

Chapter 1

Introduction

1.1 Introduction:-

MySchool is a website that offers solutions to save schools application filling time and to stop wasting money on transportation from school to school. The user can fill an online application generated by the school and the school just have to give those who applied a time for an interview.

1.2 Project Overview:-

This overview will cover how the business and technical process of Myschool will go. Over the recent years there have been a problem with school advising that keeps increasing every year due to multiple factors such as fuel prices rising. The take a car or public transportation trip is a very exhausting solution when it comes to checking and looking for schools for your children. The best choice is never clear and that's why My School is here to solve all that.

1.3 Project Background:-

School application applying is a big headache for both parents and schools as the parent find him/herself asking around and looking on the internet for schools based on geographical location and fees only, then the parent go visit every school to confirm the information and to fill the application, so the parents and the child get interviewed to get accepted or rejected in the school.

1.4 Project Scope:-

This project targets schools in Egypt. We are targeting two distinct type of schools, first is schools that wish to use the full advising features that my school offers and the second type is schools that wish to use my school as advertisement only. The project shall be completed within 2 months.

1.5 Project Purpose:-

The purpose of this project is to create free and fast online interface to fill applications and provide all the correct information of interest to the users for applying or transferring to a school. This will occur by the help of our innovative school application generator.

1.6 Project Problems:-

To understand how our project idea came to be it is of great importance to know how it was formed and that was by observing a particular problem within society that most people tend to ignore once it's time have passed, but it do occur every year and it is always a headache.

The Problem:-

Finding and applying for the suitable school for your child can be problematic and uneasy especially if the family moved into a new state as the parent find him/herself asking around and looking on the internet for schools based on geographical location and fees only, then the parent go visit every school to learn about the fees and to fill the application, so the parents and the child get interviewed to get accepted or rejected in the school.

1.6.1 Existing System:-

There are three types of systems that currently exist:-

1– Traditional system:-

This system is the normal scenario and worst case scenario at the same time as the parent use a car or any kind of transportation keeps going around even asking the neighbors about schools wasting time and money right and left and in the end not making the best choice.

Disadvantages of this system:-

- ♦ Waste of time while looking for schools.
- ♦ Waste of money on transportation and other expenses.
- ♦ Not getting the best choice.
- ♦ Choosing school is mainly focused on the tuition fees.
- ♦ Not being able to see schools as most of them are not properly advertised.
- ♦ Searching for schools on the internet is not reliable nor accurate.
- ♦ The crowd generated at schools is a big headache as well.

2– School's advising system:-

This system is rarely found and most likely they are found in higher class schools if they are known as advertising is still an issue here. The system is dedicated only the school itself and not to other schools. You can do your online advising using the interface dedicated for the school.

Disadvantages of this system:-

- ♦ Not every school have an online advising system.
- ♦ Advertisement for this type of system is lacking.
- ♦ The competitive advantages of having this system is not recognized due to the lack of advertisement.

3– All schools search system:-

This type of systems is of good use for something and can help with estimations regarding the information such as fees and all that, but accuracy is an issue here as schools don't update the information themselves, so this type of system is very good at serving as an advertisement portal for schools.

Disadvantages of this system:-

- ♦ Information about schools are not periodically updated.
- ♦ Information about schools can be inaccurate and misleading.
- ♦ There is no standard way of showing information of different schools.
- ♦ The scope is too big as most of these systems don't target a specific region but major areas such as world wide.
- ♦ Some schools are still not advertised on these systems.

The Need:-

The traditional application filling system has a lot of issues from long lines to understaffing to fulfill the huge demand and some schools tried to solve this by resorting to making their own advising systems, but not everyone knows about these schools and not everyone have these systems and here comes Myschool with the solution for all these issues.

1.6.2 Proposed System:-

Opportunity:-

The traditional approach of filling a school application can be enhanced by computerizing the process, so instead of the heavily demanding working hours at schools for both parents and schools we are a more effortless way.

The solution:-

My school web application offer the solution to long lines and time consuming application filling by computerized approach of the application filling designed to suit the needs for all the schools using it's key element the application generator that allow for a school to create it's own unique application, in addition to other advertising elements to boost schools' image and help the users to choose the best school.

My school's features:-

- ♦ Filtered search for schools as a list or on map.
- ♦ Explore schools on the map.
- ♦ Present school profile with accurate and enough information to help decide on what to do.
- ♦ The ability to apply for more than one school fast.
- ♦ The ability to manage appointments for interviews between schools and parents.
- ♦ Providing of statistics for schools that could help them with strategic decisions.
- ♦ School is able to choose between using the advising feature or to just advertise itself.
- ♦ The ability to know that your son or daughter got accepted or not in a school.

1.7 Project objectives and benefits :-

1.7.1 Objectives:-

- ♦ Increase number of subscribed schools by 70% over next 2 years.
- ♦ Increase market share by 80% over next 3 years.
- ♦ Reach breakeven point within 2 years.
- ♦ Maintain 40% of school base within first year of operation.
- ♦ Create market demand for my school by forcing schools to not accept traditional advising as an alternative.

1.7.2 Benefits:-

Benefits facilitated to the user:-

- ♦ Provide accurate information of interest like fees and geographic locations of each school registered.
- ♦ Reduce time and effort for finding the suitable school for your child.
- ♦ Apply for school(s) from anywhere.
- ♦ Browse schools using a map.
- ♦ Save money spent on transportation.

Benefits facilitated to the school:-

- ♦ Reduce application filling and interview organizing headache for schools.
- ♦ Accept advising requests from anywhere at anytime of the day.
- ♦ Advertise schools based on location, fees, interests and other things.
- ♦ Provide the ability to create sub accounts for the school to fit their operation's hierarchy.
- ♦ Provide changeable school application via school application generator.
- ♦ Provide statistical charts and information to help make important decisions for the school.

1.8 Project Resources:-

This point covers the resources that involve money investments regarding physical and intangible resources needed.

Hardware Resources:-

5 Laptops:-

Resource Specs	Cost
CPU: Intel core 2 duo or equivalent GPU: Intel graphics with 1GB VRAM RAM: 4GB HDD: 500GB Display ports: VGA Internet access: Cable and Wi-Fi	10,000L.E

Software Resources:-

Adobe Photoshop:-

Resource Specs	Cost
An image editing software developed and manufactured by Adobe Systems Inc. Photoshop is considered one of the leaders in photo editing software. The software allows users to manipulate, crop, resize, and correct color on digital photos.	US\$19.99/mo.

Adobe Illustrator:-

Resource Specs	Cost
Adobe Illustrator is a vector graphics editor developed and marketed by Adobe Inc. Originally designed for the Apple Macintosh, development of Adobe Illustrator began in 1985. Along with Creative Cloud, Illustrator CC was released.	US\$19.99/mo.

Microsoft Visio:-

Resource Specs	Cost
Easily create diagrams, organization charts, maps, workflows and home or office plans using a rich set of shapes and templates. A familiar Office experience allows you to perform common flow charts with ease. Add comments and share diagrams easily with anyone across your organization.	US\$280.00

Human Resources:-

1 Web designer:-

Resource Specs	Cost
Person able to use tools such as HTML5, CSS3, JavaScript and bootstrap to create the design for a website as fast as possible. 3-4 years experience	US\$14/hr.

2 System analyst:-

Resource Specs	Cost
A systems analyst is an information technology (IT) professional who specializes in analyzing, designing and implementing information systems. ... Systems analyst is a person who uses analysis and design techniques to solve business problems using information technology. 2-3 years experience	10,000L.E/mo.

2 Web Developers:-

Resource Specs	Cost
A web developer is a programmer who specializes in, or is specifically engaged in, the development of World Wide Web applications, or applications that are run over HTTP : CSS OR HTML from a web server to a web browser. 2-4 years experience	8000L.E/mo.

1.9 Project capabilities:-

Capabilities offered to School administrator:-

- ♦ Profile system to edit school profile
- ♦ Ability to add more than one school program
- ♦ Editing of level information for each level in a school program
- ♦ Dynamic application generation for each school.
- ♦ Generate statistical information to help with decisions
- ♦ Allows schools to make appointments for each student

Capabilities offered to System administrator:-

- ♦ Responding to school signup requests
- ♦ Ability to shutdown school accounts
- ♦ Generate statistical information to help with decisions

Capabilities offered to User:-

- ♦ Search system for schools by list or map
- ♦ Browse different school levels in different programs
- ♦ Application filling system to apply for schools
- ♦ Allow user to view his/her profile to keep track of each request's progress

1.10 System Boundaries:-

School Support:-

My school support schools only in Egypt so far. Any entity that is not a school is immediately rejected and even if it's not rejected at first will be banned once discovered otherwise.

Unsupported schools:-

My school is targeting profit, so government related schools that don't take fees and don't seem able to raise a fund won't be able to register on my school.

1.11 Methodology:-

Structured systems analysis and design Methodology:-

SSADM divides an application development project into modules, stages, steps, and tasks, and provides a framework for describing projects in a fashion suited to managing the project. SSADM's objectives are to:

- ♦ Improve project management & control
- ♦ Make more effective use of experienced and inexperienced development staff
- ♦ Develop better quality systems
- ♦ Make projects resilient to the loss of staff
- ♦ Enable projects to be supported by computer-based tools such as computer-aided software engineering systems
- ♦ Establish a framework for good communications between participants in a project

Object-oriented programming (OOP):-

The concept of a data class makes it possible to define subclasses of data objects that share some or all of the main class characteristics. Called inheritance, this property of OOP forces a more thorough data analysis, reduces development time, and ensures more accurate coding.

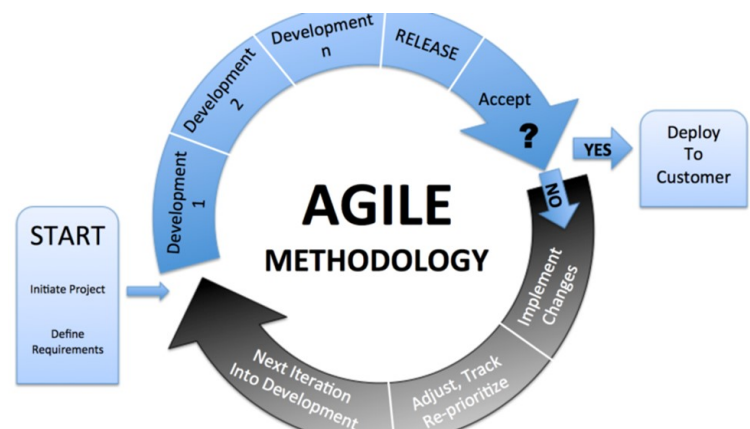
Since a class defines only the data it needs to be concerned with, when an instance of that class (an object) is run, the code will not be able to accidentally access other program data. This characteristic of data hiding provides greater system security and avoids unintended data corruption.

The definition of a class is reusable not only by the program for which it is initially created but also by other object-oriented programs (and, for this reason, can be more easily distributed for use in networks).

The concept of data classes allows a programmer to create any new data type that is not already defined in the language itself.

Agile Development:-

Agile is a process that helps teams provide quick and unpredictable responses to the feedback they receive on their project. It creates opportunities to assess a project's direction during the development cycle. Teams assess the project in regular meetings called sprints or iterations. The management process is very beneficial for software companies because it helps them analyze and improve their product throughout its development. This enables companies to produce a highly valuable product so they stay competitive in the market.



The Benefits of Agile Software Development:-

Transparency

The agile approach actively involves the client throughout the entire project including the iteration planning, review sessions, and new feature builds in the software. Clients, however, must understand that during the transparency of the project, they are seeing a work in progress and not the final product.

Early and Predictable Delivery

Sprints are held on a fixed schedule of 1 to 4 weeks duration. By using this time-boxed method, predictability is high as new features can be delivered to the stakeholders quickly and frequently. It also allows the team to beta test or release the software sooner if it has sufficient business value.

Predictable Costs and Schedule

Because the Sprints are on a fixed schedule, the costs are limited and predictable, and based on the amount of work done. By combining the estimated costs before each Sprint, the client will better understand the approximate costs of each feature. This offers more improved decision-making opportunities when prioritizing the features or adding iterations.

Allows for Change

While the focus should be to deliver the agreed subset of the products features, Agile processes create an opportunity to continually reprioritize and refine the product backlog. These changes can be added to the next iteration so the new changes can be introduced within a few weeks.

1.12 Project Tools & Installation:-

Front-End Tools

HTML5

Hypertext Markup Language revision 5 (HTML5) is markup language for the structure and presentation of World Wide Web contents. HTML5 supports the traditional HTML and XHTML-style syntax and other new features in its markup, New APIs, XHTML and error handling.

HTML 5 includes detailed processing models to encourage more interoperable implementations; it extends, improves and rationalizes the markup available for documents, and introduces markup and application programming interfaces (APIs) for complex web applications. For the same reasons, HTML 5 is also a candidate for cross-platform mobile applications, because it includes features designed with low-powered devices in mind.



CSS3

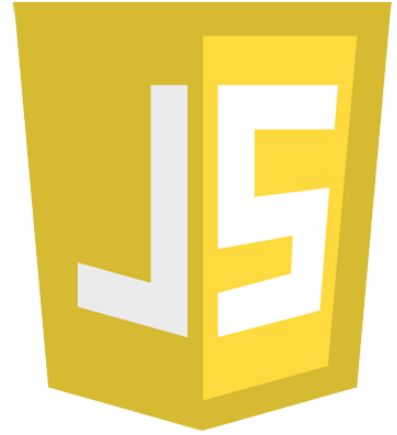
CSS3 is the latest evolution of the Cascading Style Sheets language and aims at extending CSS2.1. It brings a lot of long-awaited novelties, like rounded corners, shadows, gradients, transitions or animations, as well as new layouts like multi-columns, flexible box or grid layouts. Experimental parts 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.



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.

Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it, and major web browsers have a dedicated JavaScript engine to execute it.



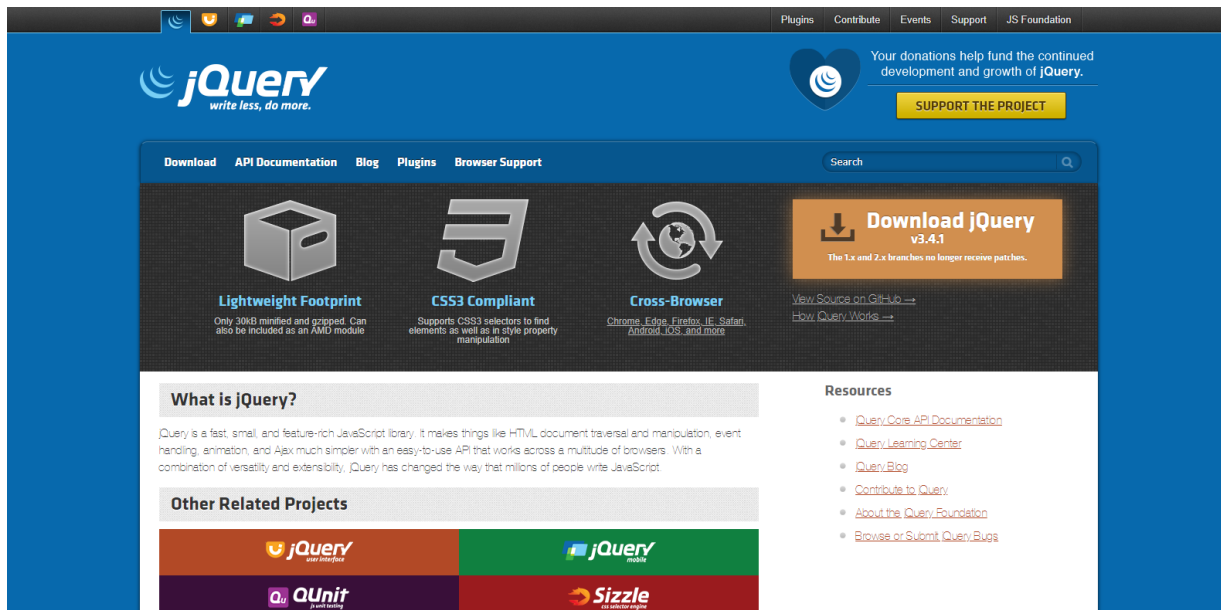
JQuery

jQuery is a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, as well as event handling, CSS animation, and Ajax. It is free, open-source software using the permissive MIT License. Web analysis indicates that it is the most widely deployed JavaScript library by a large margin.



JQuery Installation:-

Step 1: Download JQuery from official website



Step 2: Import JQuery into website

```
<!--Link to jquery js-->
<script src="jquery/jquery-3.3.1.js"></script>
<!--Link to bootstrap 4 js-->
<script src="bootstrap/js/bootstrap.min.js"></script>
<!--Link to my own js should be placed here-->
<script src="js/common.js"></script>
<script src="ajax.js"></script>
```

Bootstrap 4

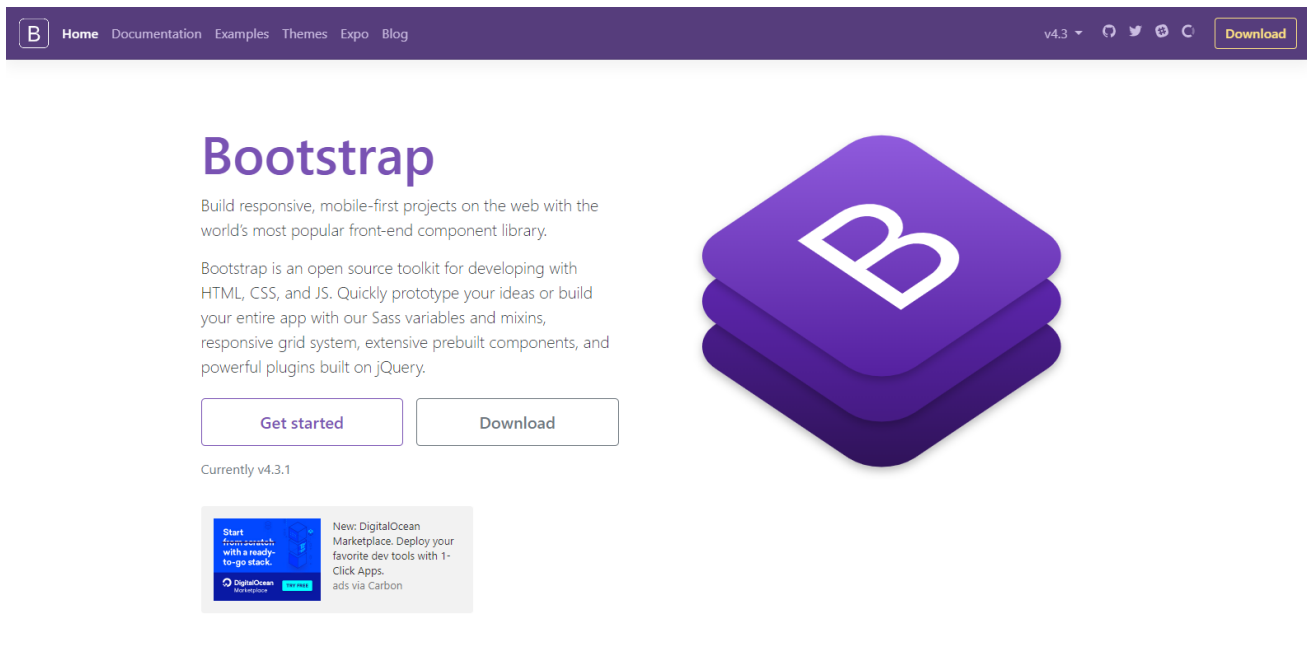
Bootstrap 4 is the newest version of Bootstrap, which is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites.

Bootstrap is a web framework that focuses on simplifying the development of informative web pages (as opposed to web apps). The primary purpose of adding it to a web project is to apply Bootstrap's choices of color, size, font and layout to that project. As such, the primary factor is whether the developers in charge find those choices to their liking. Once added to a project, Bootstrap provides basic style definitions for all HTML elements.



Bootstrap 4 Installation:-

Step 1: Download bootstrap 4 from official website



Step 2: Import bootstrap 4 CSS files into website

```
<!--Link to bootstrap 4 css-->
<link rel="stylesheet" type="text/css" href="bootstrap/css/bootstrap.min.css" />
```

Step 3: Import bootstrap 4 JS files into website

```
<!--Link to jquery js-->
<script src="jquery/jquery-3.3.1.js"></script>
<!--Link to bootstrap 4 js-->
<script src="bootstrap/js/bootstrap.min.js"></script>
<!--Link to my own js should be placed here-->
<script src="js/common.js"></script>
<script src="ajax.js"></script>
```

Back-End Tools

XAMPP

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.

XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes.

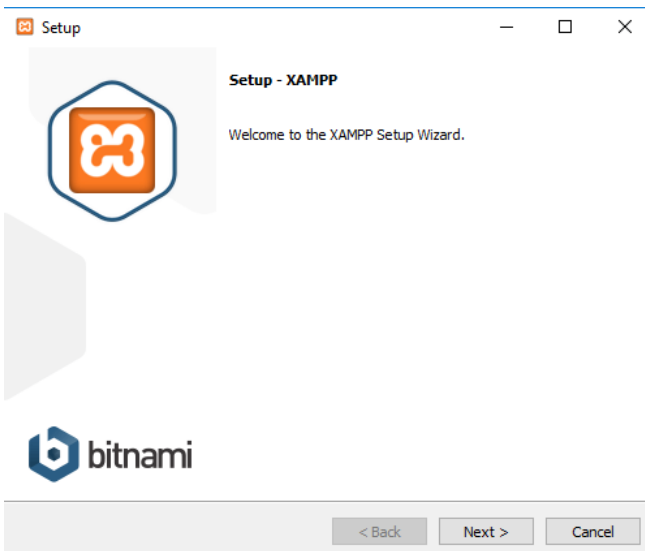


XAMPP Installation:-

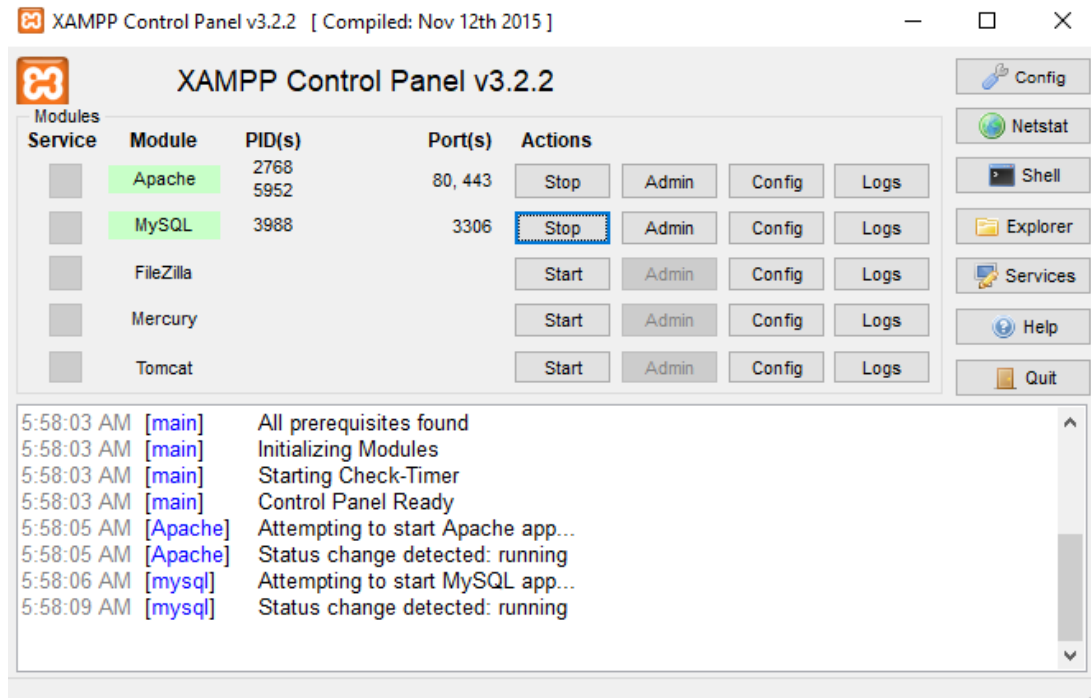
Step 1: Download XAMPP from official website



Step 2: Install XAMPP



Step 3: Start apache and other services needed



PHP

PHP is a script language and interpreter that is freely available and used primarily on Linux Web servers. PHP, originally derived from Personal Home Page Tools, now stands for PHP: Hypertext Preprocessor, which the PHP FAQ describes as a "recursive acronym."

PHP executes on the server, while a comparable alternative, JavaScript, executes on the client. PHP is an alternative to Microsoft's Active Server Page (ASP) technology. As with ASP, the PHP script is embedded within a Web page along with its HTML. Before the page is sent to a user that has requested it, the Web server calls PHP to interpret and perform the operations called for in the PHP script.



PHP Version 7

During 2014 and 2015, a new major PHP version was developed, which was numbered PHP 7. The numbering of this version involved some debate.

PHP 7 involves the following changes:-

- ♦ Many fatal- or recoverable-level legacy PHP error mechanisms were replaced with modern object-oriented exceptions
- ♦ The syntax for variable dereferencing was reworked to be internally more consistent and complete, allowing the use of the operators `->`, `[]`, `()`, `{}`, and `::`, with arbitrary meaningful left-side expressions
- ♦ Support for legacy PHP 4-style constructor methods was deprecated
- ♦ The behavior of the `foreach` statement was changed to be more predictable
- ♦ Constructors for the few classes built-in to PHP which returned null upon failure were changed to throw an exception instead, for consistency
- ♦ Several unmaintained or deprecated server application programming interfaces (SAPIs) and extensions were removed from the PHP core, most notably the legacy `mysql` extension
- ♦ The behavior of the `list()` operator was changed to remove support for strings

- ◆ Support was removed for legacy ASP-style delimiters `<%` and `%>` and `<script language="php"> ... </script>`
- ◆ An oversight allowing a switch statement to have multiple default clauses was fixed
- ◆ Support for hexadecimal number support in some implicit conversions from strings to number types was removed
- ◆ The left-shift and right-shift operators were changed to behave more consistently across platforms
- ◆ Conversions between integers and floating point numbers were tightened and implemented more consistently across platforms

MySQL

MySQL is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses. MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation). In 2010, when Oracle acquired Sun, Widenius forked the open-source MySQL project to create MariaDB.



MySQL is a component of the LAMP web application software stack (and others), which is an acronym for Linux, Apache, MySQL, Perl/PHP/Python. MySQL is used by many database-driven web applications, including Drupal, Joomla, phpBB, and WordPress. MySQL is also used by many popular websites, including Facebook, Twitter, Flickr, and YouTube.

phpmyadmin

phpMyAdmin is a free and open source administration tool for MySQL and MariaDB. As a portable web application written primarily in PHP, it has become one of the most popular MySQL administration tools, especially for web hosting services.



JSON

JavaScript Object Notation (JSON) is an open-standard file format that uses human-readable text to transmit data objects consisting of attribute-value pairs and array data types (or any other serializable value). It is a very common data format used for asynchronous browser-server communication, including as a replacement for XML in some AJAX-style systems.

