gradient background, a map of Jordan at the top left, and the "Jordan Education System" header. The sidebar on the left includes "Overview", "Kindergarten and Preschool", "Middle School", and "High School". The main content area is a login form with fields for "Parent ID" (example: 18110004) and "Password", and a "Login" button. To the right of the login form, the word "Login" is written in green.



Login



Monitor Your Child
High School

Saif Khatatbeh
18110004

Marks

Behavior

Schedule
Academic Weekly

Teacher's Feedback

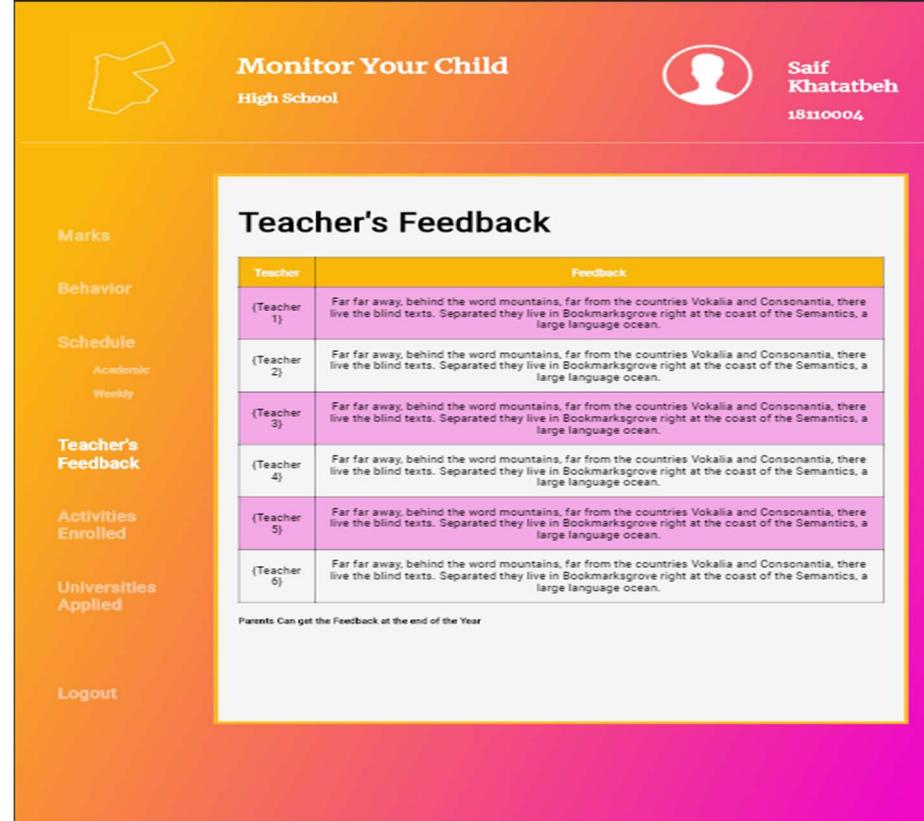
Activities Enrolled

Universities Applied

Logout

Teacher/Average	Comments	Mark/S
(Teacher 1)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.	5
(Teacher 2)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.	5
(Teacher 3)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.	5

Behavior:



Monitor Your Child
High School

Saif Khatatbeh
18110004

Marks

Behavior

Schedule
Academic Weekly

Teacher's Feedback

Activities Enrolled

Universities Applied

Logout

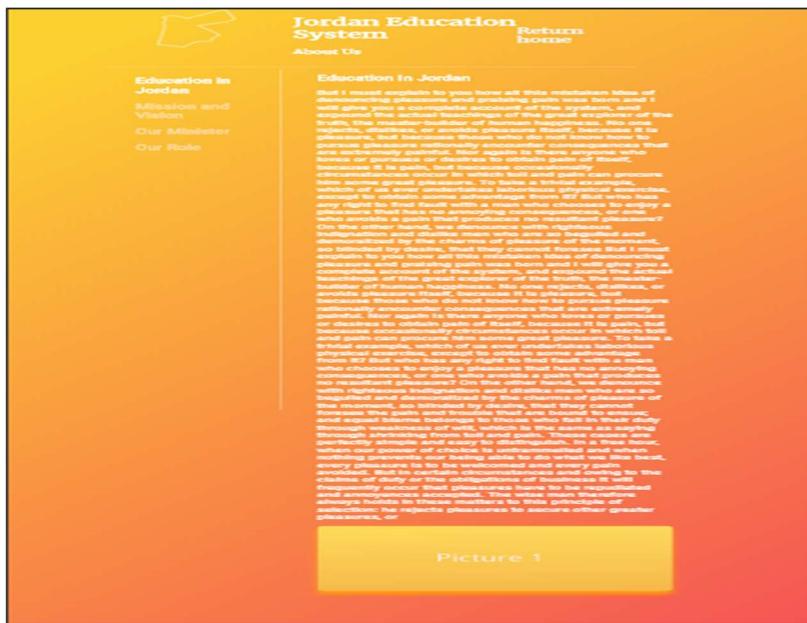
Teacher	Feedback
(Teacher 1)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.
(Teacher 2)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.
(Teacher 3)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.
(Teacher 4)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.
(Teacher 5)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.
(Teacher 6)	Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

Parents Can get the Feedback at the end of the Year

Teacher's Feedback

About Us:

Education in Jordan:



The screenshot shows a yellow-themed page with a left sidebar containing links for 'Education in Jordan', 'Mission and Vision', 'Our Minister', and 'Our Role'. The main content area is titled 'Education in Jordan' and contains a large block of Arabic text. A yellow button at the bottom right of the content area is labeled 'Picture 1'.

Ministry of Education
Copywrits Reserved/2019

Mission and Vision:



The screenshot shows a red-themed page with a left sidebar containing links for 'Education in Jordan', 'Mission and Vision', 'Our Minister', and 'Our Role'. The main content area is titled 'Mission and Vision' and contains a large block of Arabic text. A white button at the bottom right of the content area is labeled 'Picture 1'.

Ministry of Education
Copywrits Reserved/2019

Our Minister:



The screenshot shows the 'Our Minister' page of the Jordan Education System website. The page has a yellow header with the university logo and navigation links for 'Education in Jordan', 'Mission and Vision', 'Our Minister', and 'Our Role'. The main content area features a yellow box titled 'Picture 1' containing a block of Latin text from Cicero's 'On Duties'. Below this is a large block of Arabic text explaining the minister's role in balancing pleasure and pain. At the bottom, there is a watermark for 'Ministry of Education' and 'Copywrites Reserved/2019'.

Our Role:



The screenshot shows the 'Our Role' page of the Jordan Education System website. It has a similar layout to the 'Our Minister' page, with a yellow header and navigation links for 'Education in Jordan', 'Mission and Vision', 'Our Minister', and 'Our Role'. The main content area contains a large block of Arabic text detailing the minister's role in managing pleasure and pain. At the bottom, there is a watermark for 'Ministry of Education' and 'Copywrites Reserved/2019'.

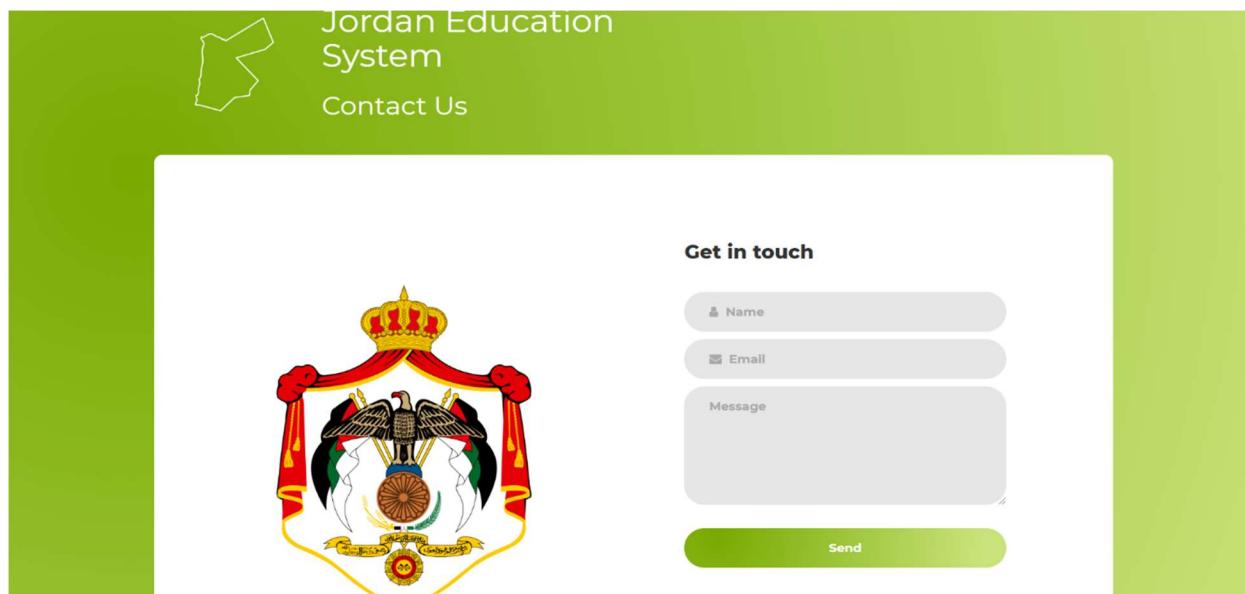
School's System:

Teaching and Learning:



The screenshot shows a green-themed web page for the "Jordan Education System". At the top left is a map of Jordan. To its right, the text "Jordan Education System" is displayed above a "Return home" link. Below these are three menu items: "Teaching and Learning", "Services", and "Schools Ranking". The main content area features a large block of text under the heading "Assesment for Learning". This text discusses the nature of pleasure and pain, referencing the philosopher Epicurus. It states that pleasure is the goal of life and pain is to be avoided. It mentions that while most people seek pleasure, some do not know how to pursue it rationally. The text also notes that there are circumstances where pain can lead to pleasure, such as through exercise or work.

Contact Us:



The screenshot shows a green-themed web page for the "Jordan Education System". At the top left is a map of Jordan. To its right, the text "Jordan Education System" is displayed above a "Contact Us" link. The main content area features a large image of the Royal Coat of Arms of Jordan, which includes a double-headed eagle perched on a shield, surrounded by a golden crown and red and white ribbons. To the right of the coat of arms is a form titled "Get in touch" with fields for "Name", "Email", and "Message", followed by a "Send" button.

E. User and Client Requirements:

Here I'm going to list all the user and client requirements that will be implemented in the website:

1. User Requirements:

1. The website must be responsive and mobile friendly, meaning it should work on all devices regardless the screen size.
2. The website mustn't be finicky and loose when opened from different browsers
3. Content should be realistic and meaningful
4. the color combination must be attractive for the user.

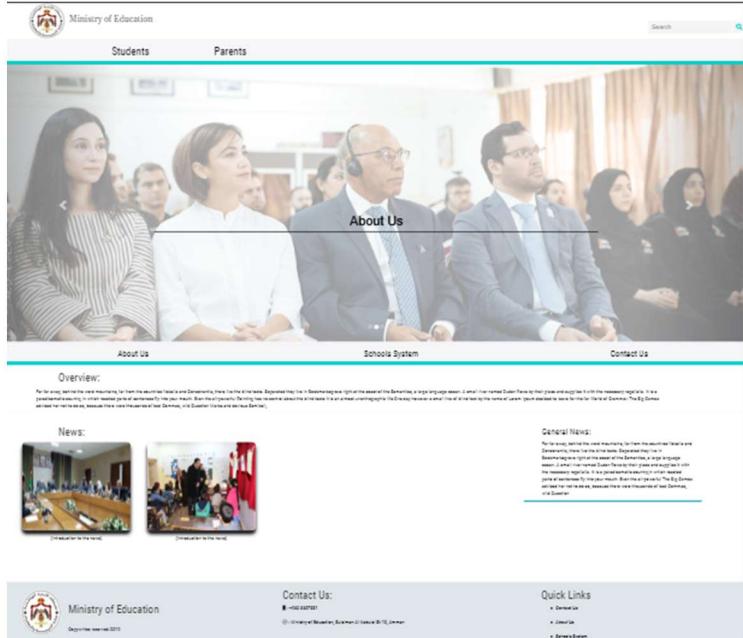
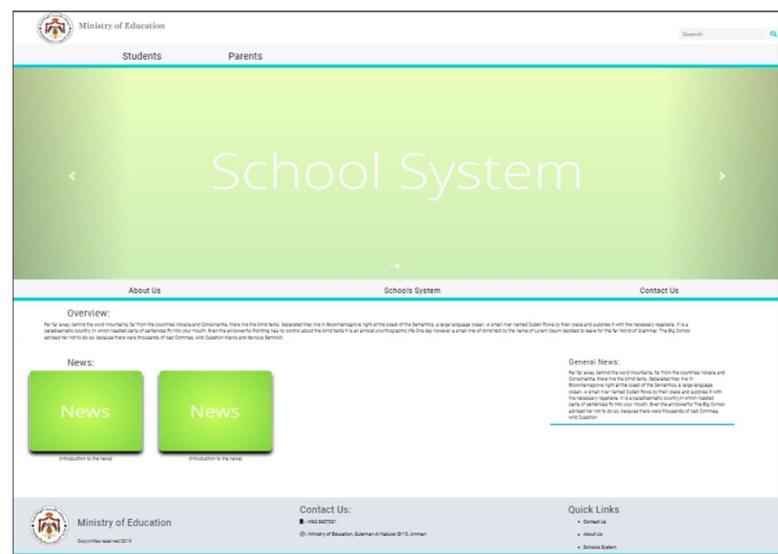
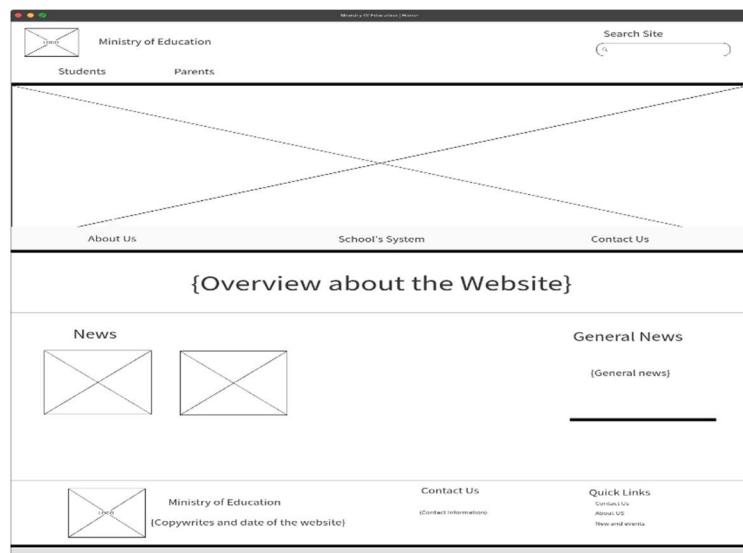
2. Client Requirements:

1. The website must have good UX and UI.
2. The backend should full work to send emails in the contact us page
3. In the site, there should be an error message when the user enters the wrong password or ID in all the portals.
4. The website must have a contact page so that if the user has any complaints or needs help, he could use the contact page.
5. The website should include 5 portals in total, 3 for the parent's page and 2 for the student's page.
6. The website must provide modern services to the user

VI. Comparison between the website and the design document:

After using all the tools and techniques, the final website has been built. It is exactly like the design of the mockups, the only changes there was is with the pictures (screenshots of the website are in Appendix 1). In this section, I'll be comparing some of the differences between the wireframes, mockups, and final design. I'm going to use the home page for the comparison, because the only difference between the mockups, wireframes and final design is the addition of high-quality pictures and realistic content.

1. Home Page:



As I mentioned, the design the home page for each design is the same, the only difference is the addition of high quality pictures, and using some CSS techniques such as box shadow and opacity, and finally some photoshop to make the images sharper, I was able to increase the quality of the pictures on the final design. Looking at the final design and the wireframe, there hasn't much changed, just the font and the style of the search bar, along with the captions inserted to the slide show on the final design.

VII. Critical Evaluation:

The design of the website has covered all aspects of user and client requirements, from having high quality pictures to having 5 portals to having a contact page that sends email. The website has been tested by a couple of users, some are expert developers in the field of website developments, and some are the average user. Their feedback on the design helped a lot in completing the website, one of the users said that the website needed more pictures, so it doesn't become boring and the pictures that were already there needs to be higher quality. Those feedbacks helped the website to have a good UI and UX. As for the responsiveness of the website, the website is responsive, it has been tested to open on mobile phones to check the responsiveness and all the contents have fitted themselves to fit the screen.

The development process took a lot of time, from shortlisting other websites to gain inspiration for the layout and design, to creating a sitemap to see how the website will move from page to page, then creating wireframes to sketch how the website is going to look like, then creating mockups to see how the website will look like colored and with pictures, this is expected since the website I created is custom built. Other than time, the development process was challenging, there were some bugs that were very hard to fix and some harder to find. But, having an expert evaluate the website helped me a lot and in someway eased the development process.

One technical challenge I had is creating the contact page and implementing a backend code using PHP to make it send emails. The thing was that every thing was working fine, from the design of the page, to the JavaScript validation, and the PHP code was debugged a lot of times using visual studio IDE, but it still didn't work, it didn't go to the PHP file. I figured I linked the two pages wrongly, but the link was right. It was fixed when I tried researching the problem, it turns out that the SMTP server on my local host XAMPP hadn't been configured, and so it couldn't send emails. Then after configuring the SMTP server properly, emails were sent from the contact page successfully.

VIII. Test Plan and Quality Assurance:

After planning and creating the website, the website needs to be tested to check if there are no bugs in the website. So, in this section, I'll be writing the test plan that I created and followed, to ensure that the website is running at its best performance.

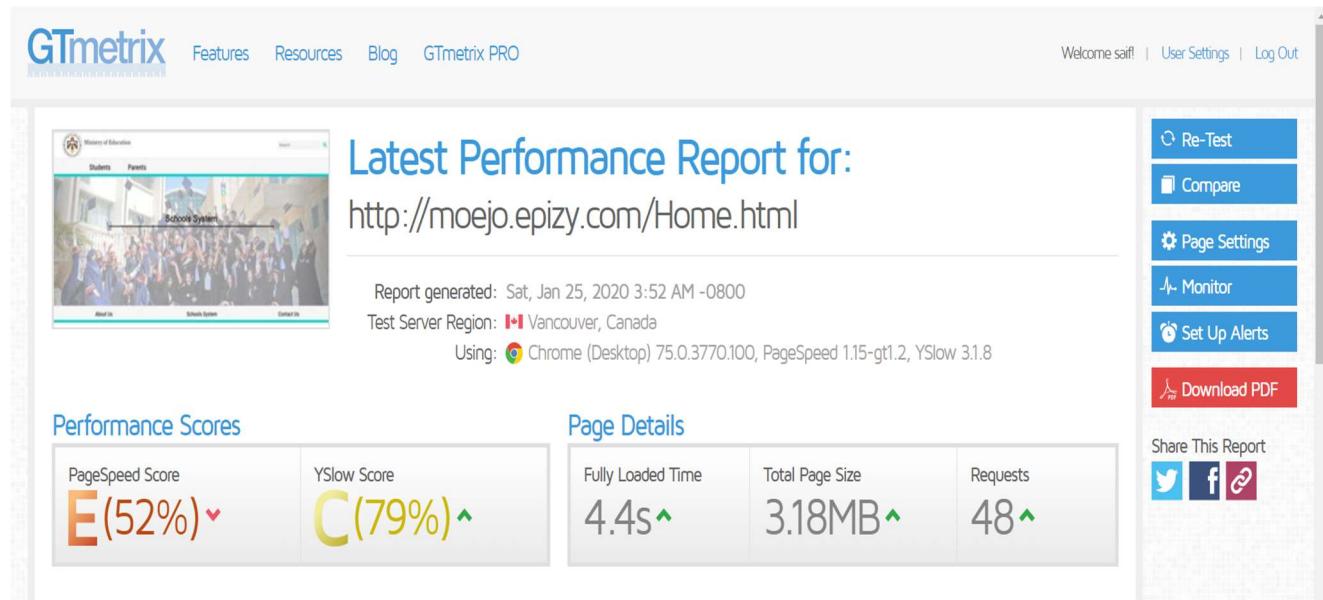
1. Test Plan:

Test	Expected Result	Actual Result
Opening the Home Page	It is expected that the Home Page opens successfully with no delay and all the contents aligned as they should	Success, the Home Page opened as expected
Opening the website in a small screen (Mobile Phone)	It is expected that the website will fit itself to the screen, and interfering with the layout	Success, the website did open in a small screen with no interruptions
Entering wrong credentials on the High School portal in the students' page	It is expected to see an error message informing the user he/she entered the wrong credentials	Success, an error message did show up.
Entering the right credentials on the High School portal in the students' page	It is expected that the user will move to his/her dashboard.	Success, the user did move to his/her dashboard
Sending an email through the contact us page	It is expected that an email will be sent to me.	Success, an email was received
Keeping all the inputs empty on the login page then clicking send	It is expected that an error would occur	Success, an error did occur
Clicking the about us tab from the quick links in the footer	It is expected that the user will move to the About Us page	Success, the user did move to the About Us page
Clicking the return home button on the school's system page.	It is expected that the user will return to the Home Page	Success, the user did return to the Home Page.

2. Website functionality and performance:

There are many characteristics for having a function website, one of which is that the website is mobile friendly. A mobile friendly website means that it works on all mobile phones, along with being responsive. Since one of the tests was opening the website on a mobile phone, and which showed success, this means that the website is functional.

As for the performance, I tried using online performance testing tools to test the performance of the website. The results showed that the website doesn't have the best performance with scoring 52% on the Page Speed test and 79% on the YSlow test. Here is a screenshot for the results of the test:



The screenshot shows the GTmetrix performance report for the URL <http://moejo.epizy.com/Home.html>. The report indicates a PageSpeed Score of E (52%) and a YSlow Score of C (79%). The Fully Loaded Time is 4.4s, Total Page Size is 3.18MB, and Requests are 48. The report was generated on Saturday, January 25, 2020, at 3:52 AM -0800, from a test server in Vancouver, Canada, using Chrome (Desktop) version 75.0.3770.100. The report also includes a sidebar with options like Re-Test, Compare, Page Settings, Monitor, Set Up Alerts, and Download PDF, as well as social sharing links for Twitter, Facebook, and Email.

Performance Scores		Page Details		
PageSpeed Score	E (52%)	YSlow Score	C (79%)	
	▼		▲	
Fully Loaded Time	4.4s	▲	Total Page Size	3.18MB
				▲
Requests	48	▲		

3. Quality Assurance:

“Quality Assurance (QA) is defined as an activity to ensure that an organization is providing the best possible product or service to customers. QA focuses on improving the processes to deliver Quality Products to the customer. (guru99, n.d.)” QA has a defined cycle called PDCA cycle or Deming cycle, “The Plan-do-check-act cycle (PDCA) is a four-step model for carrying out change. Just as a circle has no end, the PDCA cycle should be repeated and again for continuous improvement. The PDCA cycle is considered a project planning tool” (asq, 2015). The phases of this cycle are: (guru99, n.d.)



Plan: Organization should plan and establish the process related objectives and determine the processes that are required to deliver a high-Quality product.

Do: Development and testing of Processes and "do" changes in the processes

Check: Monitoring of processes, modify the processes, and check whether it meets the predetermined objectives

Act: Implement actions that are necessary to achieve improvements in the processes

This plan was implemented in the development process of creating the website, here are the PDCA plan according to my website:

Plan: the objectives that were planned where in the form of phases. Phase 1 was shortlisting other Ministry of education sites to know what layout to carry on. Phase 2 was creating wireframes to sketch the website and to know how it would look like. Phase 3 was creating the mockups to better represent the website with colors and pictures, phase 4 was creation of the website.

Do: while creating the website, each page was tested to see whether there were bugs in the website, and if there were bugs, necessary changes have been implemented.

Check: after the website been completed, the website was tested to see if it met all the user and client requirements, in which it met them.

Act: there were some actions that were implemented in the process, that improved the development process, such as letting the users give their opinions along each phase, which helped a lot in the making of the website.

4. Evaluation of the Test Plan plus Potential Improvements:

The test plans they have been used to test the website was good, but not great; because it highlights the areas of success about the website, and I couldn't find any areas of error on the website. As for the results of the test plan, they were as expected; because as I mentioned in the QA testing, the website was tested and improved during each page in the development process, so the results must meet the expected which are a success.

Now for the potential improvements, no website is perfect, there must be some areas of improvements to increase the performance of the website. And based on the results of the performance test, there are much to improve. One improvement, which was recommended by the performance testing site was to serve scaled images, not resizing them using html and CSS, here is a screenshot of that recommendation:

RECOMMENDATION	GRADE	TYPE	PRIORITY
▲ Serve scaled images	F (0)	▼ IMAGES	HIGH

The following images are resized in HTML or CSS. Serving scaled images could save 898.3KiB (85% reduction). [What's this mean?](#)

- https://oxfordschools.edu.jo/sites/default/files/styles/slider/public/filtered_image.jpg?itok=hkuvFfhU is resized in HTML or CSS from 2800x1040 to 1366x507. Serving a scaled image could save 356.3KiB (76% reduction).
- <http://www.moe.gov.jo/sites/default/files/img-20200114-wa0002.jpg> is resized in HTML or CSS from 1280x853 to 300x250. Serving a scaled image could save 300.4KiB (93% reduction).
- <http://www.moe.gov.jo/sites/default/files/img-20191216-wa0003.jpg> is resized in HTML or CSS from 1280x853 to 300x250. Serving a scaled image could save 241.6KiB (93% reduction).

Another potential improvement is to add a database to the website, which would help in minimizing the security breaches, since the portals were made by JavaScript with no database.

Bibliography

asq, 2015. *WHAT IS THE PLAN-DO-CHECK-ACT (PDCA) CYCLE?*. [Online]
Available at: <https://asq.org/quality-resources/pdca-cycle>
[Accessed 25 January 2020].

Bettinger, T., n.d. *STRUCTURE AND ORGANIZATION OF THE DOMAIN NAME SYSTEM.* [Online]
Available at: https://global.oup.com/booksites/content/0199278253/part_1
[Accessed 26 January 2020].

businessdictionary, n.d. *short listing*. [Online]
Available at: <http://www.businessdictionary.com/definition/short-listing.html>
[Accessed 12 January 2020].

Chris, A., 2016. *What Is Search Engine Optimization (SEO) And Why Is It Important.* [Online]
Available at: <https://www.reliablesoft.net/what-is-search-engine-optimization-and-why-is-it-important/>
[Accessed 27 January 2020].

Christensson, 2011. *Web Server Definition*. [Online]
Available at: https://techterms.com/definition/web_server
[Accessed 27 January 2020].

cloudflare, n.d. *What Is DNS? | How DNS Works*. [Online]
Available at: <https://www.cloudflare.com/learning/dns/what-is-dns/>
[Accessed 26 January 2020].

contributors, M., 2019. *CSS3*. [Online]
Available at: <https://developer.mozilla.org/en-US/docs/Archive/CSS3>
[Accessed 19 January 2020].

contributors, M., 2019. *HTML5*. [Online]
Available at: <https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5>
[Accessed 19 January 2020].

contributors, M., 2019. *JavaScript*. [Online]
Available at: <https://developer.mozilla.org/en-US/docs/Web/JavaScript>
[Accessed 22 January 2020].

crozdesk, n.d. *What is MockFlow?*. [Online]
Available at: <https://crozdesk.com/it/mockups-prototyping-software/mockflow>
[Accessed 22 January 2020].

DNS, M., 2009. *What Is Authoritative Name Server?*. [Online]
Available at: <https://www.dnsknowledge.com/whatis/authoritative-name-server/>
[Accessed 26 January 2020].

DNS, M., 2009. *What Is TLD Name Server?*. [Online]
Available at: <https://www.dnsknowledge.com/whatis/tld-name-server/>
[Accessed 26 January 2020].

driesvints, 2019. *laravel*. [Online]
Available at: <https://github.com/laravel/laravel>
[Accessed 22 January 2020].

FERGUSON, N., 2020. *What's The Difference Between Frontend And Backend Web Development?*. [Online]
Available at: <https://careerfoundry.com/en/blog/web-development/whats-the-difference-between-frontend-and-backend/>
[Accessed 22 January 2020].

glossarytech, n.d. *Front-end Technologies*. [Online]
Available at: https://glossarytech.com/terms/front_end-technologies
[Accessed 22 January 2020].

guru99, n.d. *What is Quality Assurance(QA)? Process, Methods, Examples*. [Online]
Available at: <https://www.guru99.com/all-about-quality-assurance.html>
[Accessed 25 January 2020].

Hope, C., 2019. *DNS resolver*. [Online]
Available at: <https://www.computerhope.com/jargon/d/dns-resolver.htm>
[Accessed 26 January 2020].

Knowhow, 2019. *What is a root server? Definition and mechanics*. [Online]
Available at: <https://www.ionos.com/digitalguide/server/know-how/what-is-a-root-server-definition-and-background/>
[Accessed 26 January 2020].

Microsoft, 2019. *microsoft/vscode*. [Online]
Available at: <https://github.com/microsoft/vscode>
[Accessed 22 January 2020].

- palaksinghal9903, n.d. *Frontend vs Backend*. [Online]
Available at: <https://www.geeksforgeeks.org/frontend-vs-backend/>
[Accessed 22 January 2020].
- Rouse, M., 2019. *Web server*. [Online]
Available at: <https://whatis.techtarget.com/definition/Web-server>
[Accessed 26 January 2020].
- Smith, J., 2019. *What is Photoshop*. [Online]
Available at: <https://www.agitraining.com/adobe/photoshop/classes/what-is-photoshop>
[Accessed 22 January 2020].
- techopedia, n.d. *Communication Protocol*. [Online]
Available at: <https://www.techopedia.com/definition/25705/communication-protocol>
[Accessed 26 January 2020].
- techopedia, n.d. *Host Operating System*. [Online]
Available at: <https://www.techopedia.com/definition/15763/host-operating-system>
[Accessed 26 January 2020].
- techterms, 2018. *www.techterms.com*. [Online]
Available at: https://techterms.com/definition/web_server
[Accessed 2018].

Appendix 1