

DOCTOR PATIENT PORTAL

Project Report Submitted by

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Reg. No: AJC17MCA-D030

In Partial fulfillment for the award of the degree Of

MASTER OF COMPUTER APPLICATIONS(MCA)

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY



**AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY**

[Affiliated to APJ Abdul Kalam Technological University, Kerala. Approved by AICTE, Accredited by NAAC with 'A' grade. Koovappally, Kanjirappally, Kottayam, Kerala - 686518]

2017-2019

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DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS



CERTIFICATE

This is to certify that the project entitled "**Doctor Patient Portal**" is a bonafide record of the work done by **Jintumol Thomas AJC17MCA-D030**, during the academic year **2017-2019** carried out under our supervision. It is certified that all corrections/suggestions indicated for assessment have been incorporated in the report. The work report has been approved as it satisfies the academic requirements in respect of the project work prescribed by the university for the Master of Computer Applications Degree. Certified further, that to the best of our knowledge the exact work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this to any other candidate.

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DECLARATION

I hereby declare that the project report "**Doctor Patient Portal**" is a bonafide work done at Amal Jyothi College of Engineering, towards the partial fulfilment of the requirements for the award of the Degree of Master of Computer Applications (MCA) from APJ Abdul Kalam Technological University, during the academic year 2017-2019.

Date.....

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I am indebted to my beloved teachers whose cooperation and suggestions throughout the project which helped me a lot. I also thank all my friends and classmates for their interest, dedication and encouragement shown towards the project. I convey hearty thanks to parents for the moral support, suggestion and encouragement to make this venture a success.

Jintumol Thomas

ABSTRACT

Doctor Patient Portal system that helps doctors in their work and also patients to book appointments and view medical history. The system allows doctors to manage their booking slots online and those slots are reserved in their names. Patient search doctors using their specialization and the system manages the appointment data for multiple doctors for various time and date. Doctors can take leave that approved only by admin. Pharmacy add medical products with its images and users view the product details and also the clean vision of product description.

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LIST OF ABBREVIATIONS

- IDE - Integrated Development Environment
- HTML - Hyper Text Markup Language.
- CSS - Cascading Style Sheet
- SQL - Structured Query Language
- DFD - Data Flow Diagram
- GCP - Google Cloud Platform
- AWS - Amazon Web Services.
- C2 - Elastic Compute Cloud
- S3 - Simple Storage Systems
- IAM - Identity Access Management

INTRODUCTION

Doctor Patient Portal is an online application developed to help doctors in their work and also patients to book doctor appointments and view medical progress. The system allows doctors to manage their booking slots online. Patients are allowed to book empty slots online and those slots are reserved in their name.

The system manages the appointment data for multiple doctors for various date and times. Each time a user visits a doctor his/her medical entry is stored in the database by doctor. Next time a user logs in he may view his/her entire medical history as and when needed.

Google Cloud Platform (GCP)

Google Cloud Platform is a suite of public cloud computing services offered by Google. The platform includes a range of hosted services for compute, storage and application development that run on Google hardware. Google Cloud Platform services can be accessed by software developers, cloud administrators and other enterprise IT professionals over the public internet or through a dedicated network connection.

Introduction to GitHub

GitHub is a web-based hosting service for version control using git. It is mostly used for computer code. It offers all of the distributed version control and source code management (SCM) functionality of Git as well as adding its own features

MongoDB

MongoDB is a free and open-source cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with schemas

Bigtable in GCP

Cloud Bigtable is Google's NoSQL Big Data database service. It's the same database that powers many core Google services, including Search, Analytics, Maps, and Gmail.

Google AdWords

AdWords (Google AdWords) is an advertising service by Google for businesses wanting to display ads on Google and its advertising network. The AdWords program enables businesses to set a budget for advertising and only pay when people click the ads. The ad service is largely focused on keywords.

SiteLock Security

SiteLock is a service that performs daily scans of a website to identify vulnerabilities and protect against threats like viruses, cross-site scripting, SQL injection and even email blacklisting.

Data Security

Data security means protecting digital data, such as those in a database, from destructive forces and from the unwanted actions of unauthorized users, such as a cyberattack or a data breach.

PART 1

DEPLOYMENT OF THE APPLICATION IN VARIOUS CLOUD PLATFORMS

1.1 GOOGLE CLOUD PLATFORM (GCP)

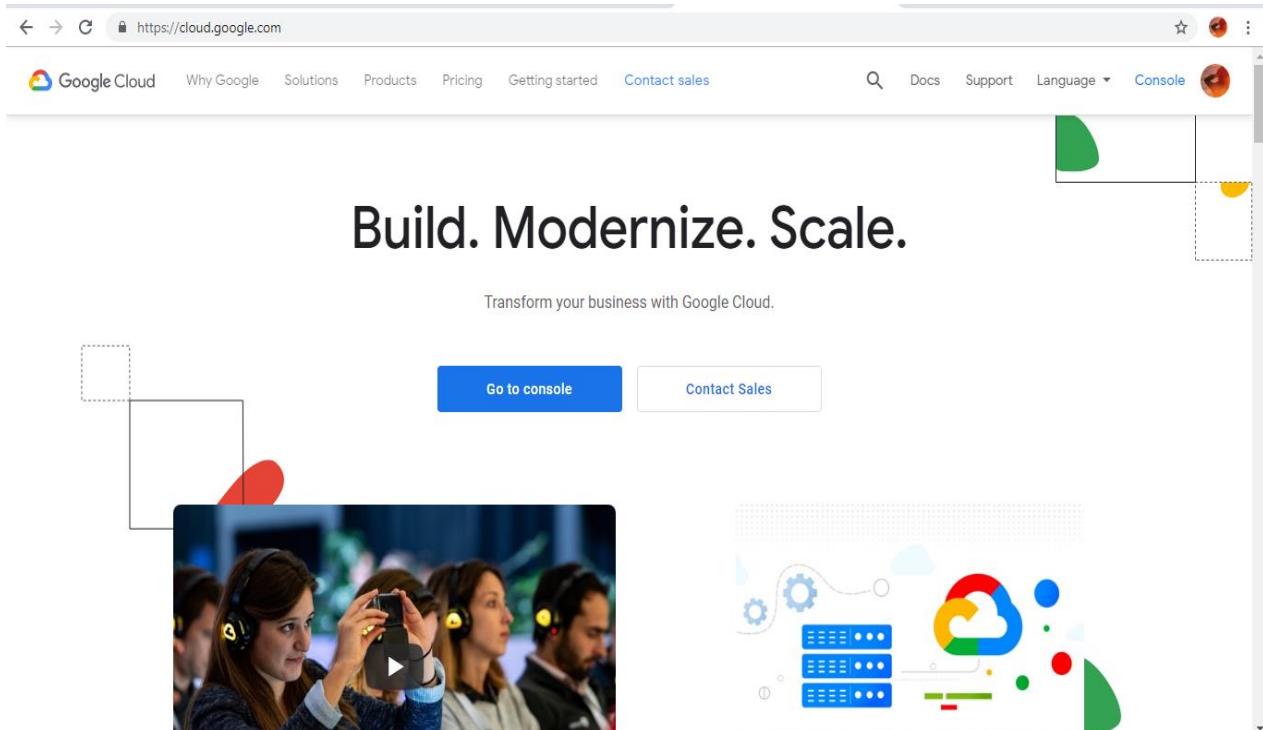
1.1.1 INTRODUCTION TO GOOGLE CLOUD PLATFORM

Google Cloud Platform is a suite of public cloud computing services offered by Google. Google Cloud Platform offers services for compute, storage, networking, bigdata, machine learning and the internet of things (IoT). The platform includes a range of hosted services for compute, storage and application development that run on Google hardware. Google Cloud Platform services can be accessed by software developers, cloud administrators and other enterprise IT professionals over the public internet or through a dedicated network connection.

1.1.2 COMPUTE ENGINE FOR THE IMPLEMENTATION OF APPLICATION

Google Compute Engine, which is an infrastructure-as-a-service (IaaS) offering that provides users with virtual machine instances for workload hosting. Google Compute Engine delivers virtual machines running in Google's innovative data centers and worldwide fiber network. Compute Engine's VMs boot quickly, come with persistent disk storage, and deliver consistent performance.

Step 1: Start the Google Cloud Platform



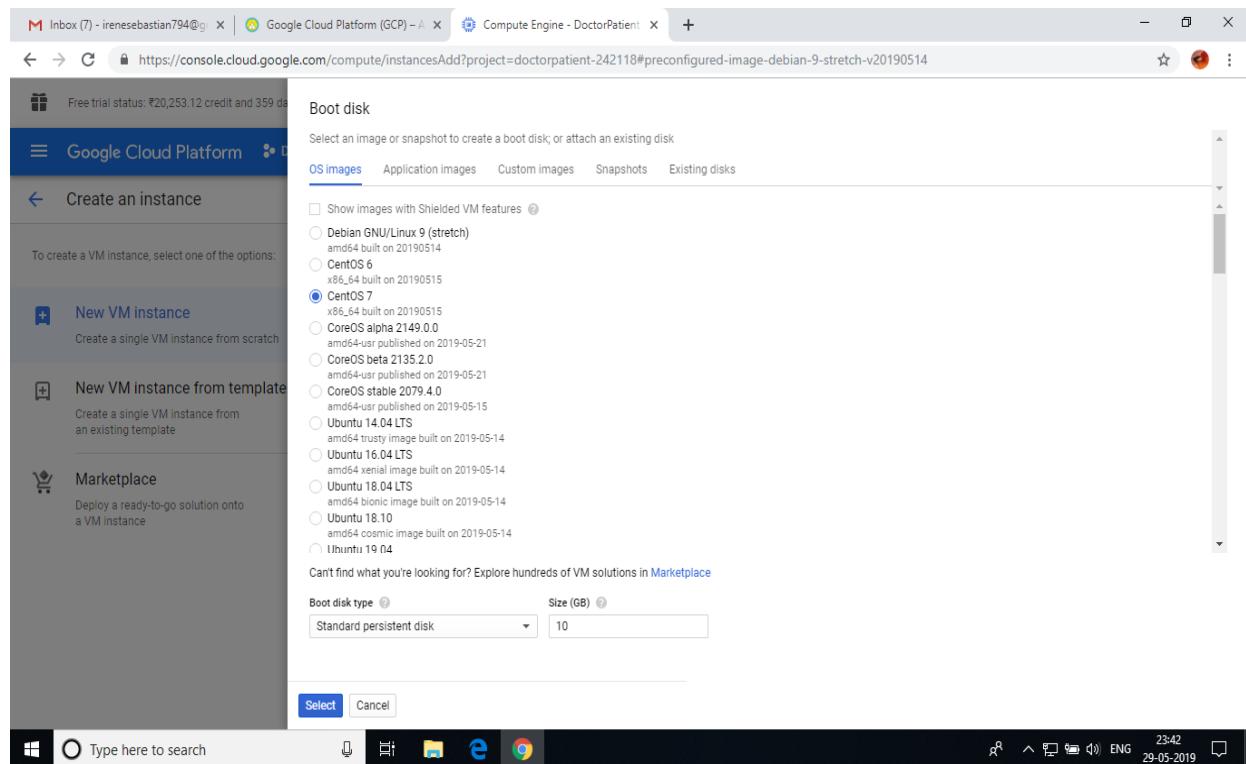
Step 2: Go to the Compute Engine Section by selecting it from the Menu appear in the left side of the platform

The screenshot shows the Google Cloud Platform dashboard. The left sidebar has a 'Compute Engine' section expanded, with options like VM instances, Instance groups, Instance templates, Sole tenant nodes, Disks, Snapshots, Images, TPUs, Committed use discounts, Metadata, Health checks, Zones, Network endpoint groups, Operations, and Security scans. The main content area displays the 'Compute Engine' monitoring interface with a graph of CPU usage over time and a note about instance/cpu utilization. To the right, there are sections for Google Cloud Platform status, Billing (showing estimated charges of INR 0.00), and Error Reporting.

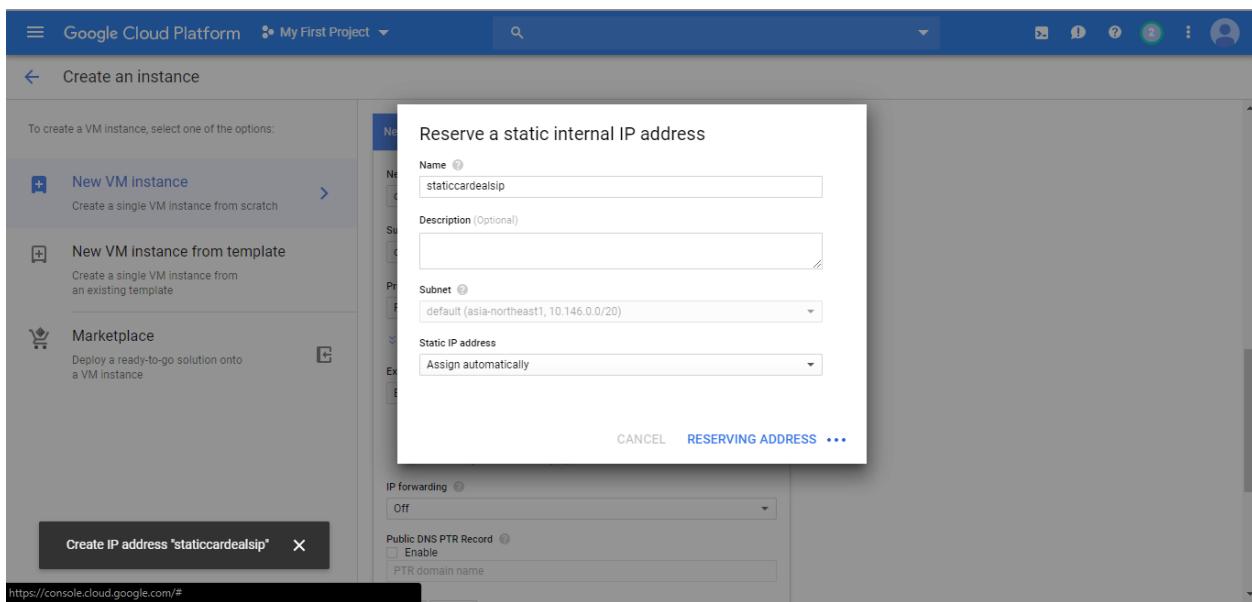
Step 3: Create a New Instance (Give the Name You Like)

The screenshot shows the 'Create an instance' page under the Compute Engine section. On the left, there are three options: 'New VM instance' (selected), 'New VM instance from template', and 'Marketplace'. The 'New VM instance' form is filled out with the following details: Name: 'hosipa', Region: 'asia-south1 (Mumbai)', Zone: 'asia-south1-c', Machine type: '1 vCPU', 3.75 GB memory, Container: 'Deploy a container image to this VM instance' (unchecked), Boot disk: 'New 10 GB standard persistent disk' (Image: 'CentOS 7'), and Service account: 'Compute Engine default service account'. A note on the right indicates free trial credits remaining.

Step 4: Choose Cent OS 7 as your OS



Step 5: From the Network Interface option, Reserve Static Internal and External IP address



Then Our Instance will be created

The screenshot shows the Google Cloud Platform Compute Engine VM instances page. The left sidebar lists options like VM instances, Instance groups, Instance templates, Sole tenant nodes, Disks, Snapshots, Images, TPUs, Committed use discounts, Metadata, Marketplace, and Help. The main area displays a table of VM instances with columns: Name, Zone, Recommendation, In use by, Internal IP, External IP, and Connect. One instance, 'hospica' located in 'asia-south1-c', is listed with its details: Internal IP 10.160.0.2 (nic0), External IP 35.200.137.122, and an SSH connection option.

Step 6: Open the Shell by Clicking the SSH drop down appears on the right side of our Instance.

The screenshot shows a Google Chrome browser window titled 'SSH: hospica @ doctorpatient-242118 - Google Chrome'. The address bar shows the URL https://ssh.cloud.google.com/projects/doctorpatient-242118/zones/asia-south1-c/instances/hospica?authuser=0&hl=en_US&projectN.... A modal dialog box in the center says 'Connecting...' and 'Transferring SSH keys to the VM.' To the right of the browser, the Google Cloud Platform Compute Engine interface is visible, showing the same 'hospica' instance details as in the previous screenshot.

Step 7: In the Shell

Type in the following commands one by one

a. To get the Admin Privileges type the Command: sudo -s

b. For updating type: yum update -y

c. yum install -y perl

d. yum install -y wget

e. hostname centos.yourhostname.com

f. systemctl stop NetworkManager.service

g. systemctl disable NetworkManager.service

h. Then type the command for install cPanel and WHM

```
cd /home && curl -o latest -L https://securedownloads.cpanel.net/latest && sh latest
```

i. Set password for WHM by typing the command ‘passwd’ on the shell

```
Connected host fingerprint: 1e:0f:a9:b0:b4:f5:a7:ec:67:91:04:73:ff
[irenesebastian794@hospica ~]$ sudo -s
[irenesebastian794@hospica ~]$ yum update -y
Loaded plugins: fastestmirror
Determining fastest mirrors
epel/x86_64/6/metalink
* base: download.mirror.edu.sg
* epel: download.mirror.edu.sg
* extras: repo.apknet.co.id
* updates: ftp-srv2.kidilabs.jp
epel
extras
google-cloud-sdk/signature
google-cloud-sdk/signature
google-compute-engine/signature
google-compute-engine/signature
updates
base
epel
extras
google-cloud-sdk/primary
google-cloud-sdk/primary
google-compute-engine/primary
google-compute-engine/primary
updates
base
epel
extras
google-cloud-comp
google-cloud-comp
google-cloud-adk/
google-cloud-adk/
updates
base
epel/x86_64/metal
epel
extras
google-cloud-comp
google-cloud-comp
google-cloud-adk/
google-cloud-adk/
updates
(1/10): base/7/x86_64/group_gz
(2/9): epel/x86_64/group_gz
(3/9): epel/x86_64/updateinfo
(4/9): epel/x86_64/primary_db
(5/9): google-cloud-sdk/primary_db
(6/9): google-cloud-sdk/primary
(7/9): google-compute-engine/primary_db
(8/9): base/7/x86_64/primary_db
(9/9): updates/7/x86_64/primary_db
Last login: Sat May 30 09:17:53 2019
[root@armv2:~]# [root@armv2:~]# Loaded plugins: f
base
epel/x86_64/metal
epel
extras
google-cloud-comp
google-cloud-comp
google-cloud-adk/
google-cloud-adk/
updates
base
epel
(1/10): base/7/x86_64/group_gz
(2/10): epel/x86_64/group_gz
[Secure | https://]
Connected host fingerprint: 1e:0f:a9:b0:b4:f5:a7:ec:67:91:04:73:ff
[irenesebastian794@hospica ~]$ [root@armv2:~]# [root@armv2:~]# Loaded plugins: f
base
epel
extras
google-cloud-comp
google-cloud-comp
google-cloud-adk/
google-cloud-adk/
updates
base
epel
epel
extras
google-cloud-comp
google-cloud-comp
google-cloud-adk/
google-cloud-adk/
updates
(1/10): base/7/x86_64/group_gz
(2/10): epel/x86_64/group_gz
[Secure | https://]
```

```
selinux" in 6.22611451148987 second(s)
2019-05-30 09:17:53 434 ( INFO): Enabling one-time shutdown hook
2019-05-30 09:17:53 435 (DEBUG): - systemctl start cpcleartaskqueue
2019-05-30 09:17:53 435 (DEBUG): - systemctl [END]
2019-05-30 09:17:53 435 ( INFO): Completed execution of "/usr/bin/systemctl start cpcleartaskqueue" in 0.103239774
703379 second(s)
2019-05-30 09:17:53 438 ( INFO): Flushing the task queue
2019-05-30 09:17:53 447 ( INFO): cPanel install finished in 7 minutes and 15 seconds!
2019-05-30 09:17:53 1392 ( INFO): Congratulations! Your installation of cPanel & WHM 11.80 is now complete. The next
step is to configure your server.
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): Before you configure your server, ensure that your firewall allows access on port
2087.
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): After ensuring that your firewall allows access on port 2087, you can configure y
our server.
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): 1. Open your preferred browser
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): 2. Navigate to the following url using the address bar and enter this one-time au
tologin url:
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): https://35.200.137.122:2087/cpsess6708277224/login/?session=root%3ap8oCwCgxeJVN_5
4d83acreate user session2ccaf837451a8acl117d8157c7e400871d9
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): After the login url expires you generate a new one using the 'whmlogin' command o
r manually login at:
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): https://35.200.137.122:2087
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): Visit https://go.cpanel.net/whminit for more information about first-time configu
ration of your server.
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): Visit http://support.cpanel.net or https://go.cpanel.net/allfaq for additional su
pport
2019-05-30 09:17:53 1392 ( INFO):
2019-05-30 09:17:53 1392 ( INFO): Thank you for installing cPanel & WHM 11.80!
Removing /root/installer.lock
[root@hospica home]# passwd
Changing password for user root.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
passwd: all authentication tokens updated successfully.
[root@hospica home]#
```

Step 8: Purchase a Domain from Freenom (www.freenom.com)

The screenshot shows the Freenom website's search interface. A search bar at the top contains the text "Find a new FREE domain". To the right of the search bar is a large blue button labeled "Check Availability". Below the search bar, the domain "hospica.gq" is entered into a field. To the right of this field are two options: "Forward this domain" and "or" followed by "Use DNS". Further to the right, a dropdown menu shows "3 Months @ FREE". At the bottom right of the search area is a blue "Continue" button. The Freenom logo and tagline "A Name for Everyone" are visible at the top left. The top navigation bar includes links for "Services", "Partners", "About Freenom", "Support", "Sign in", and "English". The status bar at the bottom shows system information like battery level, signal strength, and date/time.

Step 9: Create a Cloud DNS zone (Network Services -> Cloud DNS -> Create Zone).

The screenshot shows the Google Cloud Platform Compute Engine interface. On the left, a sidebar lists various services: Compute Engine (selected), SQL, Spanner, Memorystore, Filestore, VPC network, Network services, and Hybrid Connectivity. Under Compute Engine, a sub-menu is open for "Cloud DNS". The main area displays a table of VM instances, with one instance named "hospica" listed. The table columns include Name, Zone, Recommendation, In use by, Internal IP, External IP, and Connect. The "Zone" column for "hospica" shows "asia-south1-c". The status bar at the bottom indicates the URL as <https://console.cloud.google.com/compute/instances?project=doctorpatient-242118&instancessize=50>. The system tray at the bottom right shows the date as 30-05-2019 and time as 20:53.

a. Create a zone by providing the zone name

Google Cloud Platform Network services Create a DNS zone

Zone name: doctor

DNS name: .hospica.gq

DNSSEC: Off

Description (Optional):

After creating your zone, you can add resource record sets and modify the networks your zone is visible on.

Create Cancel

Step 10: In the Newley Created zone, add two record sets A and CNAME. Provide the External IP address of our virtual machine in the IPV4 address field. Also provide the registered domain names.

Google Cloud Platform Network services Create record set

DNS Name: .hospica.cf.

Resource Record Type: A TTL: 5 TTL Unit: minutes

IPv4 Address: 35.200.137.122

Create Cancel

The screenshot shows the Google Cloud Platform Network services interface for creating a record set. On the left sidebar, 'Cloud DNS' is selected. In the main area, a CNAME record for 'www.hospica.gq' is being configured with a TTL of 5 minutes. The 'Create' button is visible at the bottom.

The screenshot shows the Google Cloud Platform Network services interface for zone details. The 'Cloud DNS' section is selected. The zone 'doctor' is shown with a DNS name of 'hospica.gq' and type 'Public'. Under 'Record sets', there is a table listing four entries:

DNS name	Type	TTL (seconds)	Data
hospica.gq.	A	300	35.200.137.122
hospica.gq.	NS	21600	ns-cloud-d1.googledomains.com ns-cloud-d2.googledomains.com ns-cloud-d3.googledomains.com ns-cloud-d4.googledomains.com
hospica.gq.	SOA	21600	ns-cloud-d1.googledomains.com.cloud-dns-hostmaster.google.com.1216003600259200300
www.hospica.gq.	CNAME	300	www.hospica.gq.

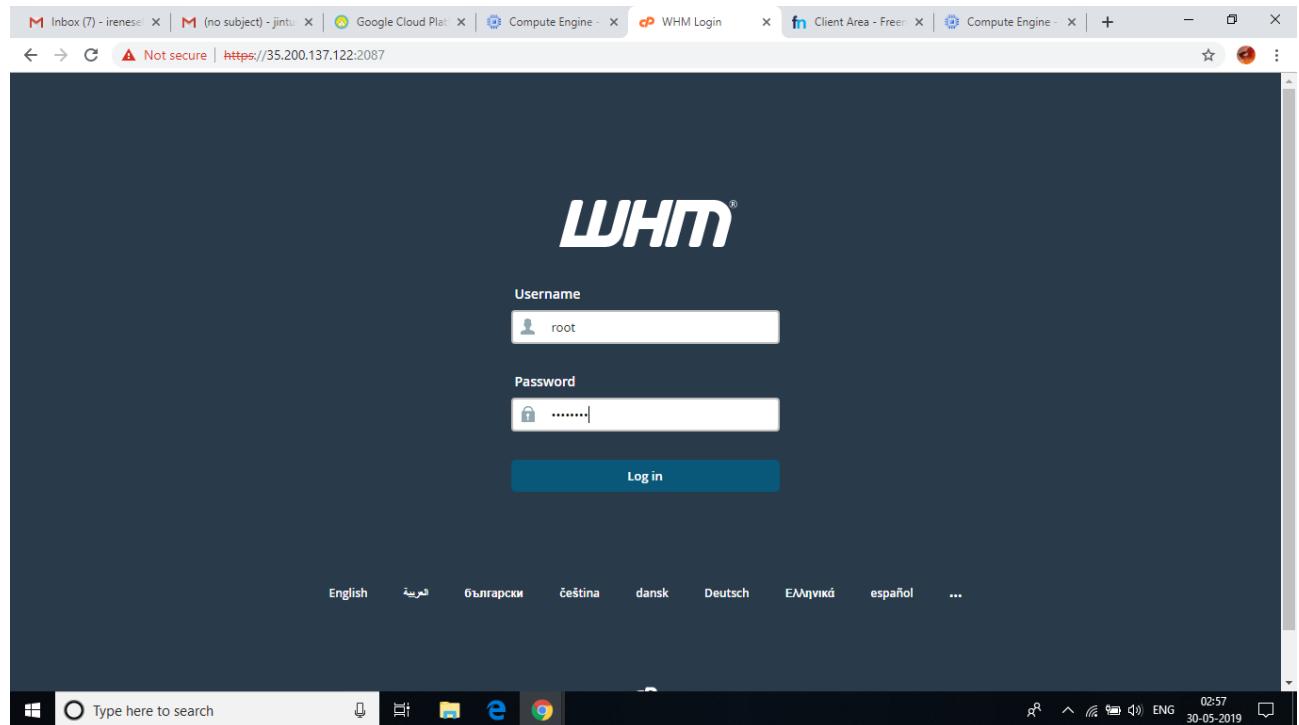
Step 11: Create a Firewall rule. (Network services -> Firewall rules)

Name	Type	Targets	Filters	Protocols / ports	Action	Priority	Network
default-allow-http	Ingress	http-server	IP ranges: 0.0.0.0/0	tcp:80	Allow	1000	default
default-allow-https	Ingress	https-server	IP ranges: 0.0.0.0/0	tcp:443	Allow	1000	default
default-allow-icmp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	icmp	Allow	65534	default
default-allow-internal	Ingress	Apply to all	IP ranges: 10.128.0.0/9	tcp:0-65535 udp:0-65535 icmp	Allow	65534	default
default-allow-rdp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:3389	Allow	65534	default
default-allow-ssh	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:22	Allow	65534	default

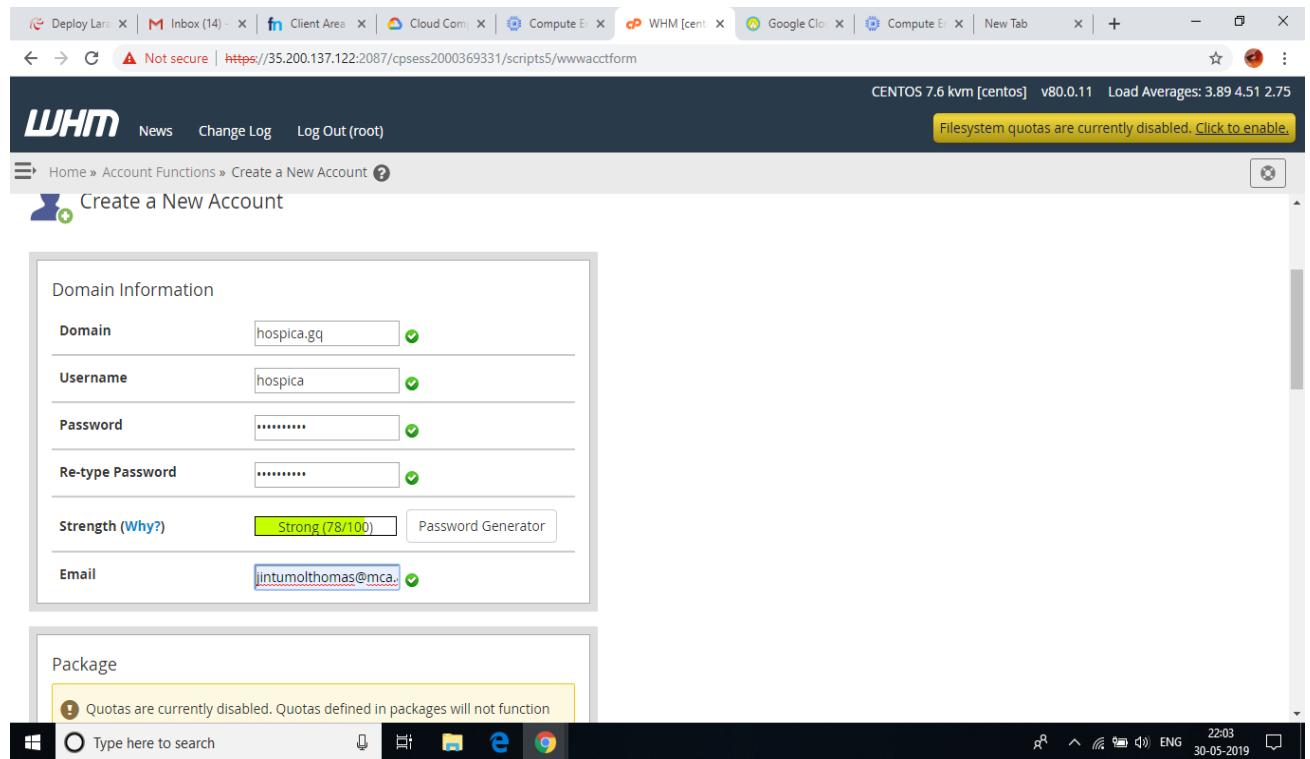
Step 12: Set password for WHM by typing the command ‘passwd’ on the shell

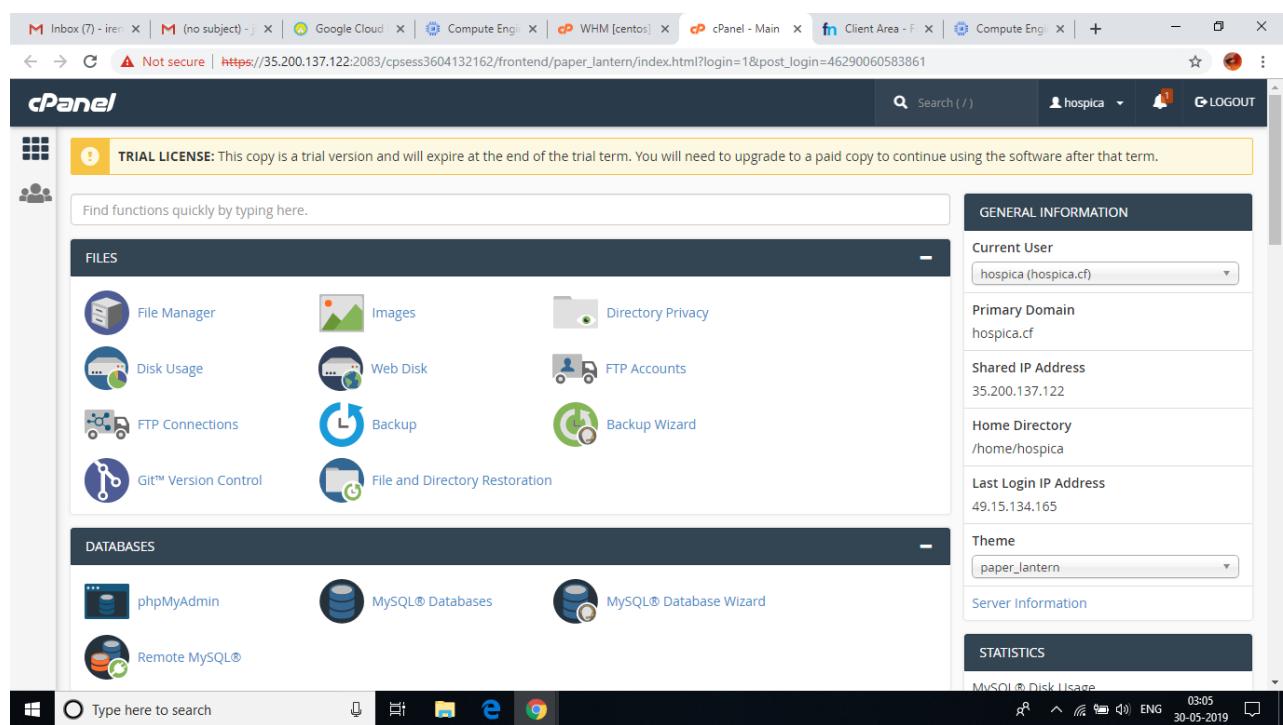
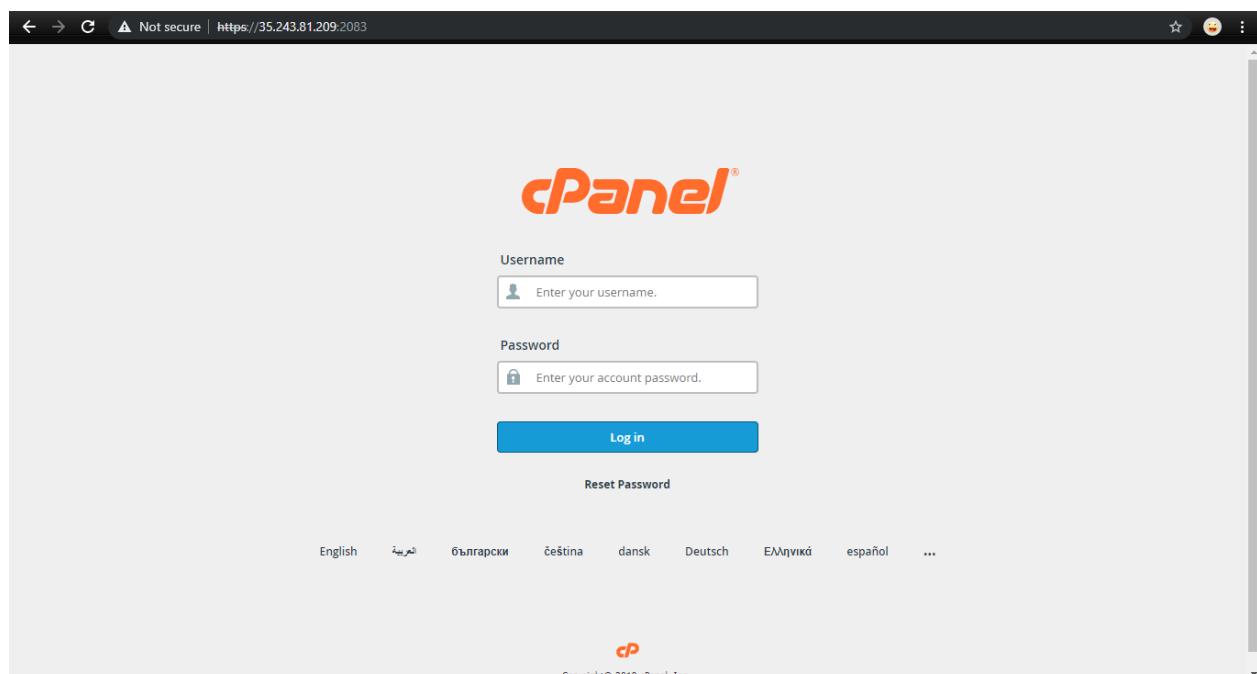
Then open the WHM login page by https:// ipaddress/2087

Username: root and give the password

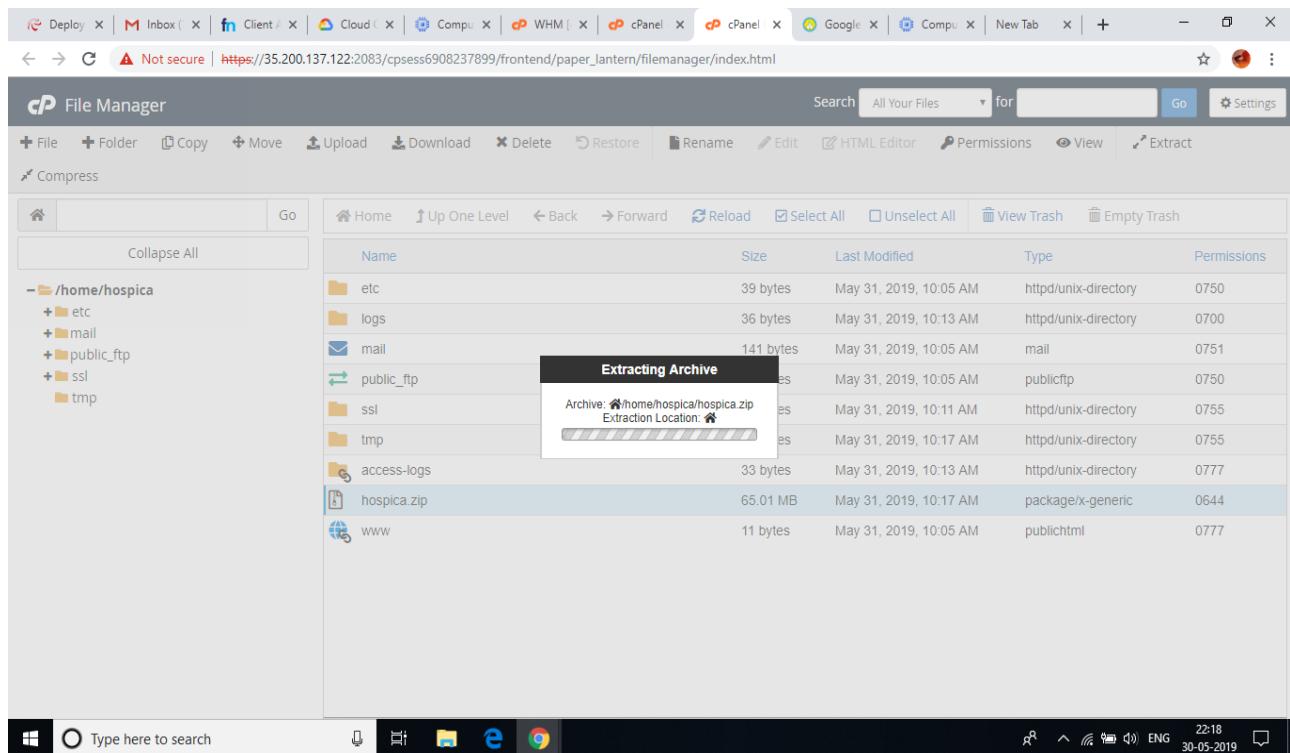


Step 13: To create a new account go to Account Functions -> create a new account. (provide username, password and Email).

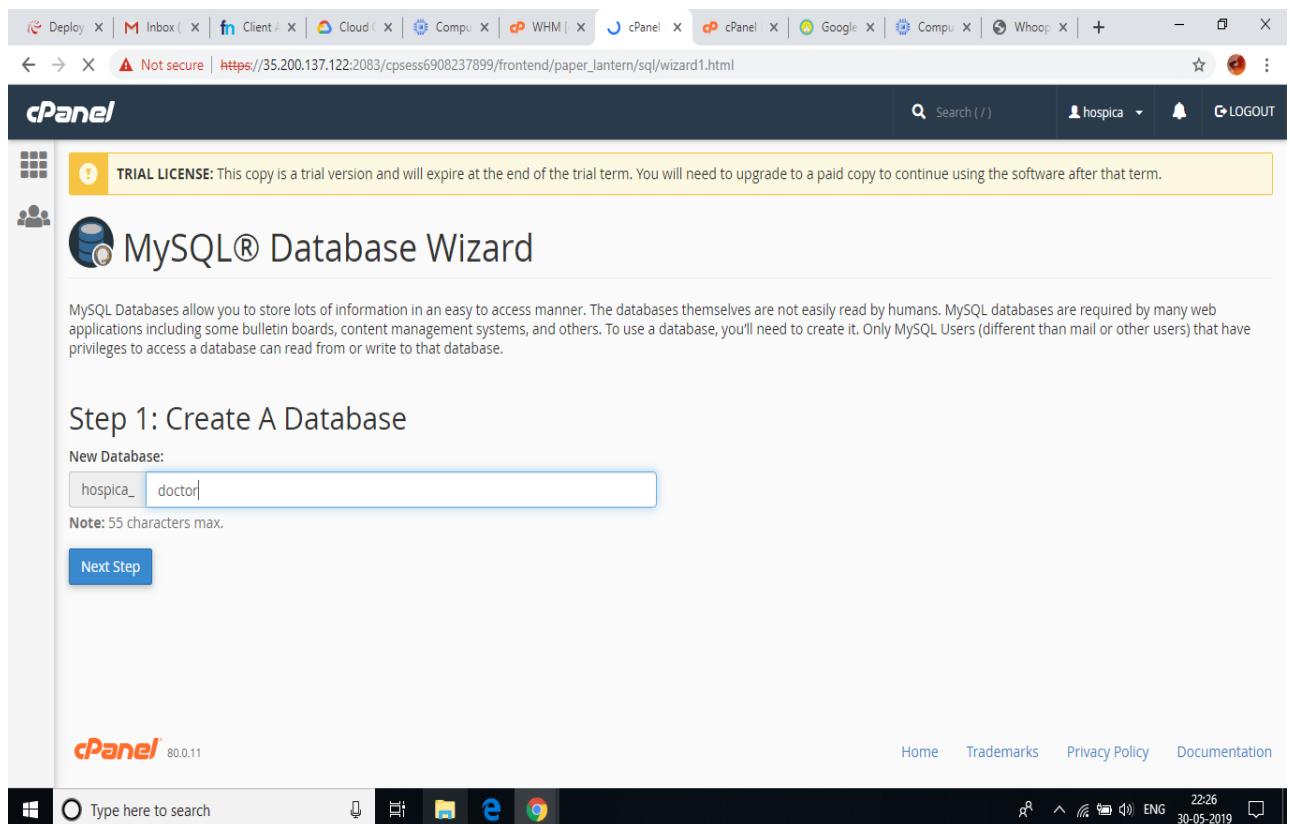


Step 14: Log into the cPanel (<https://ipaddress/2083>)

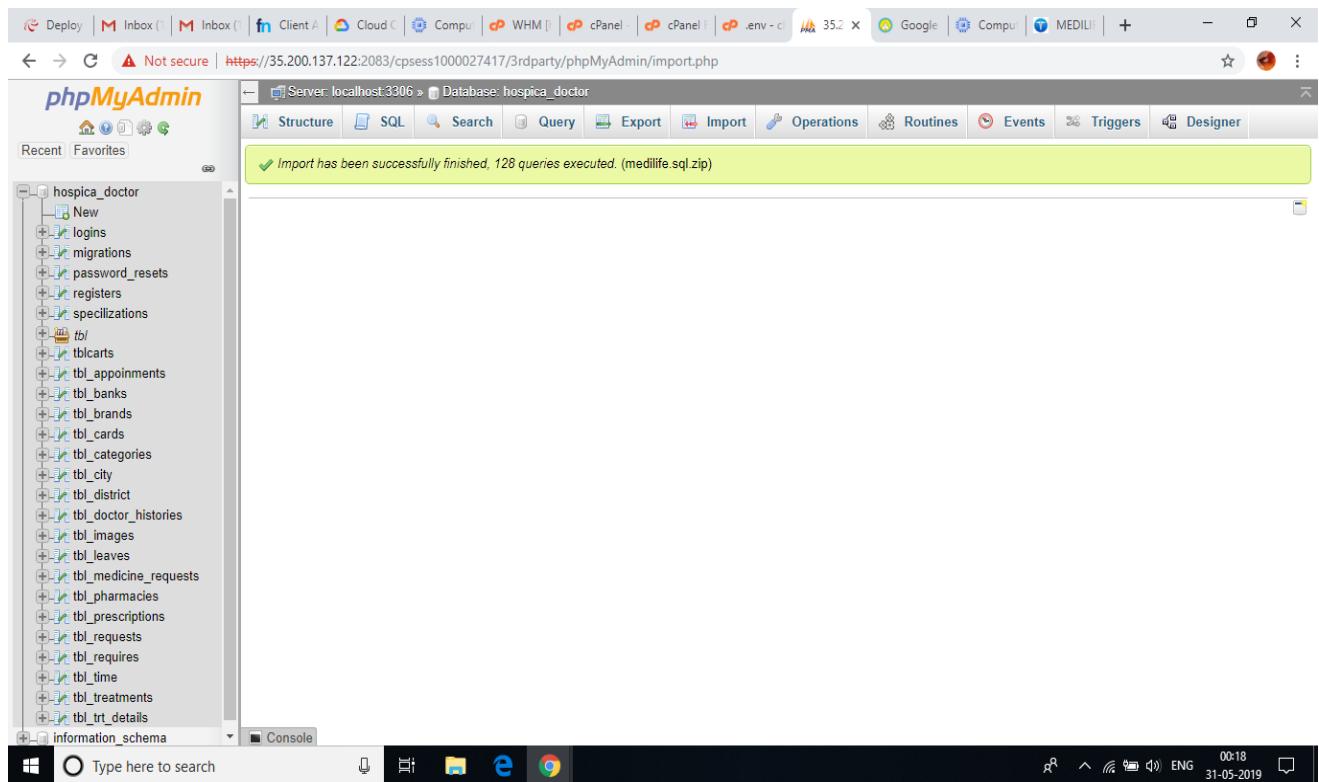
Step 15: In the file manager, Upload the project to the public_html folder (.zip) format.



Step 16: Open MySQL Databases icon and create new database and user. Then add the user to the database.



Step 17: Open phpMyAdmin and import our database. (You can also create a new database).



Step 18: Then edit the .env page.

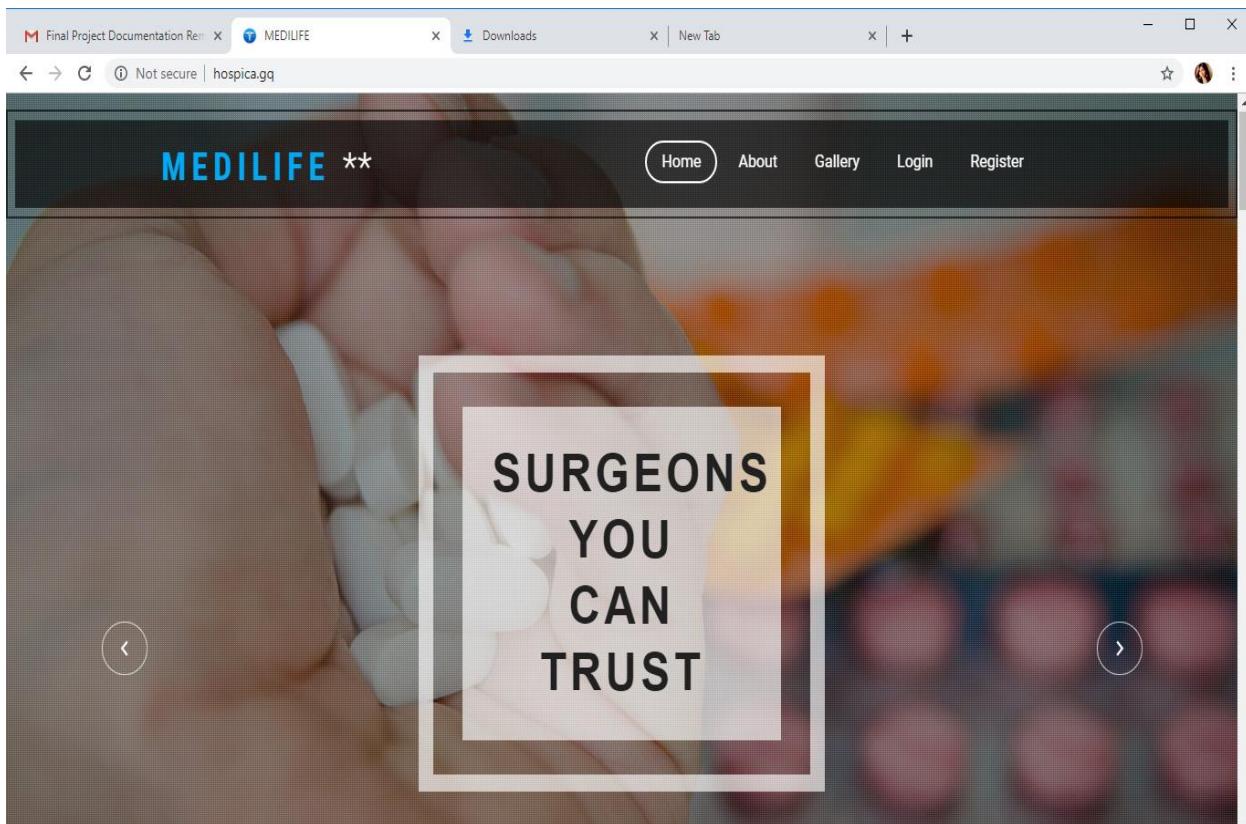
Give the username, password and the database name

```

Editing: /home/hospica/.env Encoding: utf-8 Re-open Use legacy editor Save Changes Close
Keyboard shortcuts
1 APP_NAME=medilife
2 APP_ENV=local:8000
3 APP_KEY=base64:zXgm8tJHve7/ctNkHGFCpDpXvqgjrqjDy7heetH2fs=
4 APP_DEBUG=true
5 APP_URL=http://localhost:8000
6
7 LOG_CHANNEL=stack
8
9 DB_CONNECTION=mysql
10 DB_HOST=127.0.0.1
11 DB_PORT=3306
12 DB_DATABASE=hospica_doctor
13 DB_USERNAME=hospica_user
14 DB_PASSWORD=Dintu@1996
15
16 BROADCAST_DRIVER=log
17 CACHE_DRIVER=file
18 QUEUE_CONNECTION=sync
19 SESSION_DRIVER=file
20 SESSION_LIFETIME=120
21
22 REDIS_HOST=127.0.0.1
23 REDIS_PASSWORD=null
24 REDIS_PORT=6379
25
26 MAIL_DRIVER=smtp
27 MAIL_HOST=smtp.gmail.com
28 MAIL_PORT=465
29 MAIL_USERNAME=jintumolthomas@mca.ajce.in
30 MAIL_PASSWORD=jintu123
31 MAIL_ENCRYPTION=ssl
32
33 AWS_ACCESS_KEY_ID=
34 AWS_SECRET_ACCESS_KEY=
35 AWS_DEFAULT_REGION=us-east-1
36 AWS_BUCKET=

```

Step 19: Our project is hosted in Google Cloud Platform.



1.1.3 WEB HOST MANAGEMENT TOOLS

1.1.3.1 Web Host Manager (WHM)

Web Host Manager, or WHM, is a powerful program that allows administrative access to the back end of cPanel. There are two versions that Host Gator uses. Reseller accounts get basic WHM. Dedicated Servers and VPS accounts get root WHM (also called rWHM), which has features that require root access to the server enabled. Resellers cannot have rWHM. WHM gives you a lot more control and flexibility when managing either a few very popular and resource intensive sites, or large number of sites. On top of giving you the ability to sell hosting services to other people, WHM also gives you the option to create and manage multiple cPanels. There are lots of really good reasons, if you have business oriented or popular sites, to place them on separate cPanels. Here are a few of the more common reasons we see:

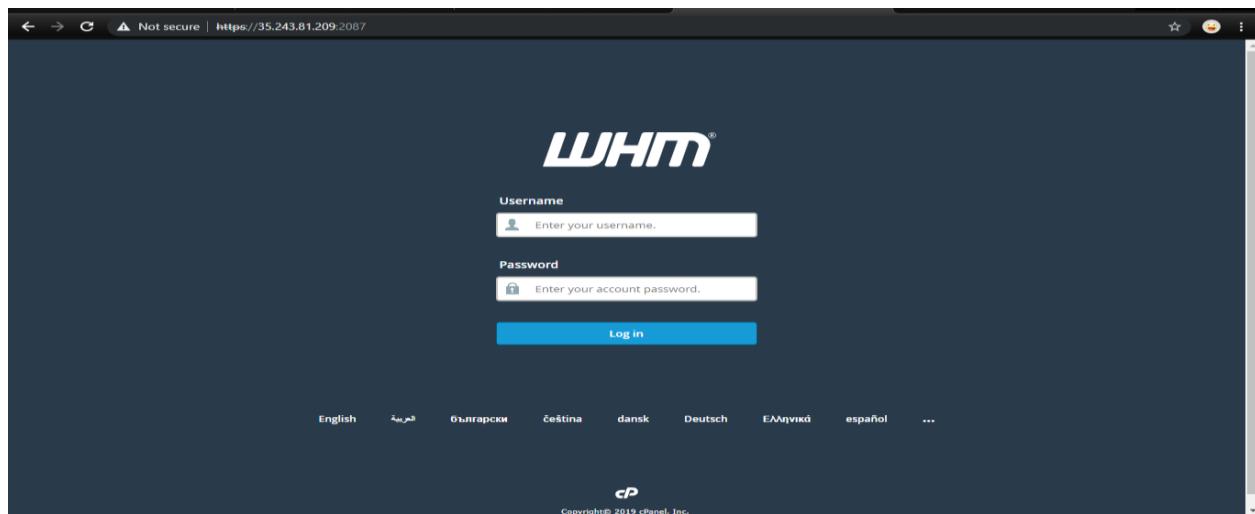
- If one of your sites is hacked or attacked, the odds that the hacker can get into your other sites is dramatically reduced, which increases your security.
- There is no way for someone to tell if accounts on different cPanels are attached to the same WHM account, which increases your privacy.
- If you have multiple sites that need to take credit cards, using WHM saves you a lot of time, stress, and money. To be able to process credit cards you need an SSL certificate.
- You have the ability to monitor and adjust your bandwidth and disk space, which can be key to keeping a quickly growing or popular site from being suspended or going down due to bandwidth overages.
- Managing a large number of domains in one cPanel can be frustrating, especially if you update the files regularly. While we allow unlimited domains on a shared cPanel account, that does not mean it is always pleasant to work on that many domains in one cPanel.
- You need to have several web sites that take credit cards, and each one needs its own cPanel for its own dedicated IP address.

WHM gives you a suite of tools to easily do the following things:

- Create, delete, and suspend your cPanel accounts.
- Manage and monitor your sites (password resets).
- Access to check and change all of your domains' DNS zones.

- The ability to configure your own customers' support requests through cPanel.
- Permission to check the server information and status.
- Ability to create your own default page when you create a new account.
- Access to customize your hosting and control panel with extensive branding.
- Ability to change your client domain names and user names.
- Hop between every cPanel on your account and access/change anything that does not require SQL access.

Step 1: Open WHM Panel then Signup



Step 2: Create a cPanel Account for our Project

1.1.3.2 Control Panel (cPanel)

cPanel is an online Linux-based web hosting control panel that provides a graphical interface and automation tools designed to simplify the process of hosting a web site. cPanel utilizes a 3-tier structure that provides capabilities for administrators, resellers, and end-user website owners to control the various aspects of website and server administration through a standard web browser. In addition to the GUI, cPanel also has command line and API-based access that allows third party software vendors, web hosting organizations, and developers to automate standard system administration processes.

cPanel is designed to function either as a dedicated server or virtual private server. The latest cPanel version supports installation on CentOS, Red Hat Enterprise Linux (RHEL), and CloudLinux OS. cPanel 11.30 is the last major version to support FreeBSD. Application-based support includes Apache, PHP, MySQL, PostgreSQL, Perl, and BIND (DNS). Email based support includes POP3, IMAP, and SMTP services. cPanel is accessed via https on port 2083.

Once installed, cPanel cannot be easily removed. cPanel's FAQ states that the best way to uninstall cPanel is by reformatting the server. However, uninstall guides are available online for expert server administrators who do not wish to reformat their server. Similarly, it should only be installed on a freshly installed operating system with minimal prior configuration.

The tools provided are designed to simplify running and controlling a website. It uses a tiered structure that allows different levels of access. Administrators and end users can control the different aspects of the server and the website directly through their browser. cPanel is generally accessed

using https on port 2083 or simply by adding “/cPanel” to the end of the host name. Depending on the hosting provider the cPanel will generally have some sort of auto installer or package dedicated to content management systems like WordPress.

Some of the great features that cPanel includes are:

- **Email:** Within cPanel you can create new email accounts, view/modify your existing accounts, modify your MX records, change email passwords, set up mail box quotas and much more.
- **Domains:** Under the domains section of cPanel, you can configure new domains to your account, set up parked domains, create subdomains, setup redirects, and much more.
- **File Management:** In the files section of cPanel, you can back up your cPanel account, access/modify files stored in your account, review your disk usage, and create/manage FTP accounts.

- **Databases:** Here you can create new databases, set up remote access to MySQL, access the databases using phpMyAdmin, and much more

cPanel is very user friendly and is quite robust. There are numerous tools within cPanel to handle a wide variety of tasks. It contains a full help menu that is easy to use.

Step 1: Open cPanel

The screenshot shows the cPanel main dashboard. At the top, there's a trial license notice: "TRIAL LICENSE: This copy is a trial version and will expire at the end of the trial term. You will need to upgrade to a paid copy to continue using the software after that term." Below this, there are two main sections: FILES and DATABASES. The FILES section includes icons for File Manager, Images, Directory Privacy, Disk Usage, Web Disk, FTP Accounts, FTP Connections, Backup, Backup Wizard, and GIT Version Control. The DATABASES section includes icons for phpMyAdmin, MySQL Databases, and MySQL Database Wizard, along with a Remote MySQL icon. On the right side, there's a sidebar with "GENERAL INFORMATION" containing details about the current user (hospica), primary domain (hospica.cf), shared IP address (35.200.137.122), home directory (/home/hospica), last login IP address (49.15.134.165), theme (paper_lantern), and server information. Below that is a "STATISTICS" section showing MySQL Disk Usage. The bottom of the screen shows a search bar and a taskbar with icons for File Manager, Upload, Download, Delete, Restore, Rename, Edit, HTML Editor, Permissions, View, Extract, and Settings.

Step 2: Open file Manager and Upload the Project.

The screenshot shows the cPanel File Manager interface. The left sidebar shows a tree view of the directory structure under "/home/hospica", including etc, logs, mail, public_ftp, ssl, tmp, access-logs, hospica.zip, and www. The main panel displays a list of files and directories with columns for Name, Size, Last Modified, Type, and Permissions. The permissions column shows values like 0750, 0700, 0751, 0750, 0755, 0755, 0777, 0644, and 0777. The bottom of the screen shows a search bar and a taskbar with icons for File Manager, Upload, Download, Delete, Restore, Rename, Edit, HTML Editor, Permissions, View, Extract, and Settings.

Name	Size	Last Modified	Type	Permissions
etc	39 bytes	May 31, 2019, 10:05 AM	httpd/unix-directory	0750
logs	36 bytes	May 31, 2019, 10:13 AM	httpd/unix-directory	0700
mail	141 bytes	May 31, 2019, 10:05 AM	mail	0751
public_ftp	22 bytes	May 31, 2019, 10:05 AM	publicftp	0750
ssl	77 bytes	May 31, 2019, 10:11 AM	httpd/unix-directory	0755
tmp	72 bytes	May 31, 2019, 10:17 AM	httpd/unix-directory	0755
access-logs	33 bytes	May 31, 2019, 10:13 AM	httpd/unix-directory	0777
hospica.zip	65.01 MB	May 31, 2019, 10:17 AM	package/x-generic	0644
www	11 bytes	May 31, 2019, 10:05 AM	publhtml	0777

Step 3: Open PhpMyAdmin and Import the database

Step 4: Create new Database

Step 5: Import the Database

File to import:
File may be compressed (gzip, bzip2, zip) or uncompressed.
A compressed file's name must end in `[format].[compression]` Example: `.sql.zip`

Browse your computer: medilife.sql.zip (Max: 50MB)

You may also drag and drop a file on any page.

Character set of the file:

Partial import:
 Allow the interruption of an import in case the script detects it is close to the PHP timeout limit. (This might be a good way to import large files, however it can break transactions.)
Skip this number of queries (for SQL) starting from the first one:

Other options:
 Enable foreign key checks

Format:

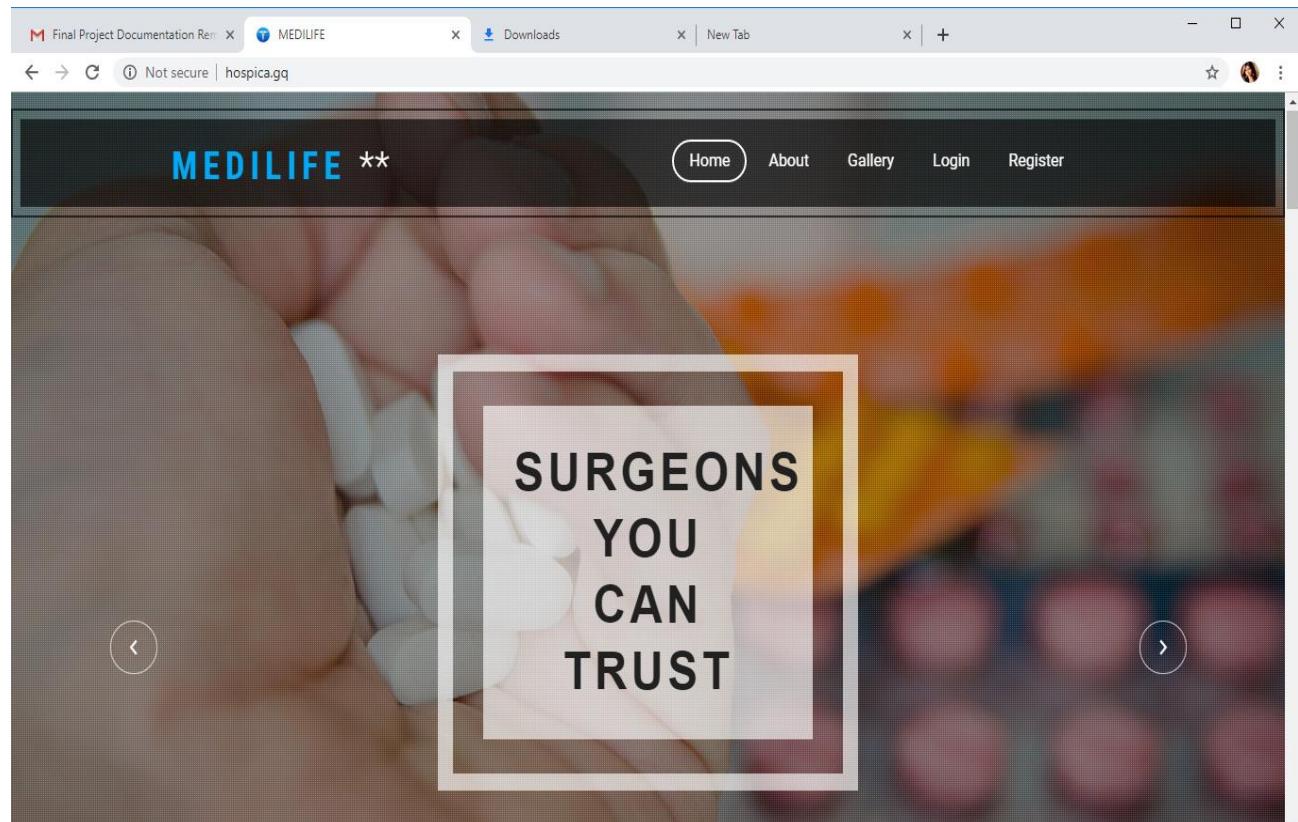
Format-specific options:
 Console

Step 6: Then edit the .env page.

```

1 APP_NAME=medilife
2 APP_ENV=local
3 APP_KEY=base64:zXgm8tJHve87/ctNkHGFCpDpXvqgjrqjDy7heetHjs=
4 APP_DEBUG=true
5 APP_URL=http://localhost:8000
6
7 LOG_CHANNEL=stack
8
9 DB_CONNECTION=mysql
10 DB_HOST=127.0.0.1
11 DB_PORT=3306
12 DB_DATABASE=hospica_doctor
13 DB_USERNAME=hospica_user
14 DB_PASSWORD=jintu@1996
15
16 BROADCAST_DRIVER=log
17 CACHE_DRIVER=file
18 QUEUE_CONNECTION=sync
19 SESSION_DRIVER=file
20 SESSION_LIFETIME=120
21
22 REDIS_HOST=127.0.0.1
23 REDIS_PASSWORD=null
24 REDIS_PORT=6379
25
26 MAIL_DRIVER=smtp
27 MAIL_HOST=smtp.gmail.com
28 MAIL_PORT=465
29 MAIL_USERNAME=jintumolthomas@mca.ajce.in
30 MAIL_PASSWORD=jintu123
31 MAIL_ENCRYPTION=ssl
32
33 AWS_ACCESS_KEY_ID=
34 AWS_SECRET_ACCESS_KEY=
35 AWS_DEFAULT_REGION=us-east-1
36 AWS_BUCKET=

```

Step 7: Project is hosted successfully.A screenshot of a web browser showing the "REGISTER" page of the MEDI LIFE website. The page has a blue gradient background. It contains several input fields arranged in a grid: "Patient Name", "email", and "Gender"; "Password" and "Confirm-Password" with a date input field "dd-mm-yyyy" next to it; "Phone Number", "House Name", and "Street"; and two dropdown menus labeled "--SELECT--" and "Zip-code". A "Register" button is located at the bottom center of the form.

1.1.3.3 Plesk Panel

Plesk is the leading WebOps hosting platform to run, automate and grow applications, websites and hosting businesses. Being the only OS-agnostic platform, Plesk is running on more than 380,000 servers, automating 11M+ websites and 19M mailboxes. Available in more than 32 languages across 140 countries, 50% of the top 100 service providers worldwide are partnering with Plesk today. Plesk has simplified the life of SysAdmins and SMBs since the early 2000's and continues to add value across multiple cloud services. The Plesk hosting platform effectively enables application developers by providing access to a simple and more secure web infrastructure managed by web pros and hosting companies.

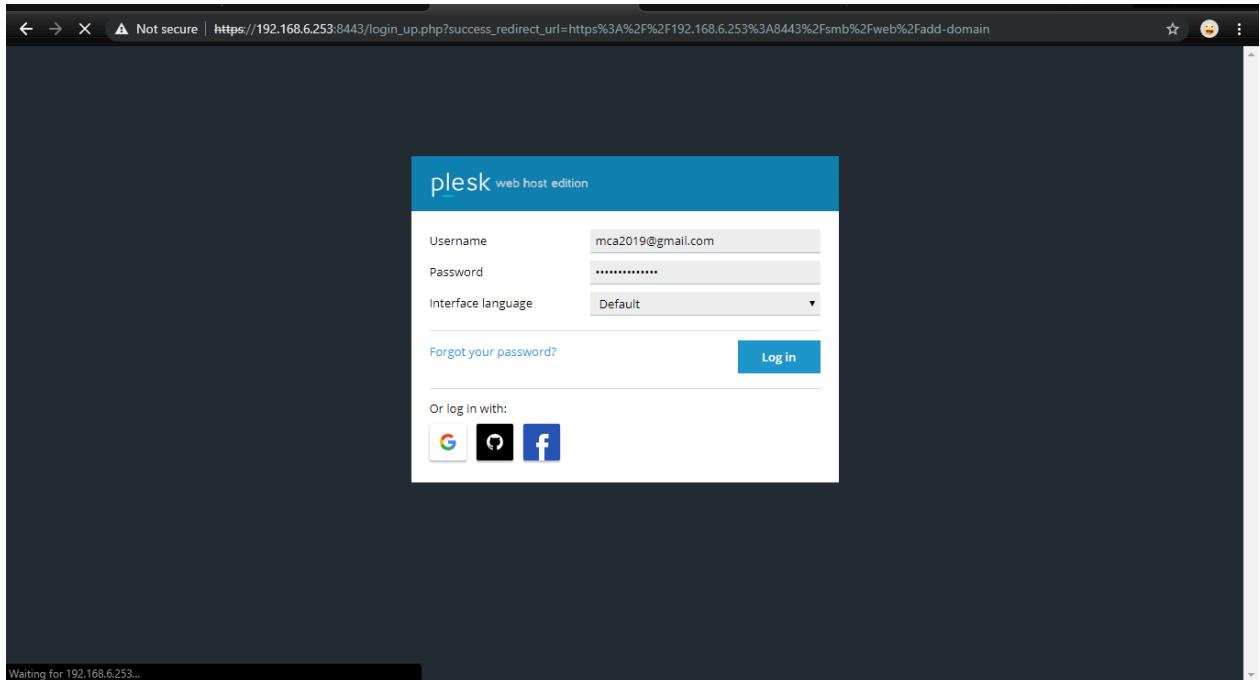
The worldwide developer market consists of over 20M cloud developers who are looking for access to faster, more secure and efficient infrastructures. The Plesk vision is to constantly elevate customer and partner profitability by providing them with a cloud platform that grants application developers a ready-to-code environment. Besides simplifying complexity, Plesk increases its efforts to enable customers and partners alike to extend and customize Plesk as an open hosting platform. The rich ecosystem of Plesk extensions not only provides access to even more relevant features targeted at specific audiences but also allows service providers of any size to generate unique upsell opportunities.

Plesk culture

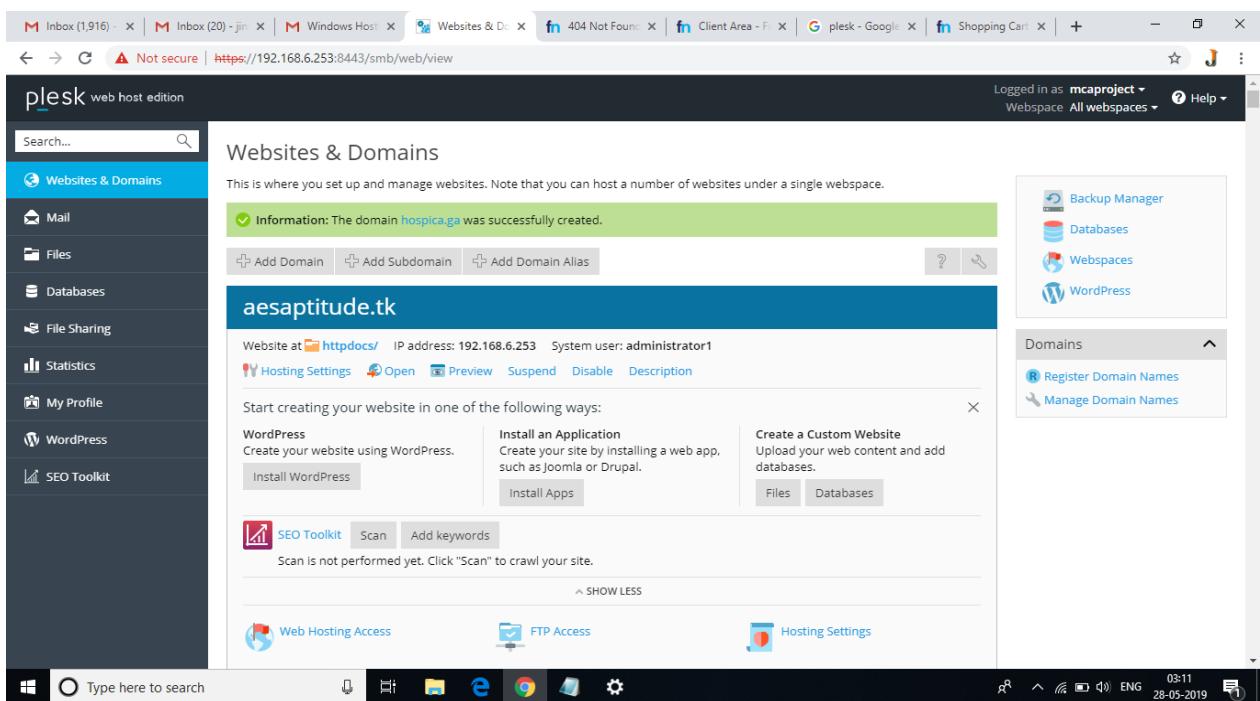
As a team, we thrive on excellence, innovation, collaboration, and efficiency. We enjoy what we do, understand our customers and build a hosting platform that clients love and need. The relentless commitment of our team to accept new business challenges guarantees that we are creative and respectful of time and resources as well as the environment. We keep our actions and goals transparent, cultivate a culture of leadership, inclusion, execution, and respect. As a former member of the Parallels group of companies, our background is global, innovative and diverse. January 2016 was the right time for Plesk to become a separate business, enabling us to accelerate development cycles, drive innovation and focus on the needs of our partners, customers and employees.

IMPLEMENTATION

Step 1: Use the Login credentials provided by the Deployment Manager to access the Admin panel. Use the Admin URL to log in, with Admin user and Admin password(temporary)



Step 2: Once you successfully logged in, you have to configure the web host, such as how you will use the product, user interface and etc. On the next step, you have to enter the hostname, if you already have a hostname use that one or create a new domain.



Step 3: Use a valid domain provider to register a domain. Here we are using 'Freenom' to register

The screenshot shows the Freenom Client Area interface. At the top, there are several browser tabs open, including 'Inbox (1,916)', 'Windows Host', 'Websites & Domains', 'Client Area - F...', 'plesk - Google', and 'Shopping Cart'. The main content area displays the domain 'hospica.ga' with the status 'ACTIVE'. Key information shown includes:

- Domain:** hospica.ga
- Registration Date:** 28/05/2019
- Expiry date:** 28/05/2019

Below this, there are tabs for 'Information', 'Upgrade', 'Management Tools', and 'Manage Freenom DNS'. A link to 'Back to Domains List' is also present.

The screenshot shows the Plesk web host edition interface. The top navigation bar shows the user is logged in as 'mcaproject'. The main content area displays the domain 'hospica.ga' with the following details:

- Website at:** httpdocs/ | **IP address:** 192.168.6.253 | **System user:** jintuthomas
- Hosting Settings:** Open, Preview, Suspend, Disable, Description

The left sidebar contains links for Websites & Domains, Mail, Files, Databases, File Sharing, Statistics, My Profile, WordPress, and SEO Toolkit. The right sidebar shows options like Backup Manager, Databases, Webspaces, and WordPress. The bottom navigation bar shows the Windows taskbar with various icons and the date/time as 28-05-2019.

Step 4: Go to Menu > Databases. Choose database name, related site and create database user as well as password.

Databases for comparecar.ml ...

Here you can create new or manage existing databases.

+ Add Database

No items found.

User Management
Backup Manager

General

Database name* admin_cardeals

Database server localhost:3306 (default for MySQL, v5.7.25)

Related site hospica.ga

Users

Create a default database user. Plesk will access the database on behalf of this user. If no database users are assigned to the database, it is not accessible.

Create a database user

Database user name*

New password*

Confirm password*

User has access to all databases within the selected subscription

Access control

Allow local connections only
 Allow remote connections from any host
 Allow remote connections from

Please contact your hosting provider and make sure that the option you specified above will comply with the current firewall rules for incoming access to MySQL.

* Required fields

OK Cancel

The screenshot shows the Plesk web host edition interface. On the left, a sidebar lists various management sections: Websites & Domains, Mail, Files, Databases (selected), File Sharing, Statistics, My Profile, WordPress, and SEO Toolkit. The main content area is titled "Databases for hospica.ga" and displays a message: "Information: The database admin_cardeals was created." Below this, there's a summary for the database "admin_doctor": Host: localhost:3306 (MySQL), Users: cardeals, Tables: 0, Size: 0 B. A "phpMyAdmin" link is present. To the right, there are several actions: Connection info, Copy, Import Dump (highlighted with a green checkmark), Check and Repair, Move to Webspace, and Remove Database.

The screenshot shows the phpMyAdmin interface for the database "admin_cardeals". The top navigation bar includes tabs for Structure, SQL, Search, Query, Export, Import, Operations, Routines, Events, Triggers, and Designer. The main content area is titled "Importing into the database \"admin_cardeals\"". It contains several configuration sections: "File to import" (with a "Choose File" button and a note about file formats), "Partial import" (with options for interruption and query skipping), "Other options" (with a checked checkbox for foreign key checks), and "Format" (set to "SQL"). At the bottom, there's a "Console specific options:" section.

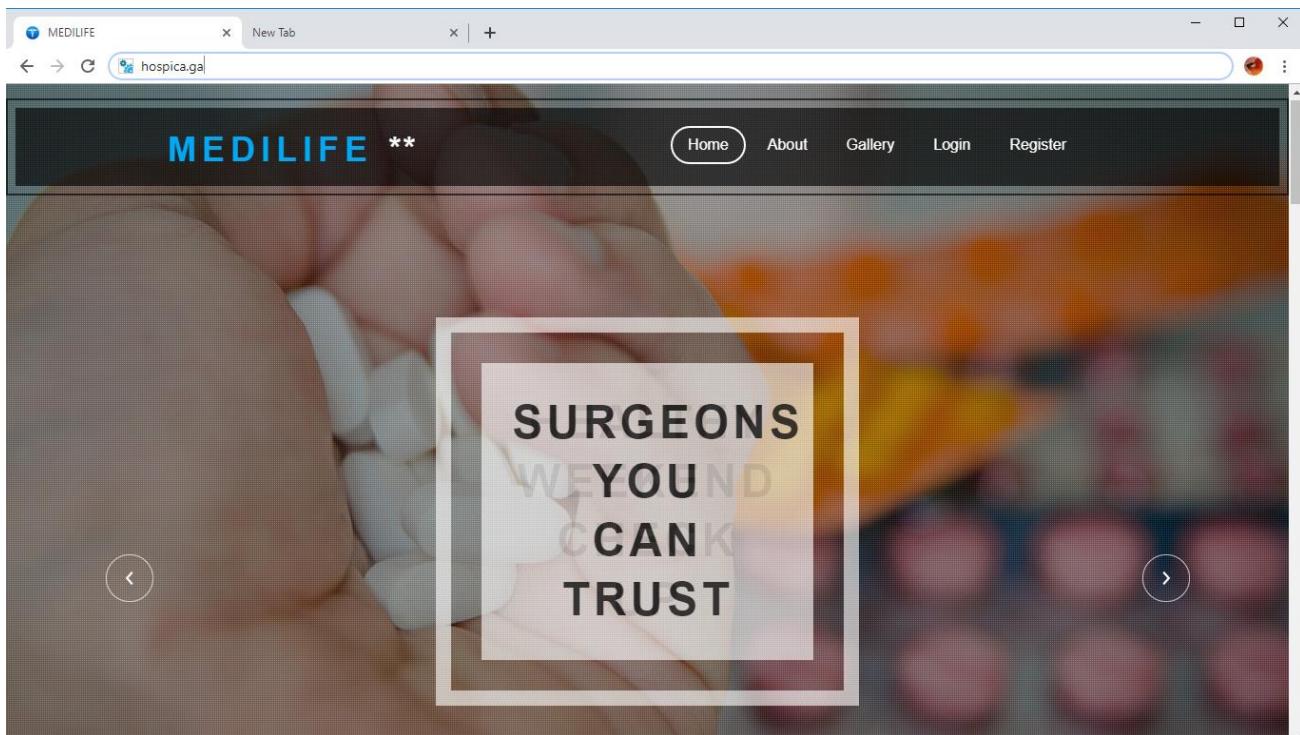
Once completed, Import your database file(.sql) to database. Click on *Import Dump*

Step 5: In the File Manager, Upload the files

The screenshot shows the Plesk web host edition interface. On the left, a sidebar lists various management sections like Websites & Domains, Mail, Files, Databases, etc. The 'Files' section is selected and highlighted in blue. The main area is titled 'File Manager for hospica.ga'. It shows a tree view of the directory structure under 'Home directory': .plesk, cgi-bin, error_docs, httpdocs (which is selected and highlighted in blue), and logs. To the right of the tree view is a toolbar with icons for Upload, New, Copy, Move, Remove, Extract Files, Add to Archive, and Settings. Below the toolbar is a breadcrumb navigation path: Home directory > httpdocs. A table lists the contents of the httpdocs folder, including files like .., App_Data, css, img, test, .user.ini, favicon.ico, index.html, and web.config, along with their modified dates and sizes. A progress bar at the bottom indicates the upload status: 'Uploading Files...' and '0 of 1 files were uploaded'.

This screenshot continues from the previous one, showing the upload progress. A large modal window is centered over the file manager interface, displaying a progress bar with the message 'Uploading Files...'. The progress bar shows '0 of 1 files were uploaded' and '100% completed'. The file being uploaded is 'hospica.zip' with a size of '65.2 MB'. A 'Cancel' button is visible at the bottom of the modal. The background of the file manager interface remains visible, showing the same directory structure and table of files as in the previous screenshot.

Our Project is now Hosted on GCP.



1.2 AWS (AMAZON WEB SERVICES)

1.2.1 INTRODUCTION AMAZON WEB SERVICES CLOUD

In 2006, Amazon Web Services (AWS) began offering IT infrastructure services to businesses in the form of web services -- now commonly known as cloud computing. One of the key benefits of cloud computing is the opportunity to replace up-front capital infrastructure expenses with low variable costs that scale with your business. With the Cloud, businesses no longer need to plan for and procure servers and other IT infrastructure weeks or months in advance. Instead, they can instantly spin up hundreds or thousands of servers in minutes and deliver results faster.

Today, Amazon Web Services provides a highly reliable, scalable, low-cost infrastructure platform in the cloud that powers hundreds of thousands of businesses in 190 countries around the world. With data center locations in the U.S., Europe, Brazil, Singapore, Japan, and Australia, customers across all industries are taking advantage of the following benefits:

Low Cost

AWS offers low, pay-as-you-go pricing with no up-front expenses or long-term commitments. We are able to build and manage a global infrastructure at scale and pass the cost saving benefits onto you in the form of lower prices. With the efficiencies of our scale and expertise, we have been able to lower our prices on 15 different occasions over the past four years. Visit the Economics Centre to learn more.

Agility and Instant Elasticity

AWS provides a massive global cloud infrastructure that allows you to quickly innovate, experiment and iterate. Instead of waiting weeks or months for hardware, you can instantly deploy new applications, instantly scale up as your workload grows, and instantly scale down based on demand. Whether you need one virtual server or thousands, whether you need them for a few hours or 24/7, you still only pay for what you use. Visit the Architecture Centre to learn more.

Open and Flexible

AWS is a language and operating system agnostic platform. You choose the development platform or programming model that makes the most sense for your business. You can choose which services you use, one or several, and choose how you use them. This flexibility allows you to focus on innovation, not infrastructure. Download the AWS Overview Whitepaper.

Secure

AWS is a secure, durable technology platform with industry-recognized certifications and audits: PCI DSS Level 1, ISO 27001, FISMA Moderate, FedRAMP, HIPAA, and SOC 1 (formerly referred to as SAS 70 and/or SSAE 16) and SOC 2 audit reports. Our services and data centers have multiple layers of operational and physical security to ensure the integrity and safety of your data. Visit the Security Centre to learn more.

Solutions

The AWS cloud computing platform provides the flexibility to launch your application regardless of your use case or industry. Learn more about popular solutions customers are running on AWS.

Application Hosting

Use reliable, on-demand infrastructure to power your applications, from hosted internal applications to SaaS offerings.

Websites

Satisfy your dynamic web hosting needs with AWS's scalable infrastructure platform.

Backup and Storage

Store data and build dependable backup solutions using AWS's inexpensive data storage services.

Enterprise IT

Host internal- or external-facing IT applications in AWS's secure environment.

Content Delivery

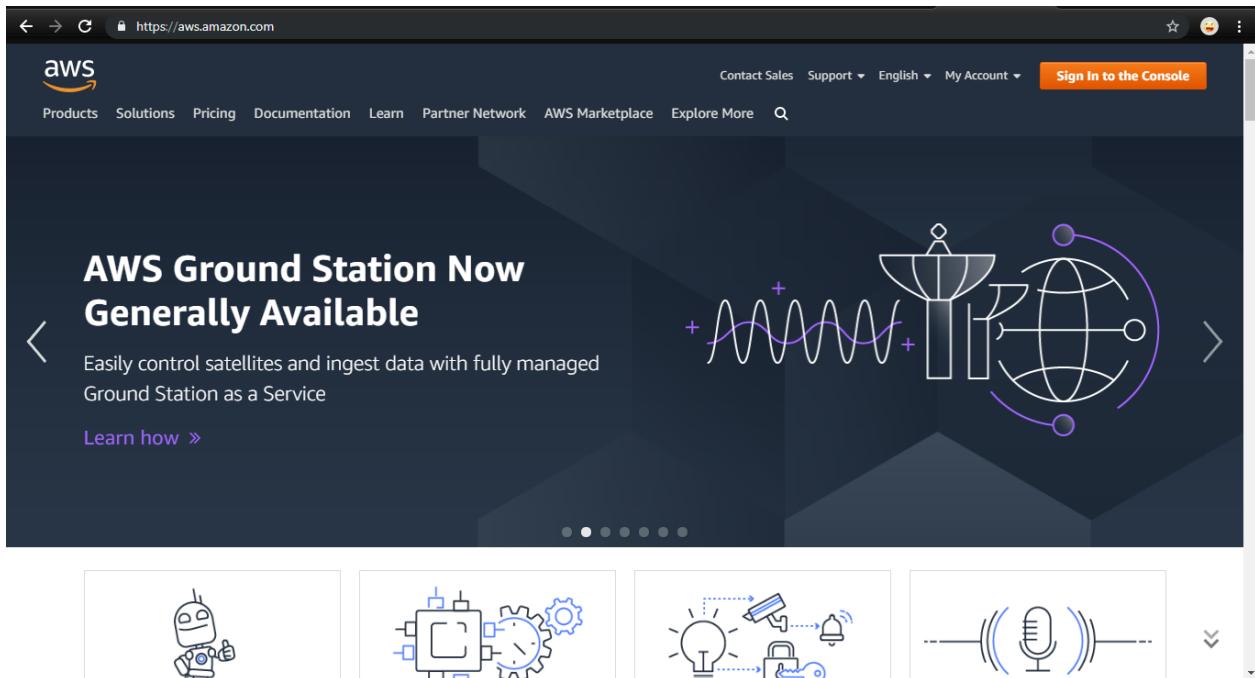
Quickly and easily distribute content to end users worldwide, with low costs and high data transfer speeds.

Databases

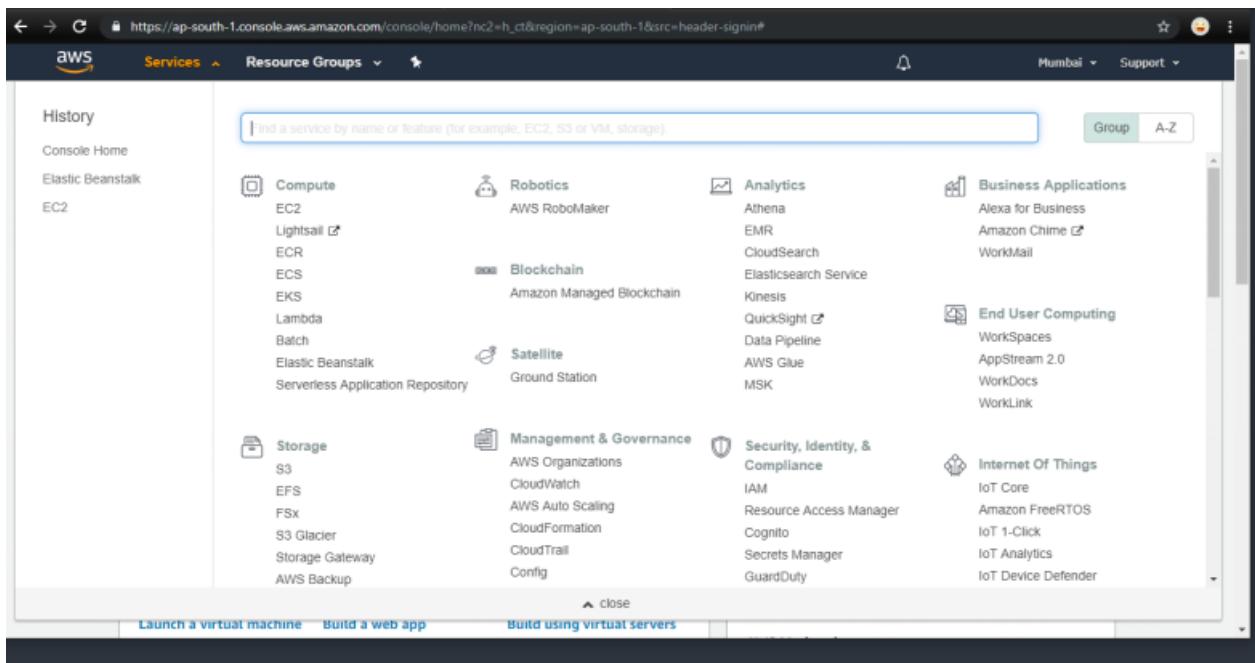
Take advantage of a variety of scalable database solutions, from hosted enterprise database software or non-relational database solutions.

Get Started

- **Sign up for AWS,** by signing up for AWS, you have access to Amazon's cloud computing services.



- Once you successfully logged in, you will be redirected to AWS Dashboard.

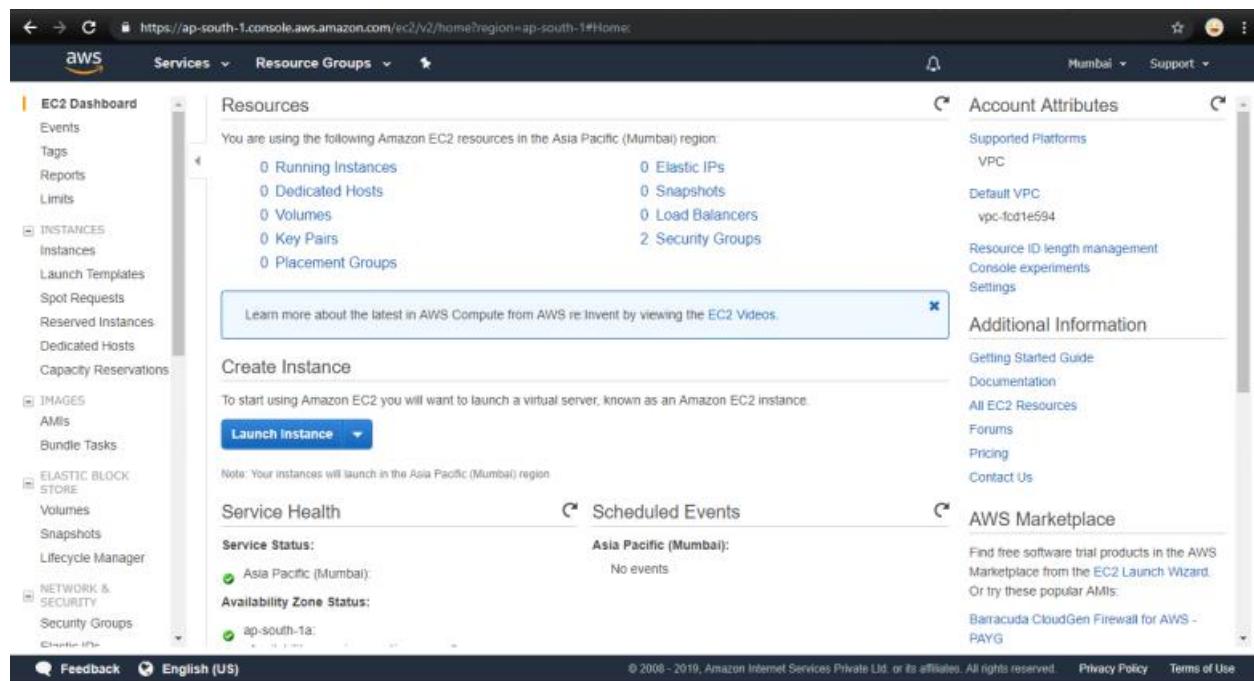


1.2.2 AMAZON ELASTIC COMPUTE CLOUD (EC2)

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.

Amazon EC2's simple web service interface allows you to obtain and configure capacity with minimal friction. It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment. Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change. Amazon EC2 changes the economics of computing by allowing you to pay only for capacity that you actually use. Amazon EC2 provides developers the tools to build failure resilient applications and isolate them from common failure scenarios.

Step 1: Go to EC2 Console and then press 'Launch Instance'



Step 2: We are Creating a Windows Server Instance

The screenshot shows the AWS EC2 Dashboard. On the left sidebar, under 'INSTANCES', there are options like Instances, Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, and Capacity Reservations. Under 'IMAGES', there are AMIs and Bundle Tasks. Under 'ELASTIC BLOCK STORE', there are Volumes and Snapshots. Under 'NETWORK & SECURITY', there are Security Groups. At the bottom of the sidebar, there are 'Feedback' and 'English (US)' buttons.

The main content area has a heading 'Resources' with a message: 'You are using the following Amazon EC2 resources in the Asia Pacific (Mumbai) region: 0 Running Instances, 0 Dedicated Hosts, 0 Volumes, 0 Key Pairs, 0 Elastic IPs, 0 Snapshots, 0 Load Balancers, 2 Security Groups'. Below this is a 'Learn more about the latest in AWS Compute from AWS re:Invent by viewing the EC2 Videos.' button.

The 'Create Instance' section contains a 'Launch Instance' button. Below it, a note says: 'Note: Your instances will launch in the Asia Pacific (Mumbai) region'. To the right, there's a 'Service Health' section showing 'Service Status: Asia Pacific (Mumbai): Asia Pacific (Mumbai)' and 'Availability Zone Status: ap-south-1a: ap-south-1a'. There's also a 'Scheduled Events' section stating 'No events'.

On the right side, there are sections for 'Account Attributes' (Supported Platforms: VPC, Default VPC: vpc-fdfe594), 'Additional Information' (Getting Started Guide, Documentation, All EC2 Resources, Forums, Pricing, Contact Us), and 'AWS Marketplace' (Find free software trial products in the AWS Marketplace from the EC2 Launch Wizard, Or try these popular AMIs: Barracuda CloudGen Firewall for AWS - PAYG).

At the bottom, there are copyright notices: '© 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.', 'Privacy Policy', and 'Terms of Use'.

Step 3: Continue the Installation Step as follows

The screenshot shows the 'Launch Instance Wizard' step 1: Choose AMI. The top navigation bar includes 'Services', 'Resource Groups', and a progress bar: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, 7. Review. There are 'Cancel and Exit' and 'Next Step' buttons.

The main content area has a heading 'Step 1: Choose an Amazon Machine Image (AMI)'. It states: 'An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.' Below this is a search bar: 'Search for an AMI by entering a search term e.g. "Windows"'.

A 'Quick Start' sidebar lists: 'My AMIs', 'Amazon Linux' (Free tier eligible), 'Community AMIs', and 'Free tier only' (with a question mark icon). The main list shows three AMI options:

- Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-00e782930f1c3dbc7**
Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Select button (64-bit (x86))
- Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0eacc5b7915ba9921**
The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Select button (64-bit (x86))
- Red Hat Enterprise Linux 7.5 (HVM), SSD Volume Type - ami-5b673c34**
Red Hat Enterprise Linux version 7.5 (HVM), EBS General Purpose (SSD) Volume Type
Select button (64-bit (x86))

At the bottom, there are 'Feedback' and 'English (US)' buttons.

<https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:2>

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

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<https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:3>

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	1	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot Instances	
Network	vpc-fcd1e594 (default)	<input type="button"/> Create new VPC
Subnet	No preference (default subnet in any Availability Zone)	<input type="button"/> Create new subnet
Auto-assign Public IP	Use subnet setting (Enable)	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	Open	<input type="button"/> Create new Capacity Reservation
IAM role	None	<input type="button"/> Create new IAM role
Shutdown behavior	Stop	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	

Cancel Previous Review and Launch Next: Add Storage

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<https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:4>

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0a2e90a694c110c0c	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/> Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

Cancel Previous Review and Launch Next: Add Tags

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<https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:5>

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. Learn more about tagging your Amazon EC2 resources.

Key	(127 characters maximum)	Value	(255 characters maximum)	Instances	Volumes
This resource currently has no tags					

Choose the Add tag button or click to add a Name tag. Make sure your IAM policy includes permissions to create tags.

Add Tag (Up to 50 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:

- Create a new security group
- Select an existing security group

Security group name: launch-wizard-2

Description: launch-wizard-2 created 2019-05-29T23:33:38.301+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom	0.0.0.0/0 e.g. SSH for Admin Desktop

Add Rule

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel **Previous** **Review and Launch**

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0eacc5b7915ba9921

Free tier eligible The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.
Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Security Groups

Edit security groups

Cancel **Previous** **Launch**

Step 4: Create a New Key Pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

I acknowledge that I have access to the selected private key file (*.pem), and that without this file, I won't be able to log into my instance.

Step 5: The Instance will be Created.

Your instances are now launching
The following instance launches have been initiated: i-03bee308aab8f5dea [View launch log](#)

Get notified of estimated charges
Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances
Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.
Click [View Instances](#) to monitor your instances' status. Once your instances are in the **running** state, you can [connect](#) to them from the Instances screen. [Find out](#) how to connect to your instances.

Here are some helpful resources to get you started

- How to connect to your Linux instance
- Learn about AWS Free Usage Tier
- Amazon EC2: User Guide
- Amazon EC2: Discussion Forum

While your instances are launching you can also

The screenshot shows the AWS EC2 Instances page. On the left sidebar, under the 'Instances' section, 'Instances' is selected. The main table lists one instance: i-03bee308aab8f6dea, which is a t2.micro type running in the ap-south-1b availability zone. The instance state is 'running'. Below the table, a detailed view for the selected instance shows its ID, public DNS, and public IP.

You can remove the instance by selecting the instance and choose stop then terminate from instance state from dropdown.

You can remove the instance by selecting the instance and choose stop then terminate from instance state from dropdown.

The screenshot shows the same AWS EC2 Instances page as before. A context menu is open over the instance row for 'i-03bee308aab8f6dea'. The 'Actions' dropdown is expanded, and the 'Instance State' option is selected, revealing a submenu with 'Start', 'Stop', 'Stop - Hibernate', 'Reboot', and 'Terminate' options. The 'Terminate' option is highlighted.

1.2.3 AMAZON SIMPLE STORAGE SERVICE (S3)

Amazon S3 is a web service offered by Amazon Web Services. Amazon S3 provides storage through web services interfaces. S3 is a scalable, high-speed, low-cost, web-based cloud storage service designed for online backup and archiving of data and application programs. S3 was designed with a minimal feature set and created to make web-scale computing easier for developers. Amazon S3 is an object storage service, which differs from block and file cloud storage. Each object is stored as a file with its metadata included and given an ID number. Applications use this ID number to access an object. Unlike file and block cloud storage, a developer can access an object via a rest API.

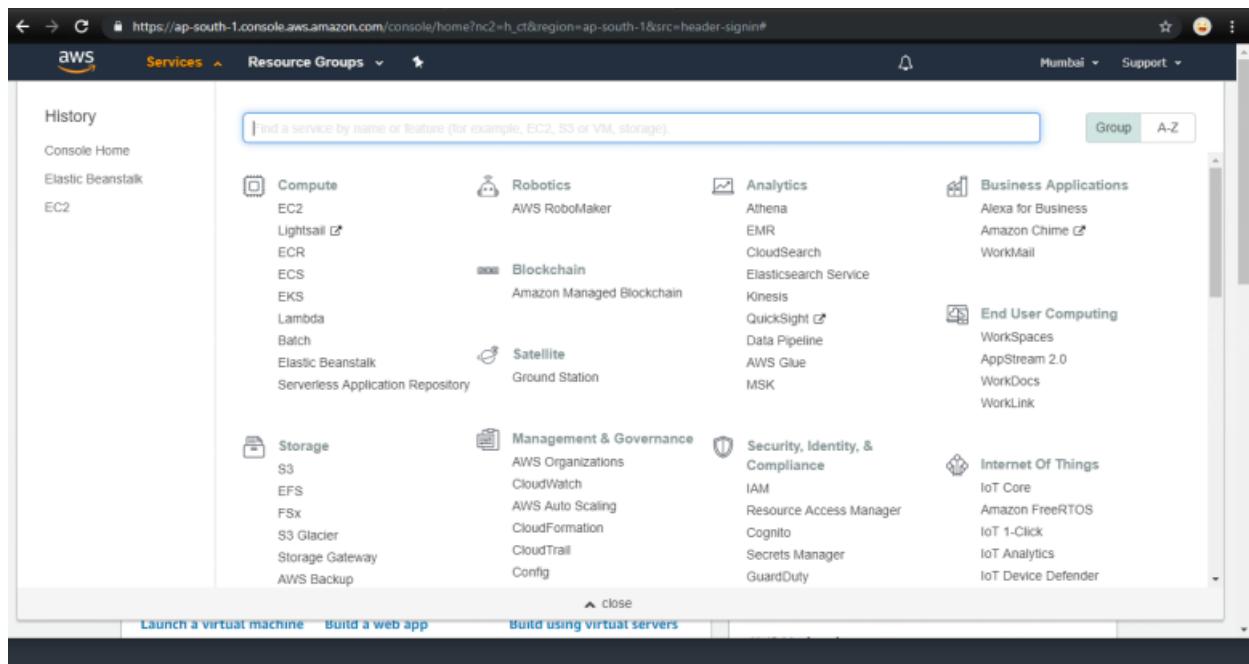
The S3 cloud storage service gives a subscriber access to the same systems that Amazon uses to run its own websites. S3 enables a customer to upload, store and download practically any file or object that is up to five gigabytes (5 GB) in size. Amazon S3 comes in two storage classes: S3 Standard and S3 Infrequent Access. S3 Standard is suitable for frequently accessed data that needs to be delivered with low latency and high throughput. S3 Standard targets applications, dynamic websites, content distribution and big data workloads. S3 Infrequent Access offers a lower storage price for backups and long-term data storage.



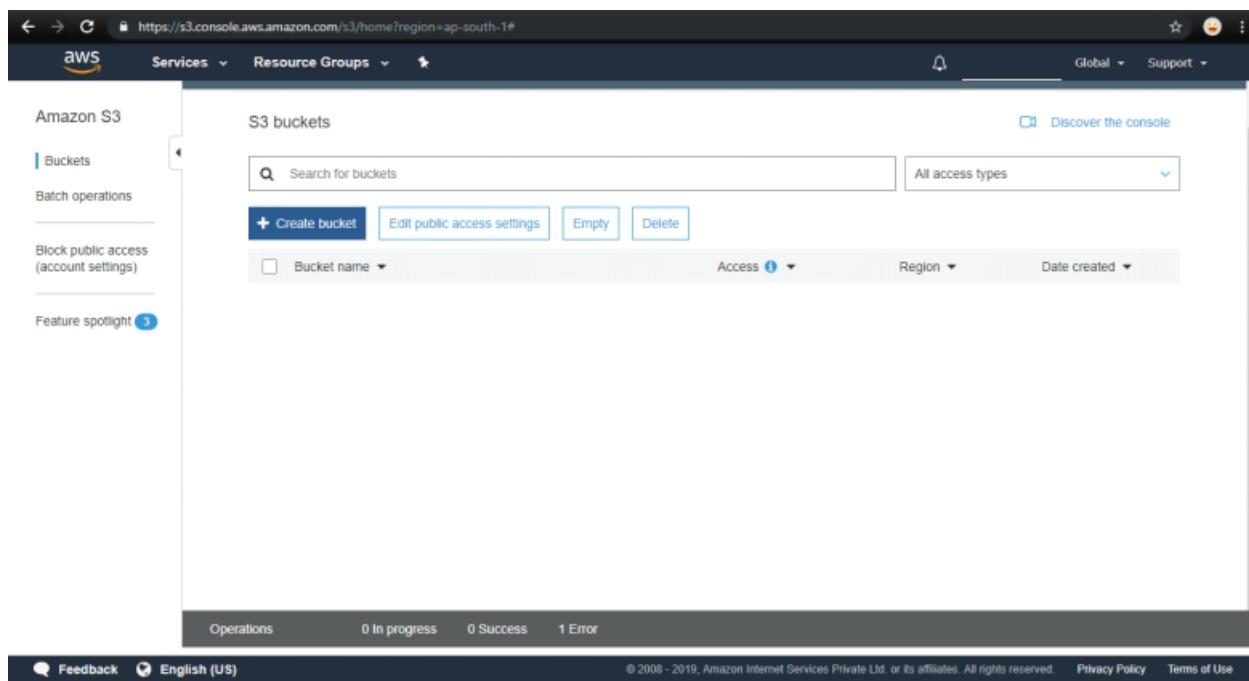
Companies today need the ability to simply and securely collect, store, and analyze their data at a massive scale. Amazon S3 is object storage built to store and retrieve any amount of data from anywhere – web sites and mobile apps, corporate applications, and data from IoT sensors or

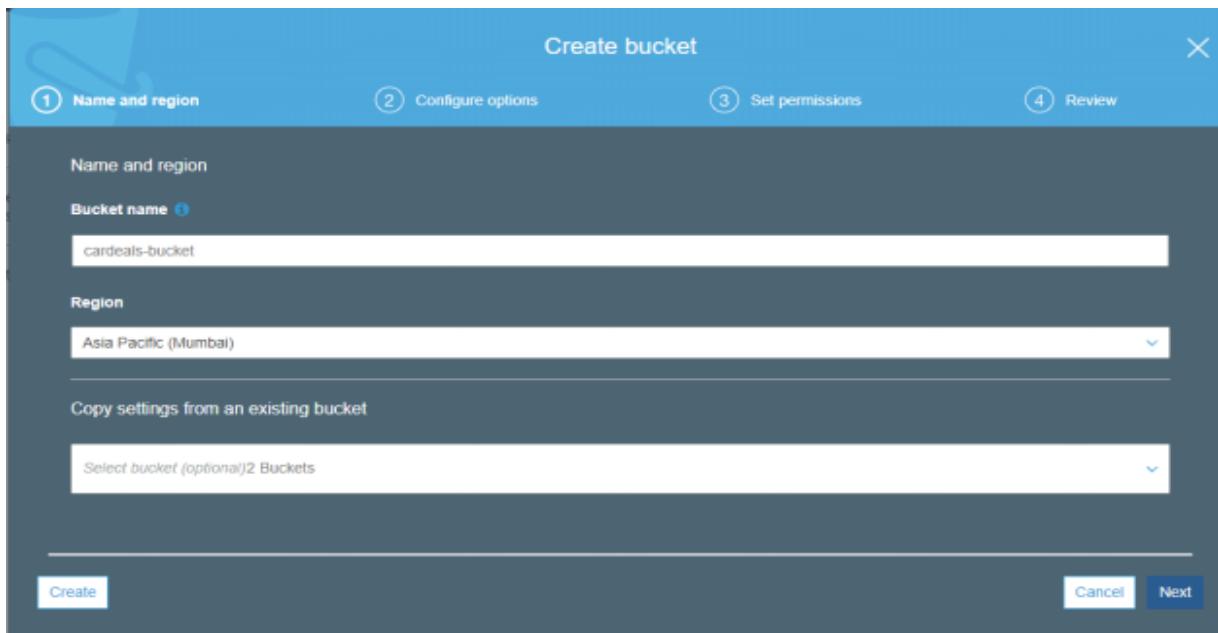
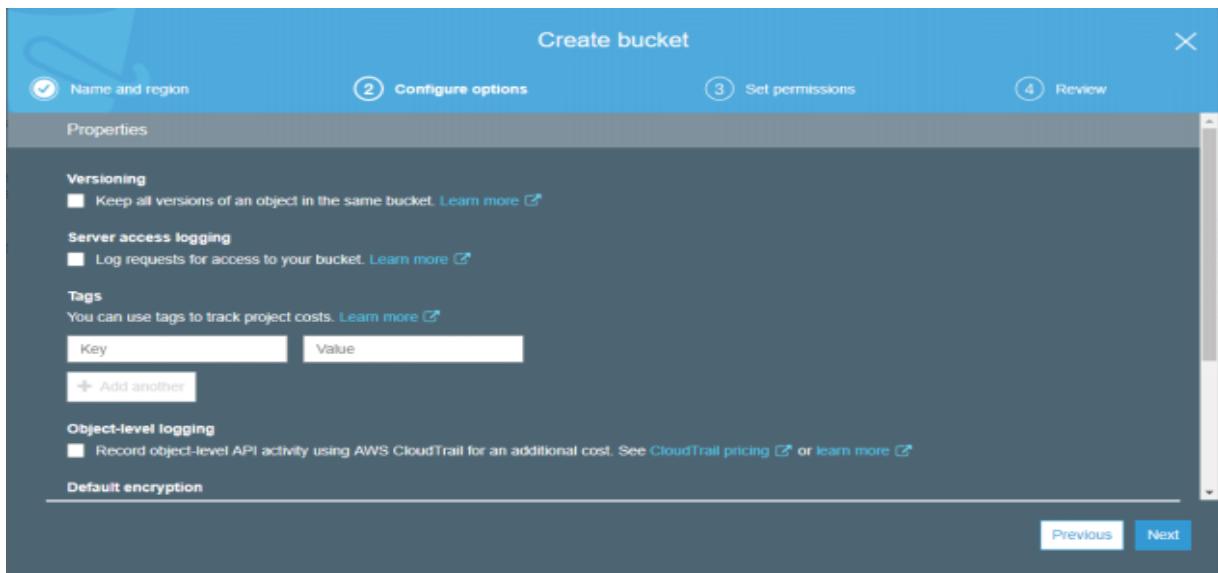


Step 1: Login into the AWS platform

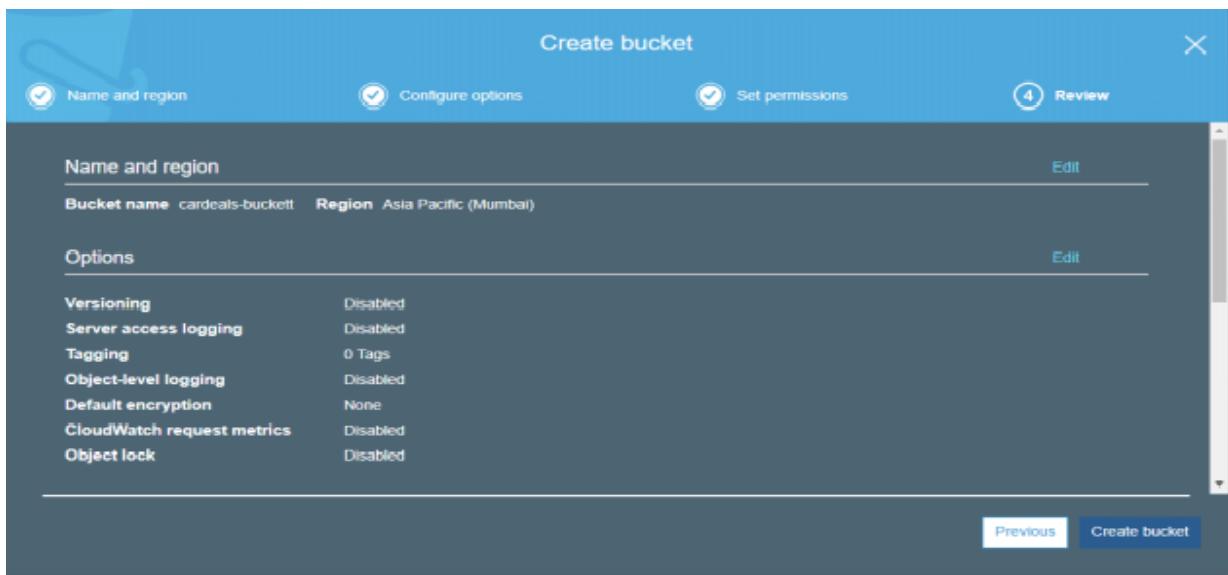


Step 2: We are going to create an Amazon S3 Bucket

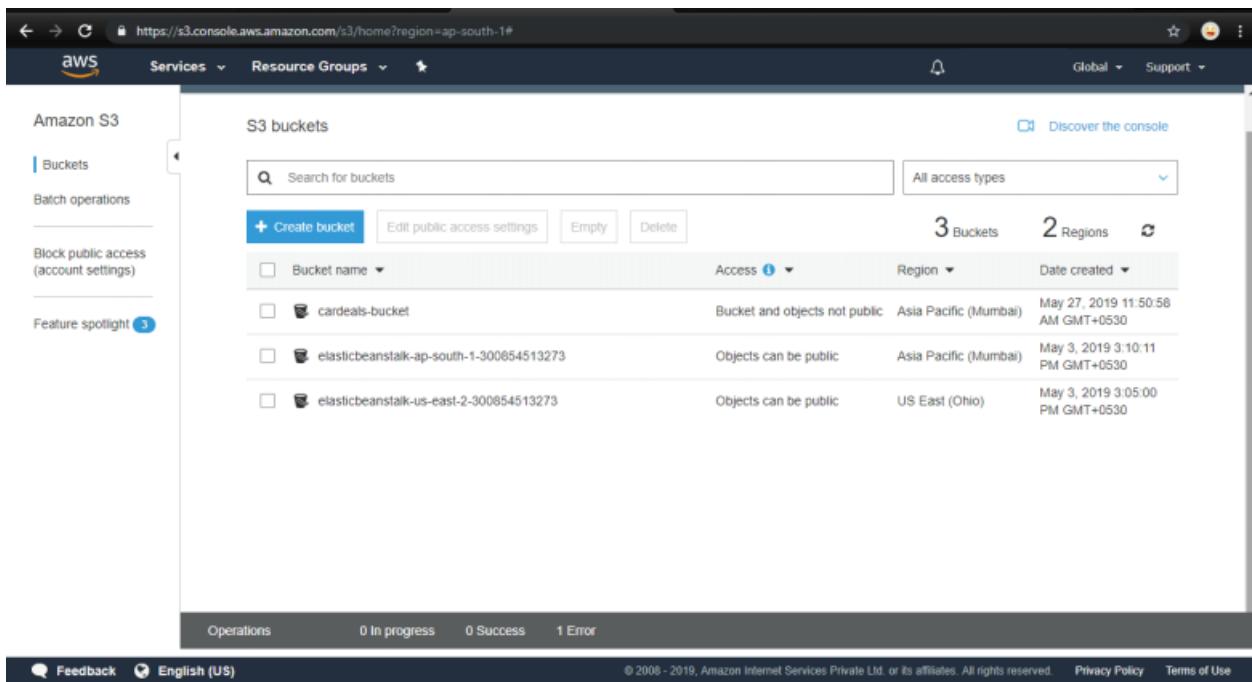


a. Provide Bucket name**b. Set Properties and permissions**

c. Review the Changes



d. Our Bucket has been created

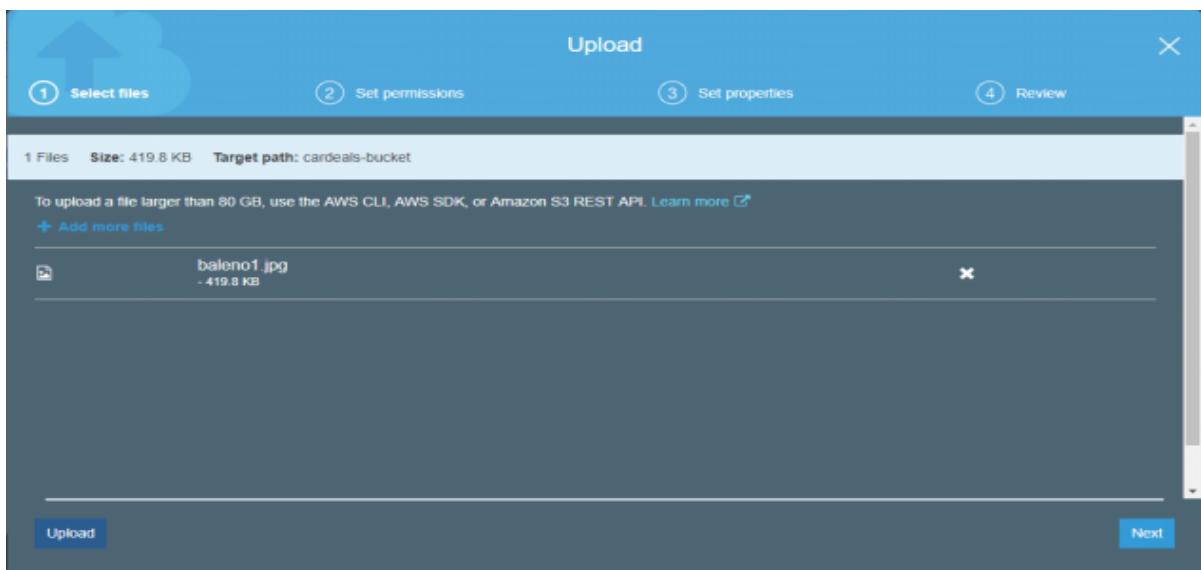


Step 3: We can upload files to this Bucket.

The screenshot shows the AWS S3 console interface. At the top, the URL is https://s3.console.aws.amazon.com/s3/buckets/cardeals-bucket/?region=ap-south-1&tab=overview. The navigation bar includes 'Services' (dropdown), 'Resource Groups' (dropdown), 'Global' (dropdown), and 'Support'. Below the navigation, the path 'Amazon S3 > cardeals-bucket' is shown. A tab bar at the top of the main content area includes 'Overview' (selected), 'Properties', 'Permissions', and 'Management'. Below the tab bar are buttons for 'Upload' (blue), 'Create folder' (blue), 'Download' (white), and 'Actions' (dropdown). The main content area displays the message 'This bucket is empty. Upload new objects to get started.' Below this message are three icons: a bucket icon labeled 'Upload an object', a user icon with a plus sign labeled 'Set object properties', and a database icon with a gear labeled 'Set object permissions'. At the bottom of the page, there is a footer with 'Operations' (0 In progress, 0 Success, 1 Error), copyright information (© 2008–2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.), and links for 'Feedback', 'English (US)', 'Privacy Policy', and 'Terms of Use'.

The screenshot shows the 'Upload' wizard step 1: 'Select files'. The title bar says 'Upload' and shows the steps: 1. Select files, 2. Set permissions, 3. Set properties, 4. Review. The main area has instructions: 'To upload a file larger than 80 GB, use the AWS CLI, AWS SDK, or Amazon S3 REST API. Learn more'. It features a large blue 'Drag and drop files and folders here' button with a white folder icon. Below it is the text 'OR' and a blue 'Add files' button. At the bottom left is a grey 'Upload' button, and at the bottom right is a grey 'Next Step' button.

- a. Just drag and drop the files, that we need to upload.

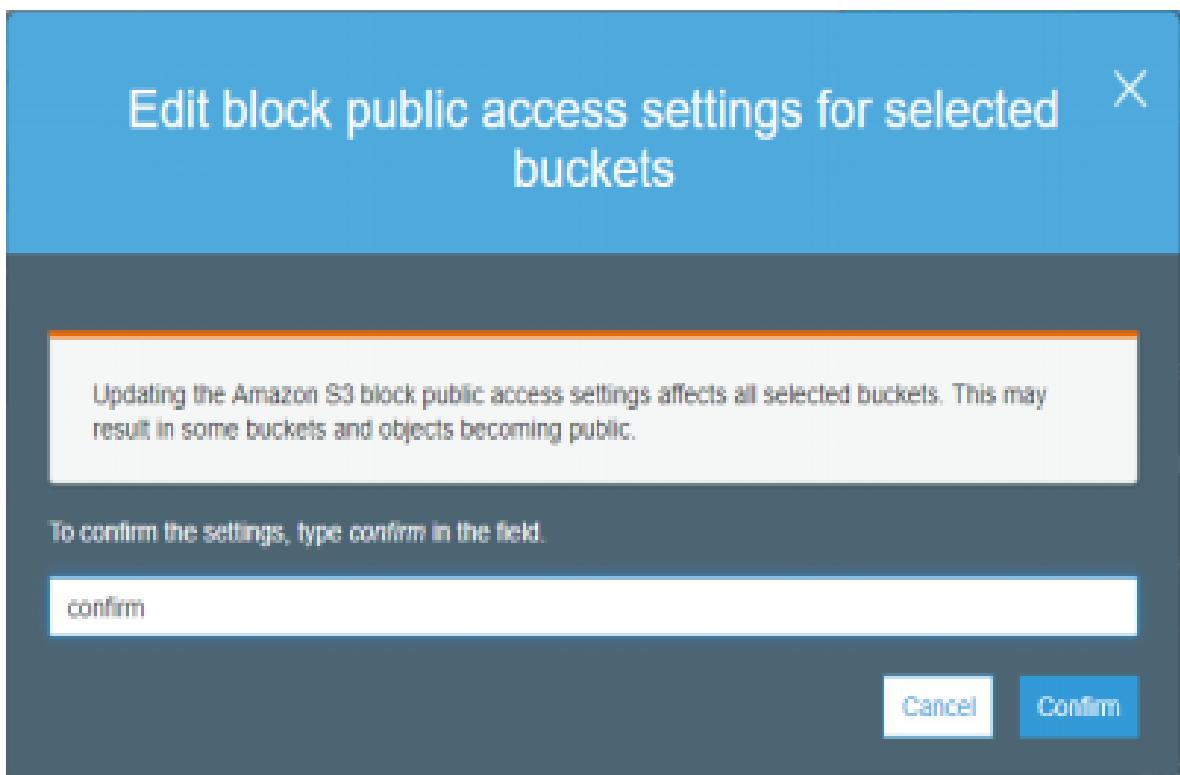
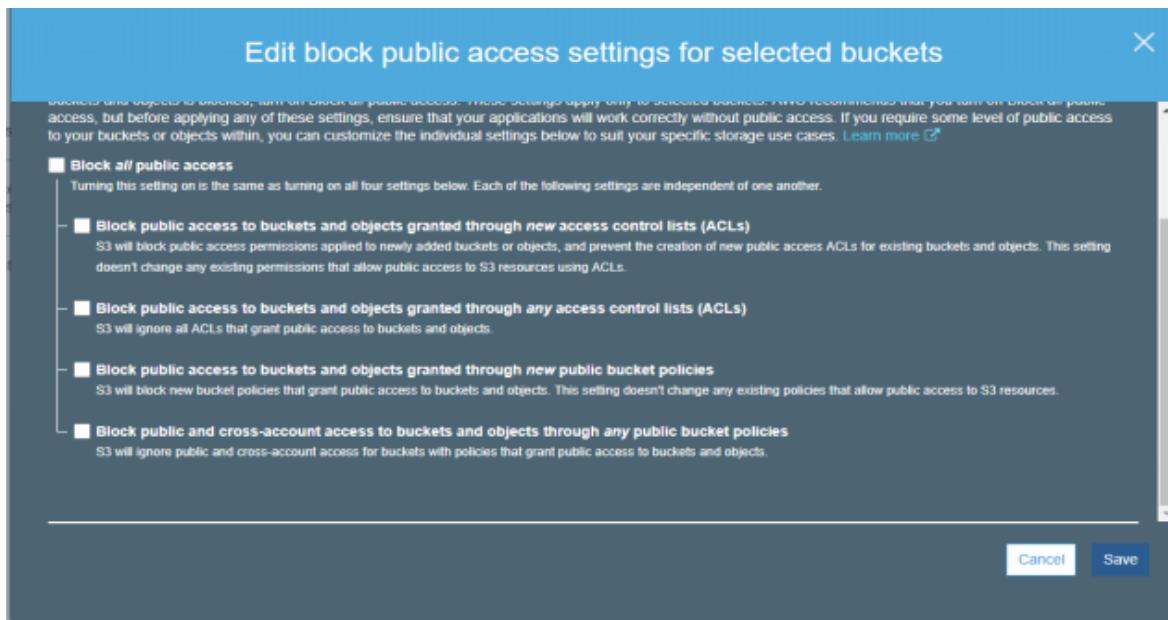


- b. We have to set the permissions. Otherwise it will not be publicly available.

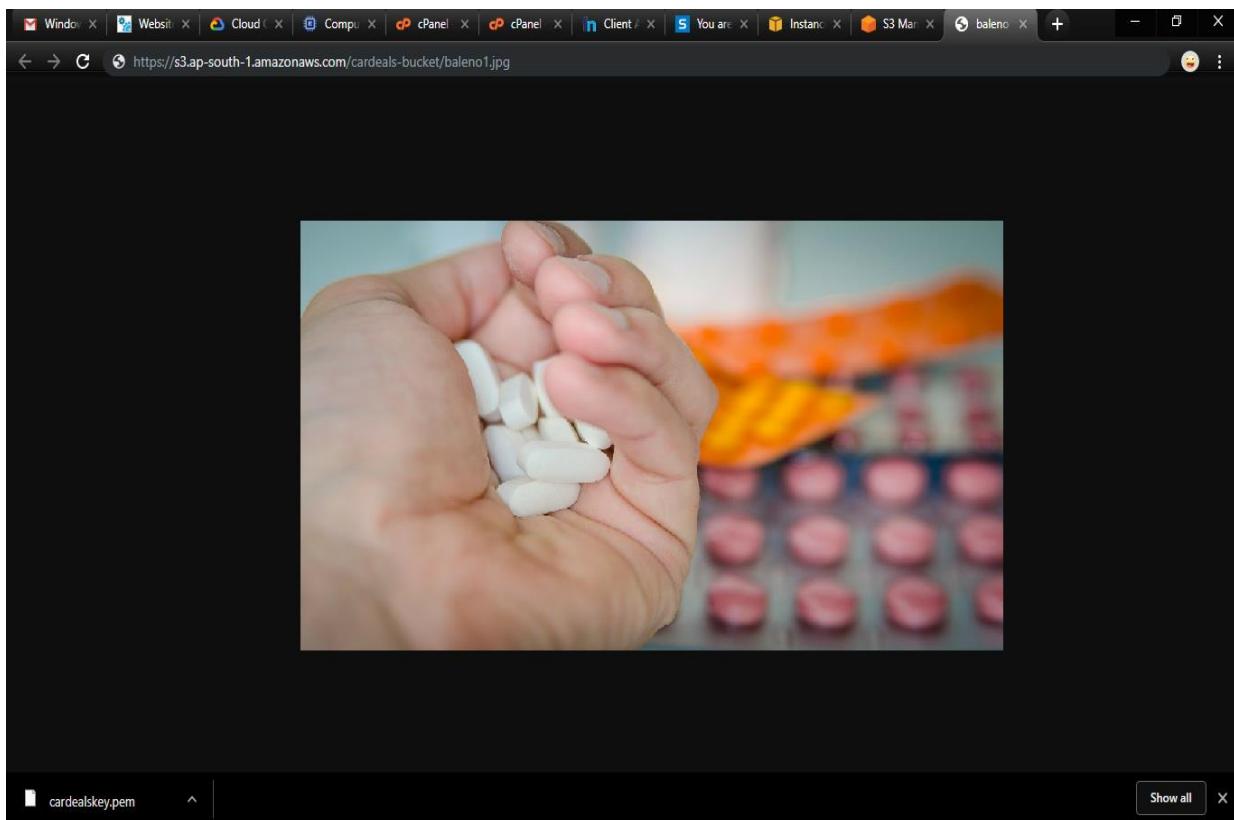
A screenshot of the AWS S3 object details page for 'baleno1.jpg'. The URL in the address bar is 'https://s3.console.aws.amazon.com/s3/object/cardeals-bucket/baleno1.jpg?region=ap-south-1&tab=overview'. The top navigation bar shows 'Services' and 'Resource Groups'. The main content area has tabs: 'Overview' (selected), 'Properties', 'Permissions', and 'Select from'. Below these are buttons: 'Open', 'Download', 'Download as', 'Make public', and 'Copy path'. The 'Permissions' tab is currently active. It displays the following details:

- Owner:** 5cef97e8baef68513ceac08d26f9cc2d59d28791e58764e746b3346322435999
- Last modified:** May 27, 2019 11:53:01 AM GMT+0530
- Etag:** c07a41d2dde72ebcef6d093f96eaedac
- Storage class:** Standard
- Server-side encryption:** None
- Size:** 419.8 KB
- Key:** baleno1.jpg
- Object URL:** <https://s3.ap-south-1.amazonaws.com/cardeals-bucket/baleno1.jpg>

At the bottom, there are links for 'Feedback', 'English (US)', and copyright information: '© 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.' and 'Privacy Policy' and 'Terms of Use'.



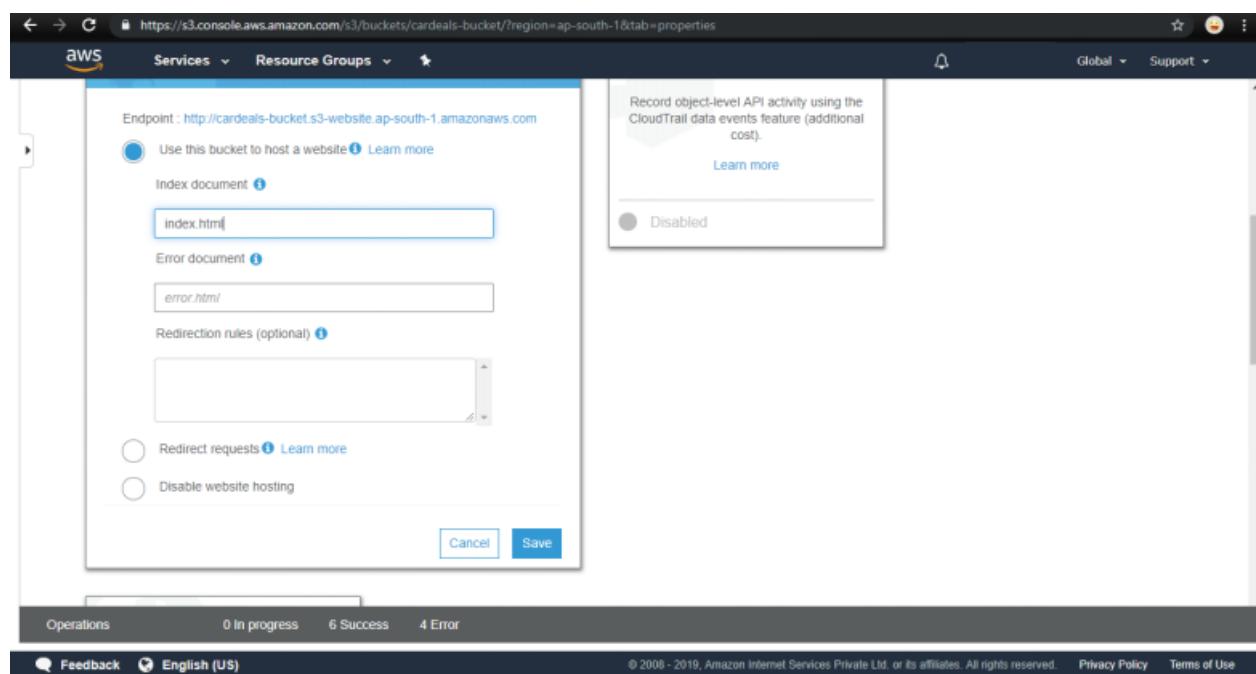
Then the file will be publicly available



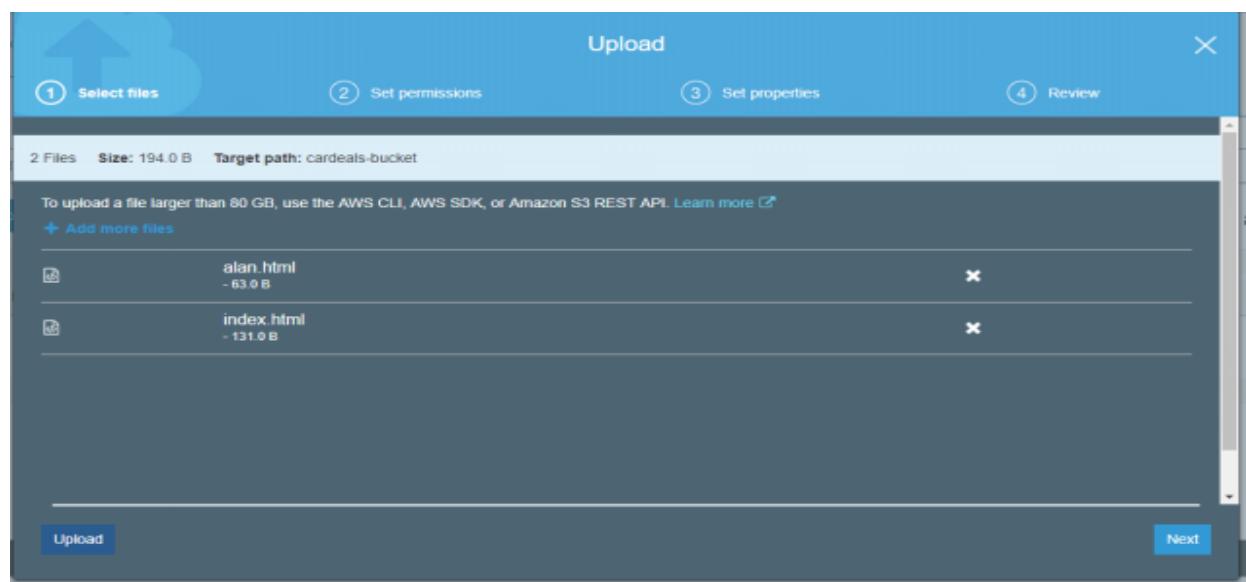
Step 4: For the purpose of hosting a Website we create another Bucket

A screenshot of the AWS S3 console. The URL in the address bar is https://s3.console.aws.amazon.com/s3/buckets/cardeals-bucket/?region=ap-south-1&tab=properties. The page shows the 'Properties' tab selected. There are six configuration sections: 'Versioning' (disabled), 'Server access logging' (enabled), 'Static website hosting' (disabled), 'Object-level logging' (disabled), and 'Default encryption' (disabled). At the bottom, there are tabs for 'Operations' (0 in progress, 4 Success, 4 Error) and links for 'Feedback', 'English (US)', 'Privacy Policy', and 'Terms of Use'. The footer contains a copyright notice: © 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.

Specify the name of the Index document and Error document. Save it.



Upload the Index document and Error Document.



Now you can access the static site by the url provided here:

The screenshot shows the AWS S3 console with the URL <https://s3.console.aws.amazon.com/s3/buckets/cardeals-bucket/?region=ap-south-1&tab=properties>. The 'Website' tab is selected. The 'Endpoint' field contains <http://cardeals-bucket.s3-website.ap-south-1.amazonaws.com>. The 'Index document' field is set to 'index.html'. The 'Error document' field is set to 'error.html'. Under 'Redirection rules (optional)', there is an empty text area. Below these settings are three radio buttons: 'Use this bucket to host a website' (selected), 'Redirect requests', and 'Disable website hosting'. At the bottom are 'Cancel' and 'Save' buttons.

The screenshot shows a web browser window with the URL <https://s3.ap-south-1.amazonaws.com/cardeals-bucket/index.html>. The page content is 'Hello.....!' followed by 'Hi'.

1.2.4 AWS Elastic Beanstalk

AWS Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS.

You can simply upload your code and Elastic Beanstalk automatically handles the deployment, from capacity provisioning, load balancing, auto-scaling to application health monitoring. At the same time, you retain full control over the AWS resources powering your application and can access the underlying resources at any time.

There is no additional charge for Elastic Beanstalk - you pay only for the AWS resources needed to store and run your applications.

Benefits

a. Fast and Simple to Begin

Elastic Beanstalk is the fastest and simplest way to deploy your application on AWS. You simply use the AWS Management Console, a Git repository, or an integrated development environment (IDE) such as Eclipse or Visual Studio to upload your application, and Elastic Beanstalk automatically handles the deployment details of capacity provisioning, load balancing, auto-scaling, and application health monitoring. Within minutes, your application will be ready to use without any infrastructure or resource configuration work on your part.

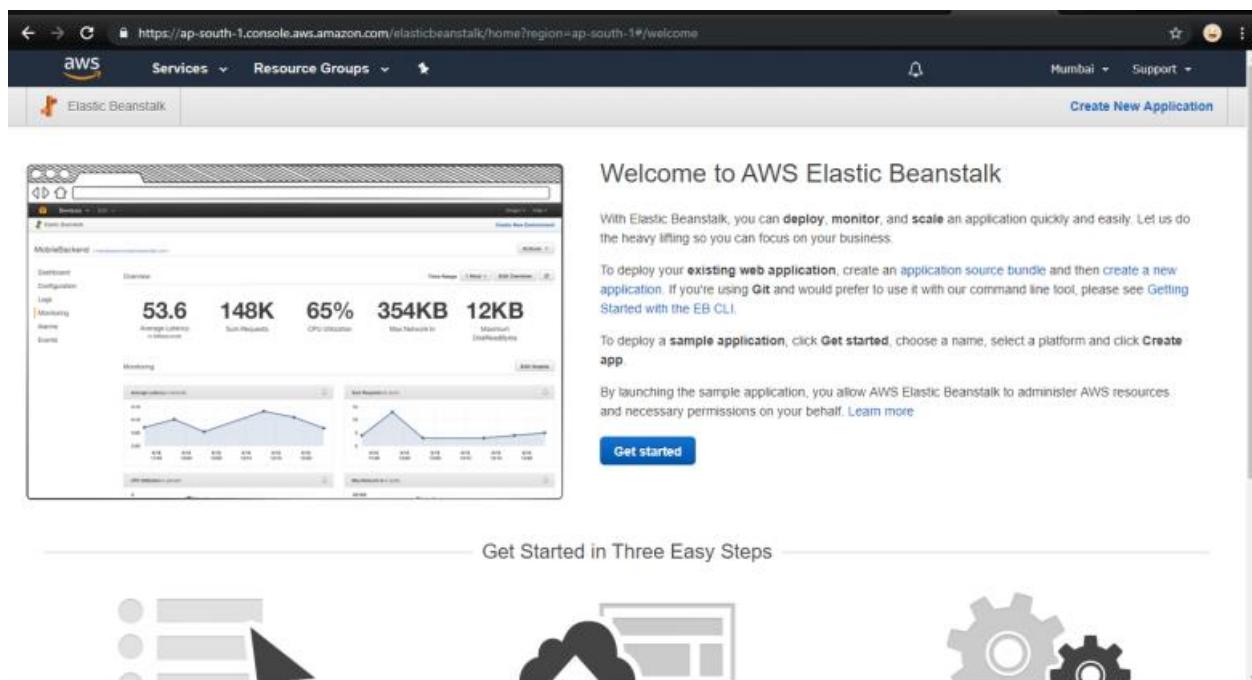
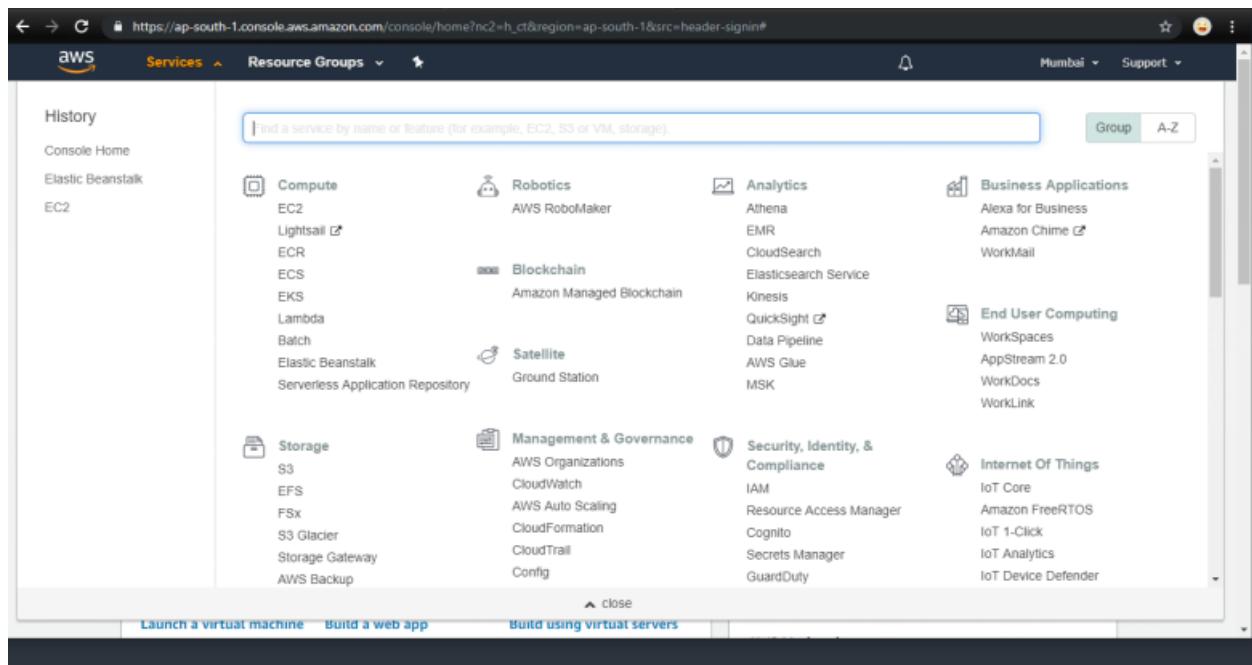
b. Impossible to Outgrow

Elastic Beanstalk automatically scales your application up and down based on your application's specific need using easily adjustable Auto Scaling settings. For example, you can use CPU utilization metrics to trigger Auto Scaling actions. With Elastic Beanstalk, your application can handle peaks in workload or traffic while minimizing your costs.

c. Developer Productivity

Elastic Beanstalk provisions and operates the infrastructure and manages the application stack (platform) for you, so you don't have to spend the time or develop the expertise. It will also keep the underlying platform running your application up-to-date with the latest patches and updates. Instead, you can focus on writing code rather than spending time managing and configuring servers, databases, load balancers, firewalls, and networks.

Step 1: Login to AWS and click Elastic Beanstalk



Step 2: Create Web App with Elastic Beanstalk

Choose the application name, select platform and you may upload the source code too.

Create a web app

Create a new application and environment with a sample application or your own code. By creating an environment, you allow AWS Elastic Beanstalk to manage AWS resources and permissions on your behalf. [Learn more](#)

Application information

Application name Up to 100 Unicode characters, not including forward slash (/).

Application tags

Base configuration

Platform Choose Configure more options for more platform configuration options.

Application code Sample application
Get started right away with sample code.
 Upload your code
Upload a source bundle from your computer or copy one from Amazon S3.

All Applications > cardeals > Cardeals-env (Environment ID: e-mjsswvznu)

Creating Cardeals-env
This will take a few minutes.

12:08am Environment health has transitioned to Pending. Initialization in progress (running for 14 seconds). There are no instances.

12:08am Created EIP: 13.235.47.165

12:08am Created security group named: awseb-e-mjsswvznu-stack-AWSEBSecurityGroup-11PXM9R6X5H2X

12:07am Using elasticbeanstalk-ap-south-1-300854513273 as Amazon S3 storage bucket for environment data.

12:07am createEnvironment is starting.

Learn More

- Get started using Elastic Beanstalk
- Modify the code
- Create and connect to a database
- Add a custom domain

Featured

- Create your own custom platform

Command Line Interface (v3)

- Installing the AWS EB CLI
- EB CLI Command Reference

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Beanstalk Web App has successfully created.

The screenshot shows the AWS Elastic Beanstalk console for the 'cardeals' application. The 'Overview' section displays a large green circle with a white checkmark, indicating 'Health Ok'. Below it, there's a 'Running Version' section for a 'Sample Application' using PHP 7.2. A 'Upload and Deploy' button is visible. To the left, a sidebar lists navigation options like Dashboard, Configuration, Logs, Health, Monitoring, Alarms, Managed Updates, Events, and Tags. The 'Recent Events' table contains the following log entries:

Time	Type	Details
2019-05-30 00:09:49 UTC+0530	INFO	Successfully launched environment: Cardeals-env
2019-05-30 00:09:49 UTC+0530	INFO	Application available at Cardeals-env.mkgacatb22.ap-south-1.elasticbeanstalk.com.
2019-05-30 00:09:36 UTC+0530	INFO	Added instance [i-02e500b7e0be8ca6a] to your environment.
2019-05-30 00:09:34 UTC+0530	INFO	Waiting for EC2 instances to launch. This may take a few minutes.

Step 3: Create Web App with Elastic Beanstalk

Click upload and deploy button on the dashboard.

Upload the source code for the web app.

The screenshot shows the 'Upload and Deploy' dialog box overlaid on the AWS Elastic Beanstalk console. The dialog box has fields for 'Upload application:' (with a 'Choose File' button) and 'Version label:' (with an empty input field). At the bottom are 'Cancel' and 'Deploy' buttons. In the background, the 'cardeals' application environment is shown with a green checkmark icon indicating 'Health Ok'. The 'Recent Events' table is visible, showing the same log entries as the previous screenshot.

Use the url displayed in the dashboard to access the beanstalk web app.

Beanstalk offers a number of options to configure the web app.

You Can modify the instance capacity or more.

The screenshot shows the AWS Elastic Beanstalk console with the URL <https://ap-south-1.console.aws.amazon.com/elasticbeanstalk/home?region=ap-south-1#/environment/configuration?applicationName=cardeals&environmentId=e-mjzsswvznu>. The left sidebar shows navigation options like Dashboard, Configuration, Logs, Health, Monitoring, Alarms, Managed Updates, Events, and Tags. The main content area is titled "Modify capacity" under "Auto Scaling Group". It includes fields for "Environment type" (set to "Single instance"), "Instances" (Min 1, Max 1), "Availability Zones" (set to "Any"), "Placement" (listing "ap-south-1a", "ap-south-1b", and "ap-south-1c"), and "Scaling cooldown" (set to 360 seconds).

1.2.5 AWS DB PRODUCTS

1.2.5.1 Amazon Relational Database Service (RDS)

Amazon Relational Database Service (Amazon RDS) is a web service that makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable capacity while managing time-consuming database administration tasks, freeing you up to focus on developing your applications.

Amazon RDS gives you access to the capabilities of a familiar MySQL, PostgreSQL, Oracle or Microsoft SQL Server database engine. This means that the code, applications, and tools you already use today with your existing databases can be used with Amazon RDS. Amazon RDS automatically patches the database software and backs up your database, storing the backups for a user-defined retention period and enabling point-in-time recovery. You benefit from the flexibility of being able to scale the compute resources or storage capacity associated with your Database Instance (DB Instance) via a single API call.

1.2.5.2 Amazon DynamoDB

DynamoDB is a fast, fully managed NoSQL database service that makes it simple and cost-effective to store and retrieve any amount of data and serve any level of request traffic. All data items are stored on Solid State Drives (SSDs) for high availability and durability.

1.2.5.3 Amazon ElastiCache

ElastiCache is a web service that makes it easy to deploy, operate, and scale an in-memory cache in the cloud. The service improves the performance of web applications by allowing you to retrieve information from fast, managed, in-memory caches, instead of relying entirely on slower disk-based databases. ElastiCache supports two widely adopted open-source engines – Memcached and Redis. The service is protocol compliant with both engines, so popular tools that you use today with existing Memcached and Redis environments will work seamlessly with ElastiCache.

1.2.6 DevOps in AWS

AWS provides a set of flexible services designed to enable companies to more rapidly and reliably build and deliver products using AWS and DevOps practices. These services simplify provisioning and managing infrastructure, deploying application code, automating software release processes, and monitoring your application and infrastructure performance. And it is the combination of cultural philosophies, practices, and tools that increase an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.

Under a DevOps model, development and operations teams are no longer “siloed.” Sometimes, these two teams are merged into a single team where the engineers work across the entire application lifecycle, from development and test to deployment to operations, and develop a range of skills not limited to a single function. Quality assurance and security teams may also become more tightly integrated with development and operations and throughout the application lifecycle. These teams use practices to automate processes that historically have been manual and slow. They use a technology stack and tooling which help them operate and evolve applications quickly and reliably. These tools also help engineers independently accomplish tasks (for example, deploying code or provisioning infrastructure) that normally would have required help from other teams, and this further increases a team’s velocity.

1.3 MICROSOFT AZURE CLOUD

1.3.1 INTRODUCTION TO MICROSOFT AZURE CLOUD

Microsoft Azure (formerly Windows Azure) is a cloud computing service created by Microsoft for building, testing, deploying, and managing applications and services through a global network of Microsoft-managed data centers. It provides software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS) and supports many different programming languages, tools, and frameworks, including both Microsoft-specific and third-party software and systems. Windows Azure is designed to make IT management easier. The main purpose of developing Windows Azure was to minimize the overhead and personnel expenses associated with the creation, distribution, and upgrade of the Web applications.

The Windows Azure platform is considered a platform as a service, which is an imperative component of a cloud computing platform. It consists of various on-demand services hosted in Microsoft's data centers and is commoditized through three product brands. The services and applications developed using the Azure platform run on the Windows Azure operating system, which provides a runtime environment for Web applications along with an extensive set of services that facilitate the building, hosting and management of applications without requiring maintenance too expensive onsite resources. Windows Azure is designed to support both Microsoft and non-Microsoft platforms. The three main components that constitute Windows Azure are:

- Compute layer
- Storage layer
- Fabric layer

Windows Azure also includes an automated service management feature that allows the upgrading of applications without affecting their performance. Windows Azure is designed to support a number of platforms and programming languages. Some of the languages supported are extensible markup language (XML), representational state transfer (REST), Simple Object Access Protocol (SOAP), Ruby, Eclipse, Python, and PHP.

Step 1: For Registration go to <https://azure.microsoft.com/en-in/free/students/>

The screenshot shows the Microsoft Azure Students landing page. At the top, there's a navigation bar with links like Overview, Solutions, Products, Documentation, Pricing, Training, Marketplace, Partners, Support, Blog, and More. Below the navigation, a large banner reads "Start building the future with Azure for Students!" and "Get a \$100 credit when you create your free account with Microsoft Azure". It features a green "Activate now >" button and a link to "Read the FAQ for eligibility >". Below the banner, there are three main sections: "No credit card needed", "Free developer tools", and "Drive your career". Each section has a brief description and a plus sign icon indicating more details. The "Free developer tools" section includes a note about building skills in data science, AI, machine learning, and professional developer tools.

Step 2: Click the Activate now button for signup

The screenshot shows a "Create account" page from Microsoft. The URL in the address bar is https://signup.live.com/signup?ru=https%3a%2f%2flogin.live.com%2foauth20_authorize.srf%3fc%3d1033%26response_type%3dcode%26client_id%3d51483342-085c-4d86-bf88... The page features a "Create account" heading and a text input field containing "someone@example.com". Below the input field are two links: "Use a phone number instead" and "Get a new email address". At the bottom are "Back" and "Next" buttons. The background of the page is a blurred image of people walking in a modern office atrium.

Step 3: Now we successfully registered with azure

The screenshot shows the Microsoft Azure portal dashboard. The left sidebar has 'All services' selected. The main content area says 'No resources to display' and has a 'Create resources' button. To the right, there's a 'Quickstarts + tutorials' section with links to various Azure services.

Step 4: Services that we can use with a student account are notified by a yellow star on all resources tab

The screenshot shows the 'All services' page in the Microsoft Azure portal. The left sidebar has 'All services' selected. The main area lists various Azure services, with many of them having a yellow star icon next to them, indicating they are available for use with a student account.

Step 5: Add a resource using any name

The screenshot shows the 'Create a resource group' wizard in the Azure portal. The 'Basics' tab is selected. In the 'PROJECT DETAILS' section, 'Subscription' is set to 'Azure for Students' and 'Resource group' is set to 'hodpica_resource1'. In the 'RESOURCE DETAILS' section, 'Region' is set to '(US) Central US'. At the bottom, there are 'Review + Create' and 'Next : Tags' buttons.

The screenshot shows the 'Create a resource group' wizard in the Azure portal. The 'Review + Create' tab is selected. The summary information is displayed:

SUMMARY	
Subscription	Azure for Students
Resource group	hodpica_resource1
Region	(US) Central US

At the bottom, there are 'Create' and 'Previous : Tags' buttons.

Now the resource is created

The screenshot shows the Microsoft Azure Resource groups page. The left sidebar includes options like Create a resource, Home, Dashboard, All services, and Favorites. Under Favorites, 'App Services' is selected. The main content area displays a table titled 'Resource groups' with one item: 'hoscpa_resource1'. The table has columns for NAME, SUBSCRIPTION, and LOCATION. The location is listed as 'Central US'. There are also buttons for Add, Edit columns, Refresh, Export to CSV, and Assign tags.

Step 6: Now go to App services create an app service (Select the created resource name from dropdown)

The screenshot shows the Microsoft Azure App Services page. The left sidebar includes options like Create a resource, Home, Dashboard, All services, and Favorites. Under Favorites, 'App Services' is selected. The main content area displays a table titled 'App Services' with zero items. The table has columns for NAME, STATUS, APP TYPE, APP SERVICE PLAN, LOCATION, and SUBSCRIPTION. A message at the bottom states 'No app services to display' and provides a link to learn more about App Service.

Step 7: Select the created resource group name and select runtime stack as PHP 7.3 then click Review and create

Microsoft Azure

Web App - Microsoft Azure

https://portal.azure.com/?Microsoft_Azure_Education_correlationId=1F4FAB54EC9D64FE35FCA7CBED556554&Microsoft_Azure_Education_newA4E=true#create/Microsoft.WebSite

Microsoft Azure

Home > App Services > Web App

App Ser... Documentation Default Directory

Web App Create

Looking for the classic Web App create experience? →

Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

* Subscription: Azure for Students

* Resource Group: hospica_resource1

Create new

NAME: hospica

INSTANCE DETAILS

* Name: hospica

* Publish: Docker Image

* Runtime stack: PHP 7.3

* Operating System: Linux

* Location: Central US

APP SERVICE PLAN

App Service plan pricing tier determines the location, features, cost and compute resources associated with your app.

Learn more ↗

Create app service

Review and create Next: Monitoring >

Step 8: Click the create button, then your app service will start deploying

Microsoft Azure

Web App - Microsoft Azure

https://portal.azure.com/?Microsoft_Azure_Education_correlationId=1F4FAB54EC9D64FE35FCA7CBED556554&Microsoft_Azure_Education_newA4E=true#create/Microsoft.WebSite

Microsoft Azure

Home > App Services > Web App

App Ser... Documentation Default Directory

Web App Create

Basics Monitoring Tags Review and create

SUMMARY

Web App by Microsoft

DETAILS

Subscription	222b51c9-b086-4039-b802-88866628c168
Resource Group	hospica_resource1
Name	hospica
Publish	Code
Runtime stack	PHP 7.3

APP SERVICE PLAN

Name	ASP-alandevasiaresource1-b633
Operating System	Linux
Location	Central US
SKU	Premium V2
Size	Small
ACU	210 total ACU
Memory	3.5 GB memory

Create Previous Download a template for automation

The screenshot shows the Microsoft Azure portal for a web application named "WebApp-e63d1a42-bdb4". The main header indicates a "Deployment in progress..." at 10:41 AM, specifically for the resource group "hospica_resource1". The left sidebar lists various Azure services, and the right panel displays deployment details and additional resources.

Deployment Details:

- Deployment name: WebApp-e63d1a42-bdb4
- Subscription: Azure for Students
- Resource group: hospica_resource1

DEPLOYMENT DETAILS (Download)

- Start time: 5/28/2019, 10:41:21 AM
- Duration: 12 seconds
- Correlation ID: 7e065d43-3b1f-41de-9f28-24029f03ef10

RESOURCE TYPE STATUS OPERATION DETAILS

No results.

Additional Resources

- Windows Server 2016 VM Quickstart tutorial
- Cosmos DB Quickstart tutorial
- Web App Quickstart tutorial
- SQL Database Quickstart tutorial
- Storage Account Quickstart tutorial

Helpful Links

- Get started with Azure
- Azure architecture center

The screenshot shows the Microsoft Azure portal for the same web application. The main header now indicates a "Deployment completed" message. The right panel displays deployment details and additional resources.

Deployment Details:

- Deployment name: WebApp-e63d1a42-bdb4
- Subscription: Azure for Students
- Resource group: hospica_resource1

DEPLOYMENT DETAILS (Download)

- Start time: 5/28/2019, 10:41:21 AM
- Duration: 5 minutes 52 seconds
- Correlation ID: 7e065d43-3b1f-41de-9f28-24029f03ef10

RESOURCE TYPE STATUS OPERATION DETAILS

hospica	Microsoft.Web/sites	OK	Operation details
ASP-hospicaresour	Microsoft.Web/ser...	OK	Operation details

Additional Resources

- Windows Server 2016 VM Quickstart tutorial
- Cosmos DB Quickstart tutorial
- Web App Quickstart tutorial
- SQL Database Quickstart tutorial
- Storage Account Quickstart tutorial

Helpful Links

- Get started with Azure
- Azure architecture center

Step 9: Once completed go to App Services -> Deployment Center then authorize our git hub Account

The screenshot shows the Microsoft Azure Deployment Center interface for an app service named 'hospica'. The left sidebar lists various Azure services, and the main pane shows the 'Deployment Center' overview. A navigation bar at the top includes 'SOURCE CONTROL', 'BUILD PROVIDER', 'CONFIGURE', and 'SUMMARY'. Under 'SOURCE CONTROL', there are four options: 'Azure Repos' (selected), 'GitHub' (disabled with 'Not Authorized'), 'Bitbucket', and 'Local Git'. The 'GitHub' section has a note: 'Configure continuous integration with a GitHub repo.' The 'BUILD PROVIDER' section also lists 'Azure Pipelines (Preview)'.

Step 10: Select Azure Pipelines as Build provider then configure the deployment

This screenshot shows the 'CONFIGURE' step of the deployment setup. The 'BUILD PROVIDER' section is selected, and the 'Azure Pipelines (Preview)' option is chosen. A note states: 'Configure a robust deployment pipeline for your application using Azure Pipelines, part of Azure DevOps Services (formerly known as VSTS). The pipeline builds, runs load tests and deploys to...' At the bottom, there are 'Back' and 'Continue' buttons.

Step 11: Select the Repository and Branch where we upload the PHP code

The screenshot shows the Microsoft Azure Deployment Center configuration page for the 'hospica - Deployment Center' app service. The 'Code' section is set up with the organization 'jintu123', repository 'azure', and branch 'master'. The 'Build' section is configured with a new project, PHP as the framework, and PHP 7.3 as the framework version. The process bar at the top indicates Step 11 is currently being completed.

The screenshot shows the Microsoft Azure Deployment Center status page for the 'hospica - Deployment Center' app service. It displays deployment logs from Tuesday, May 28, 2019, showing successful deployments and the setup of Continuous Delivery. Deployment credentials are listed at the top, and the deployment center interface is shown below.

Now the Deployment is completed

The screenshot shows the Microsoft Azure Deployment Center interface. The top navigation bar includes links for Home, Dashboard, All services, Favorites, Resource groups, App Services, Function App, SQL databases, Azure Cosmos DB, Virtual machines, Load balancers, Storage accounts, Virtual networks, Azure Active Directory, Monitor, Advisor, Security Center, Cost Management + Billing, Help + support, and a search bar. The main content area displays the deployment status for 'hospiqa' under 'Deployment Center'. The status bar at the top right indicates 'Setting up deployment' and 'Setting up deployment'. The deployment steps shown are SOURCE CONTROL, BUILD PROVIDER, CONFIGURE, and SUMMARY, all of which are marked as completed with green checkmarks. The SOURCE CONTROL section shows a repository at <https://github.com/alande123/azure> and a branch 'master'. The BUILD PROVIDER section shows settings for Azure Pipelines (Preview), New Account Yes, Account jintumolthomas, Location CUS, Web Application Framework PHP, and Framework version 7.3. Below these sections are tabs for Configuration, Authentication / Authorization, Application Insights, Identity, Backups, Custom domains, SSL settings, Networking, Scale up (App Service plan), Scale out (App Service plan), WebJobs, Push, and MySQL In App. At the bottom are 'Back' and 'Finish' buttons.

Step 12: Go to App Services -> Overview and click on the top right link to see the content

The screenshot shows the Microsoft Azure App Services Overview page for the 'hospiqa' app service. The top navigation bar and sidebar are identical to the previous screenshot. The main content area shows the 'Overview' tab selected. It displays deployment details: Resource group (change) : alandevasia_resource, Status : Running, Location : Central US, Subscription (change) : Azure for Students, Subscription ID : 222b51c9-b086-4039-b802-88866528c168, and Tags (change) : Click here to add tags. To the right, it shows the URL : <http://cardeals.azurewebsites.net>, App Service Plan : ASP - hospiqaresource1 - b633 (Pv2:1), and Continuous delivery stat... : Below this are two informational boxes: 'Diagnose and solve problems' and 'App Service Advisor'. The 'Diagnose and solve problems' box provides self-service diagnostic and troubleshooting help. The 'App Service Advisor' box provides insights for improving app experience on the App Service platform. At the bottom, there are three monitoring charts: 'Http 5xx' (showing 100 errors from 10:45 AM to 11:30 AM), 'Data In' (showing 48.83KB to 161.01KB from 10:45 AM to 11:30 AM), and 'Data Out' (showing 87.89KB to 161.01KB from 10:45 AM to 11:30 AM). The bottom navigation bar shows the URL <https://cardeals.azurewebsites.net>.

PART 2

USING GIT AS A VERSION CONTROL SYSTEM

2.1 INTRODUCTION TO GITHUB

GitHub is a web-based version-control and collaboration platform for software developers. GitHub, which is delivered through a software-as-a-service (SaaS) business model, was started in 2008 and was founded on Git, an open source code management system created by Linus Torvalds to make software builds faster. And it is used to store the source code for a project and track the complete history of all changes to that code. It allows developers to collaborate on a project more effectively by providing tools for managing possibly conflicting changes from multiple developers. GitHub allows developers to change, adapt and improve software from its public repositories for free, but it charges for private repositories, offering various paid plans. Each public or private repository contains all of a project's files, as well as each file's revision history. Repositories can have multiple collaborators and can be either public or private.

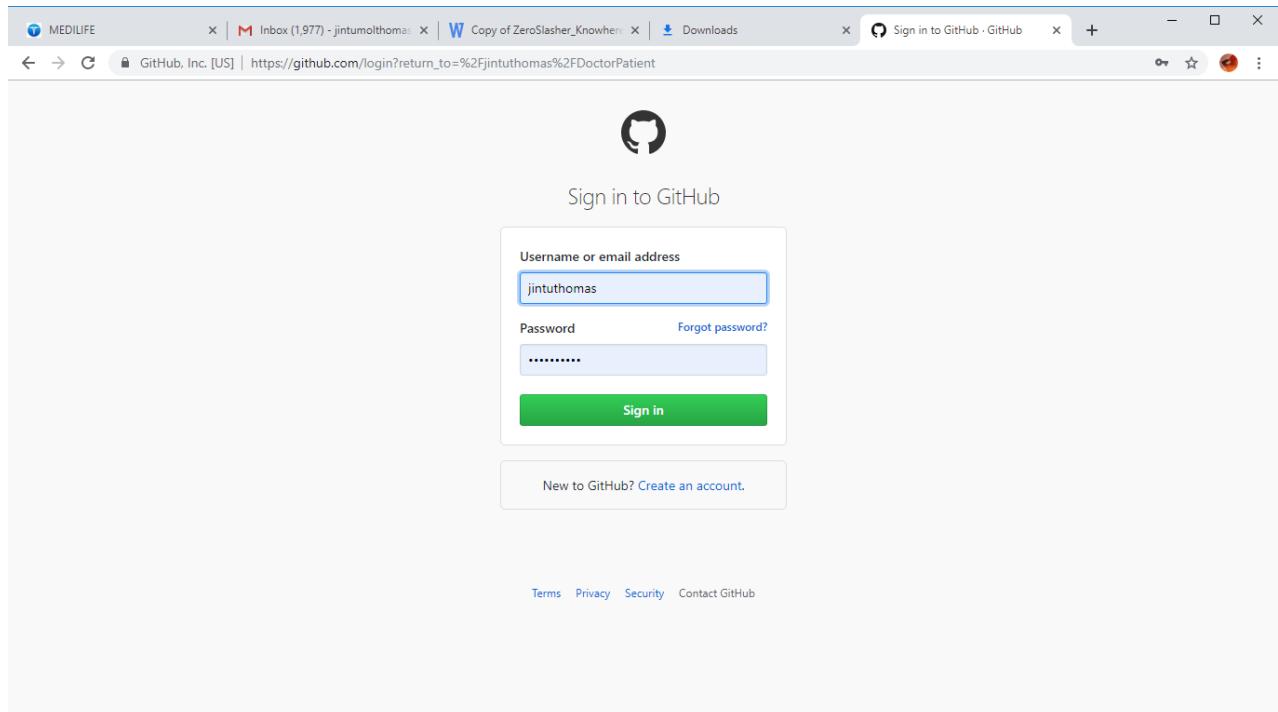
GitHub facilitates social coding by providing a web interface to the Git code repository and management tools for collaboration. GitHub can be thought of as a serious social networking site for software developers. Members can follow each other, rate each other's work, receive updates for specific projects and communicate publicly or privately.

GitHub products and features

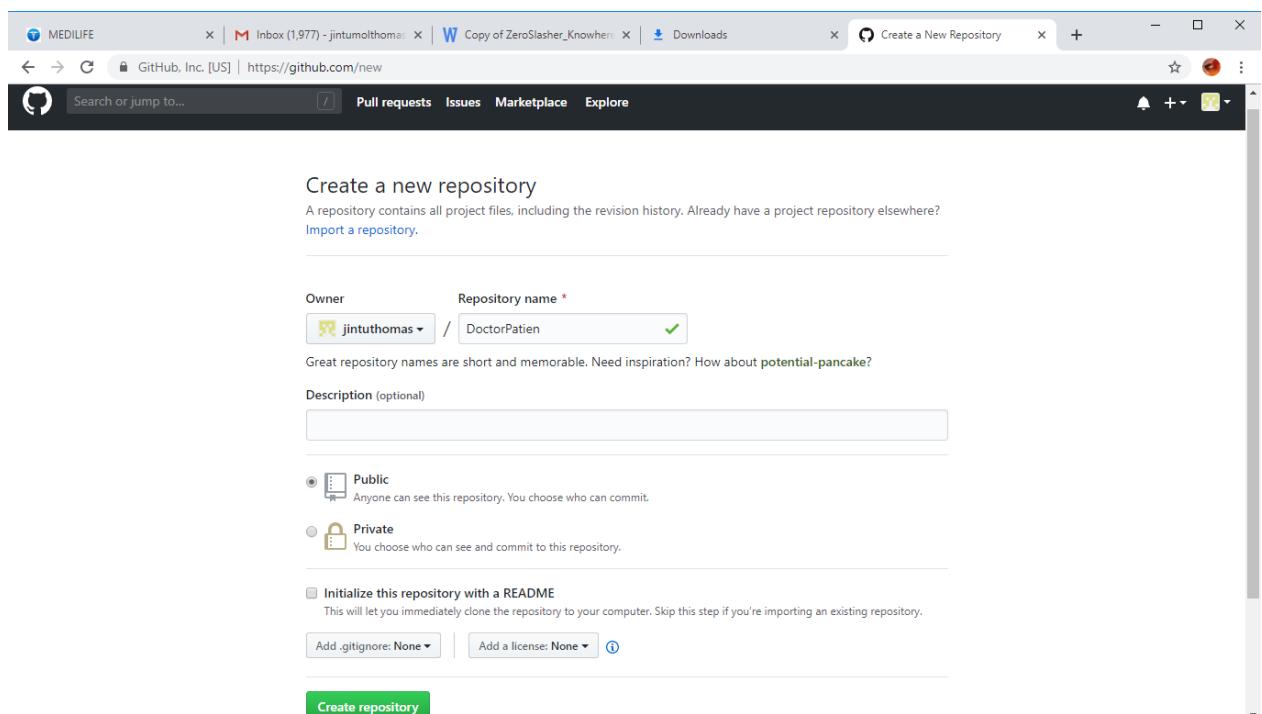
GitHub offers an on-premises version in addition to the well-known SaaS product. GitHub Enterprise supports integrated development environments and continuous integration tool integration, as well as a litany of third-party apps and services. It offers increased security and auditability than the SaaS version.

2.2 WORKING WITH GIT

Step 1: Sign in to GitHub



Step 2: Once successfully sign in, set up personal account, create a repository.



Step 3: Once repository is completed, you can setup the repository

The screenshot shows the 'Settings' tab of a GitHub repository named 'DoctorPatient'. On the left, there's a sidebar with options like 'Options', 'Collaborators', 'Branches', 'Webhooks', 'Notifications', 'Integrations & services', 'Deploy keys', 'Moderation', and 'Interaction limits'. The main area is titled 'Settings' and contains fields for 'Repository name' (set to 'DoctorPatient') and 'Social preview' (with a note about image size). A large empty box is provided for uploading a social media preview image.

Step 4: Once repository is created, make changes on the file which is stored inside the local repository and commit to master

The screenshot shows the main overview page of the 'DoctorPatient' repository. It displays basic statistics: 20 commits, 1 branch, 0 releases, and 1 contributor. Below this, a table lists the contents of the 'master' branch:

File	Description	Last Commit
13_3_19.zip	13_2_19	this year
Assignment.docx	Assignment	this year
Database Design.docx	Database_design	this year
DoctorPatient_Abstract.docx	Abstract	this year
FEASIBILITY_STUDY.docx	Add files via upload	this year
FORM DESIGN.pdf	Form Design	this year
README.md	Initial commit	this year
Requirement Gathering .docx	Add files via upload	this year
Sample_pgm_ajax.zip	Sample_program_Ajax	this year
UML DIAGRAMS (1).pdf	uml_diagrams	this year

PART 3

DATA DESIGN IN NOVEL TECHNOLOGIES

3.1 MONGODB

3.1.1 INTRODUCTION TO MONGODB

MongoDB is an open source database that uses a document-oriented data model. And it is one of several database types to arise in the mid-2000s under the NoSQL banner. Instead of using tables and rows as in relational databases, MongoDB is built on an architecture of collections and documents. Documents comprise sets of key-value pairs and are the basic unit of data in MongoDB. Collections contain sets of documents and function as the equivalent of relational database tables. Like other NoSQL databases, MongoDB supports dynamic schema design, allowing the documents in a collection to have different fields and structures. The database uses a document storage and data interchange format called BSON, which provides a binary representation of JSON-like documents. Automatic sharding enables data in a collection to be distributed across multiple systems for horizontal scalability as data volumes increase.

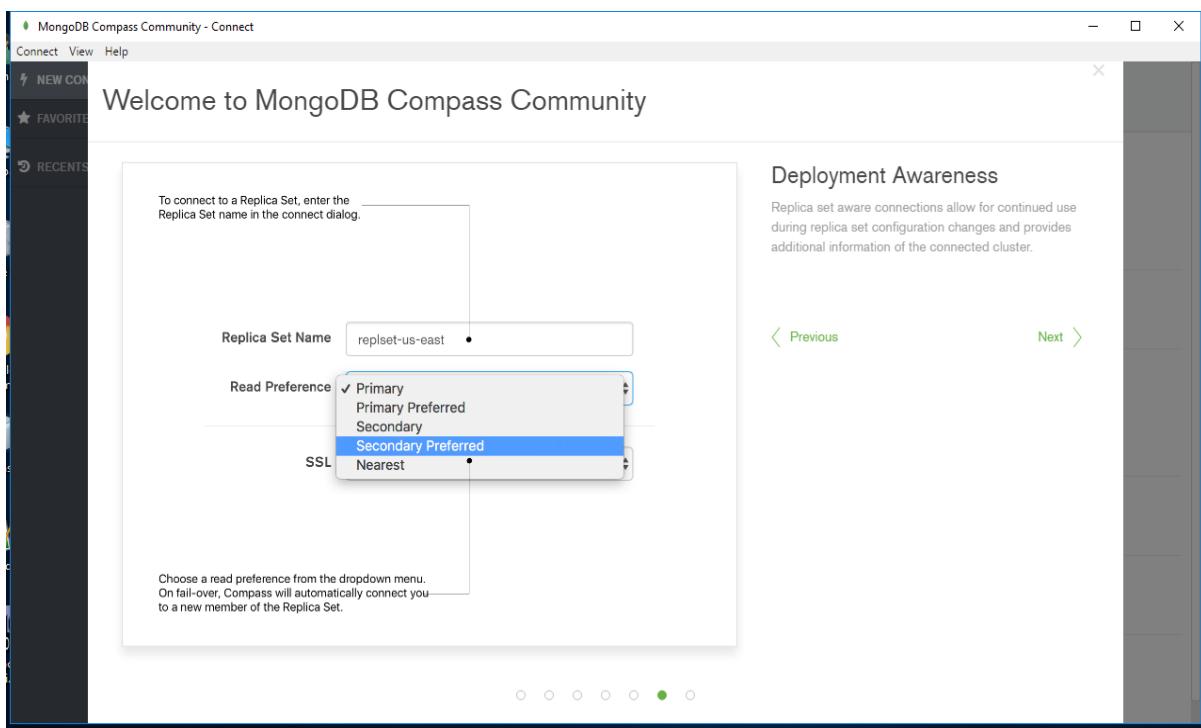
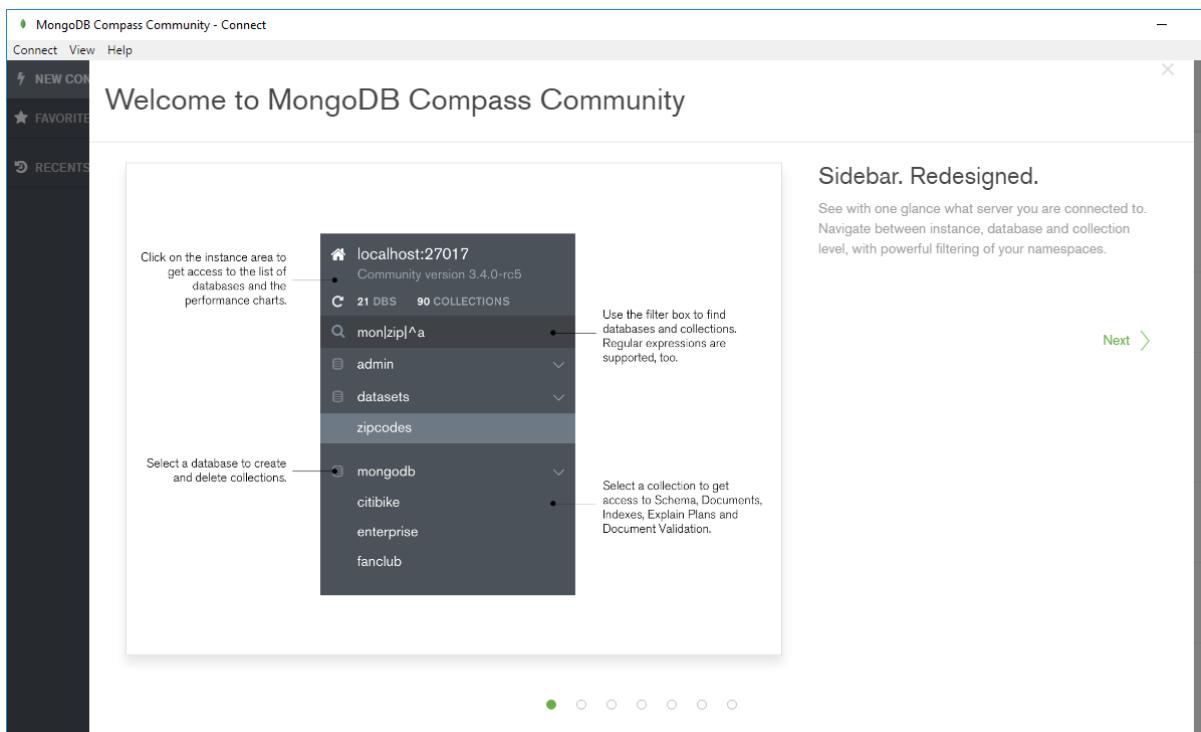
MongoDB was created by Dwight Merriman and Eliot Horowitz, who had encountered development and scalability issues with traditional relational database approaches while building Web applications at DoubleClick, an Internet advertising company that is now owned by Google Inc.

3.1.2 IMPLEMENTATION OF MONGODB

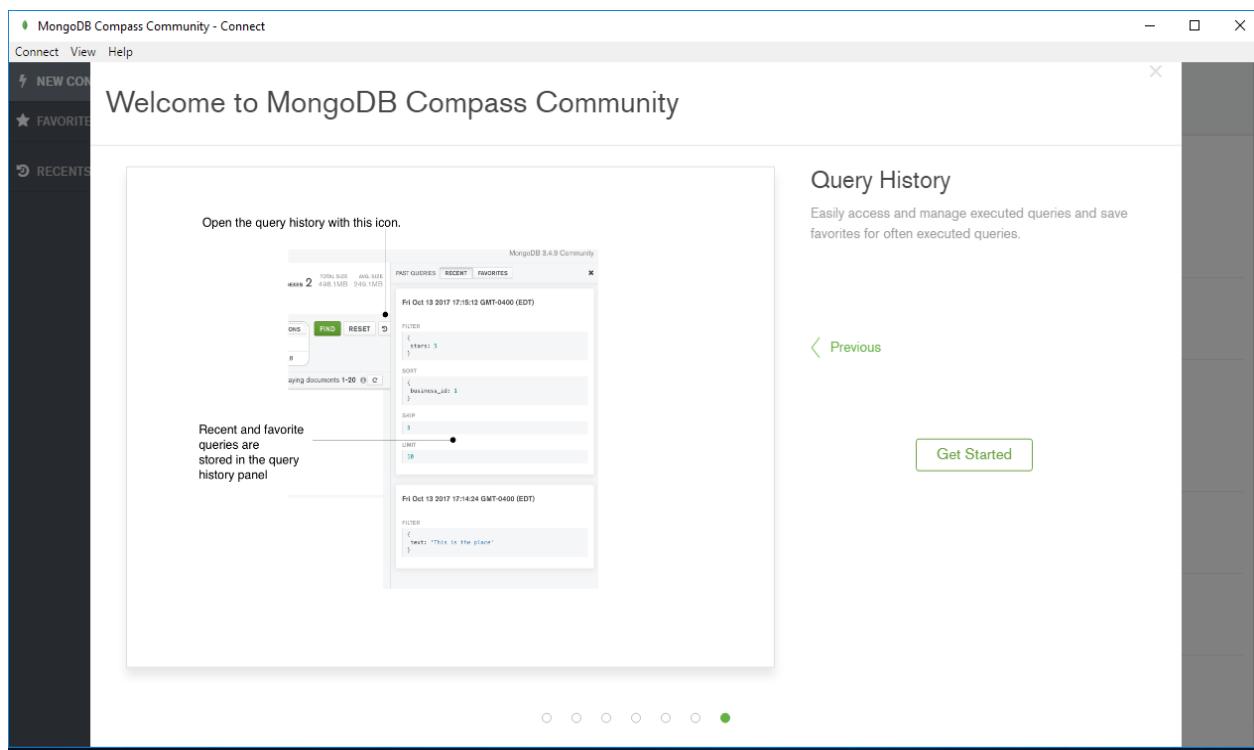
Step 1: Install MongoDB on your System.



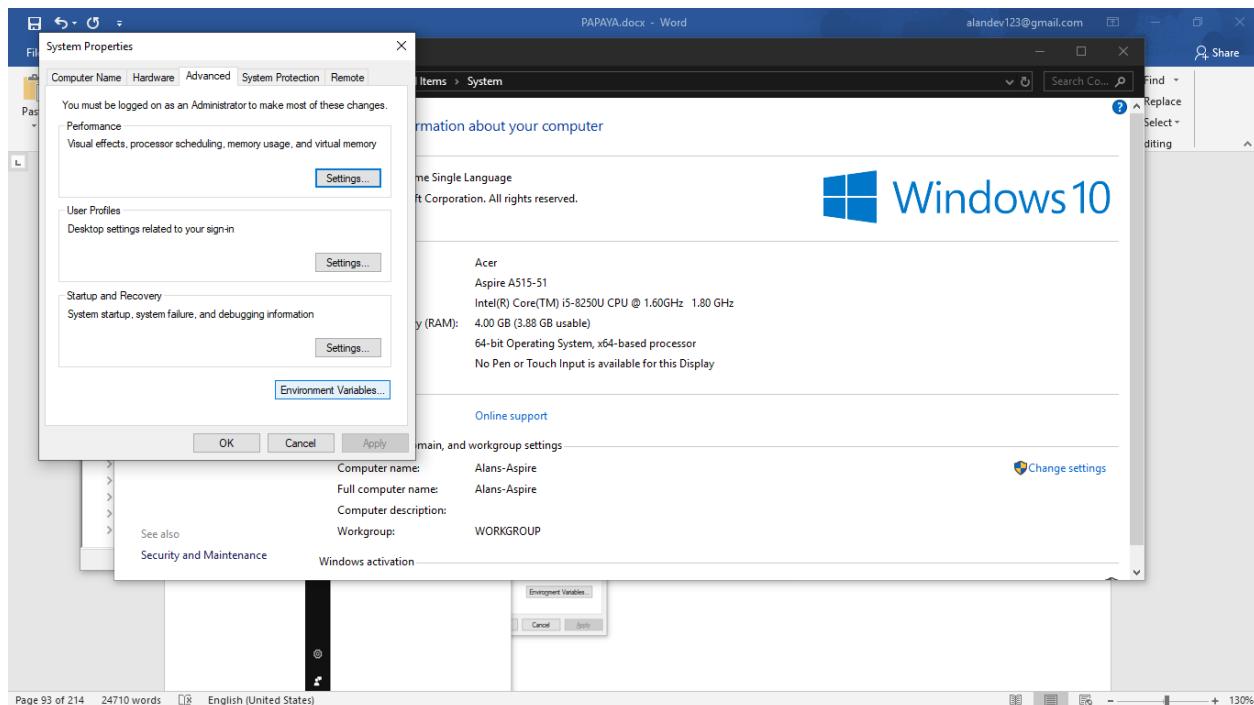
Step 2: They provide an introduction about MongoDB. Read it and click on ‘next’.



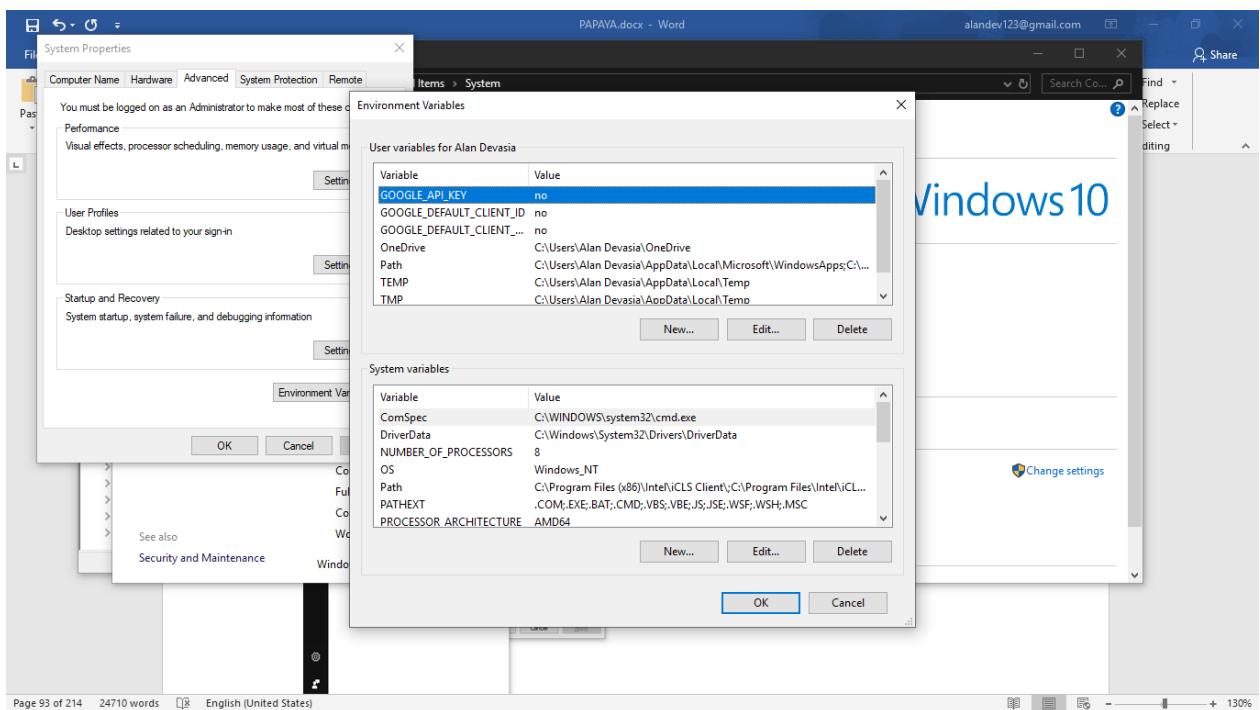
Click on ‘Get Started’.



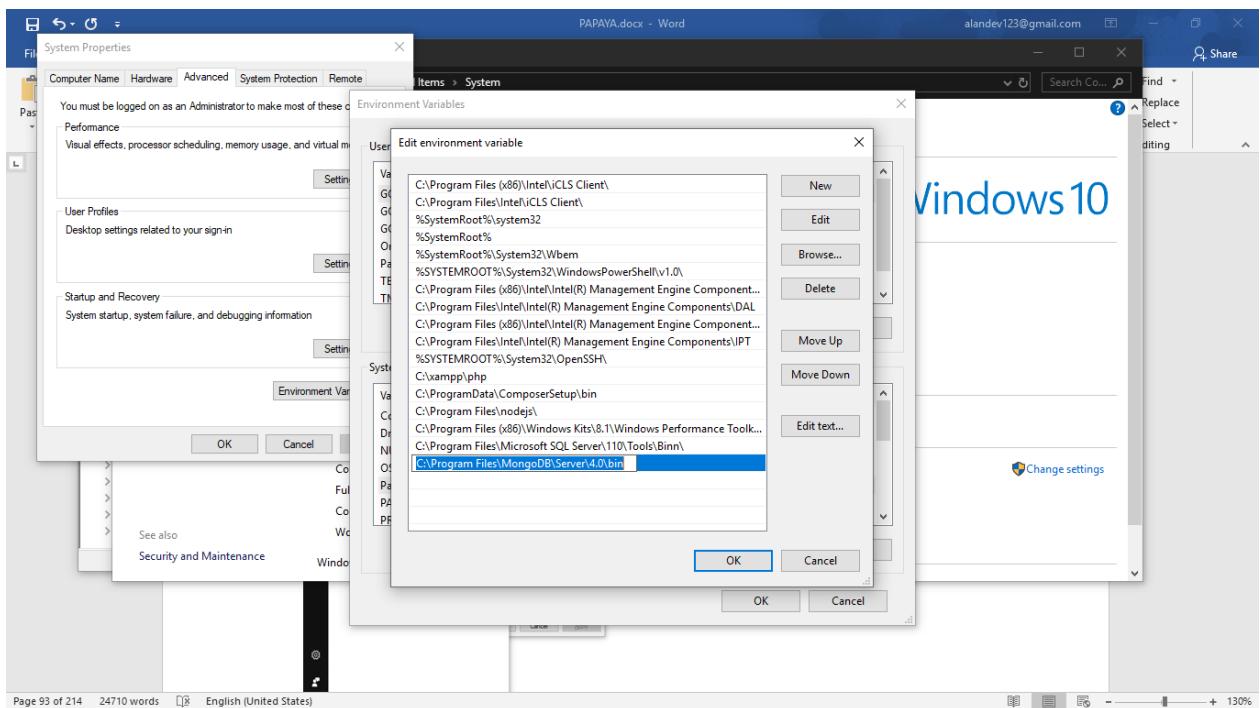
Step 3: We have to set the Environment Variables.



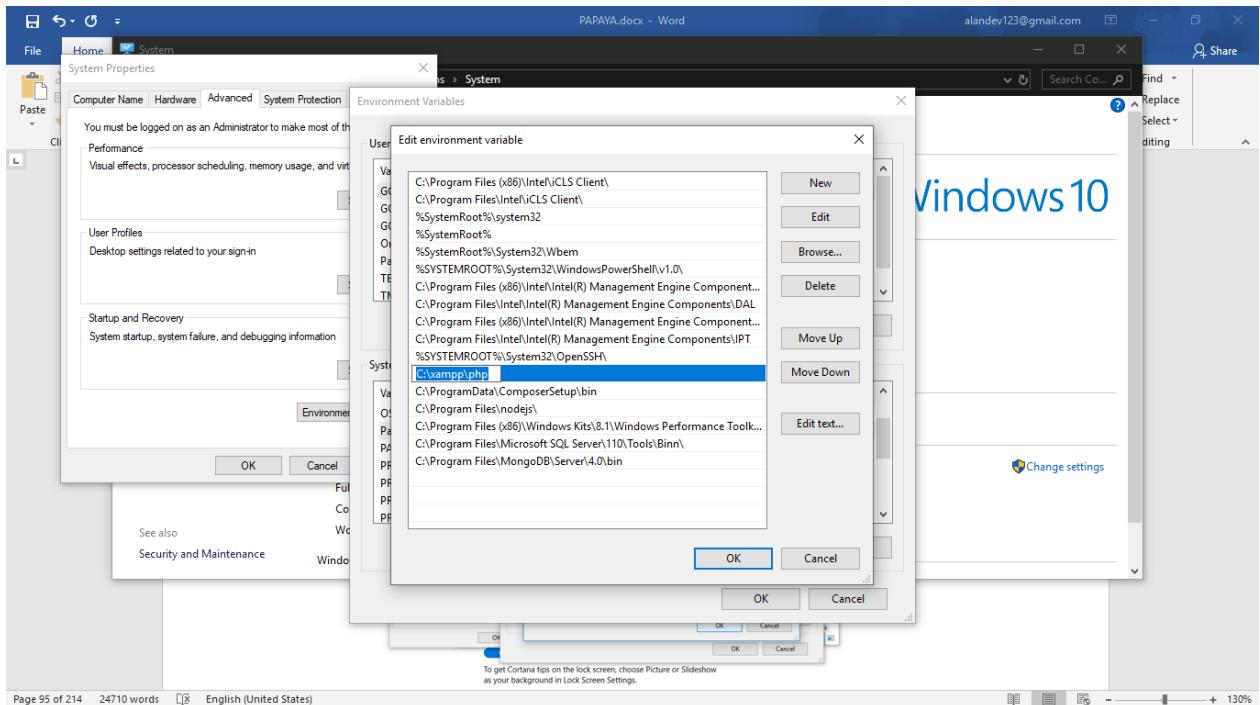
Open Environment Variables Tab



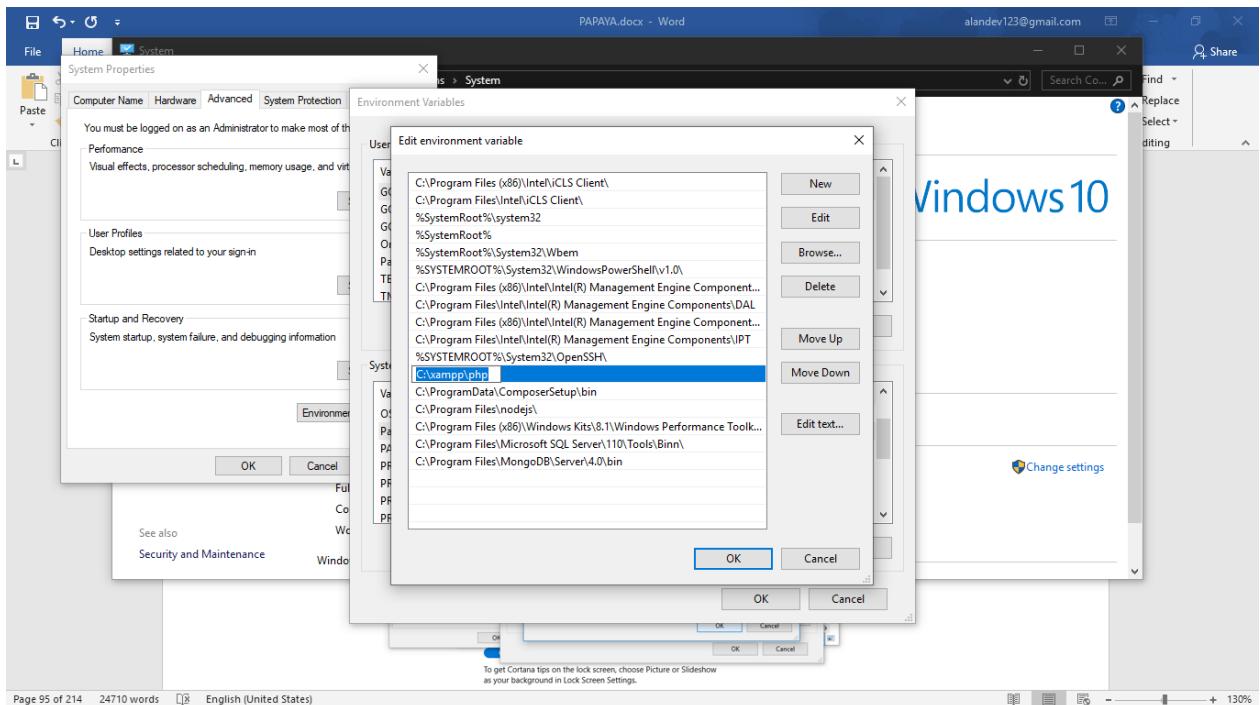
a. Copy the address of MongoDB bin and paste it.

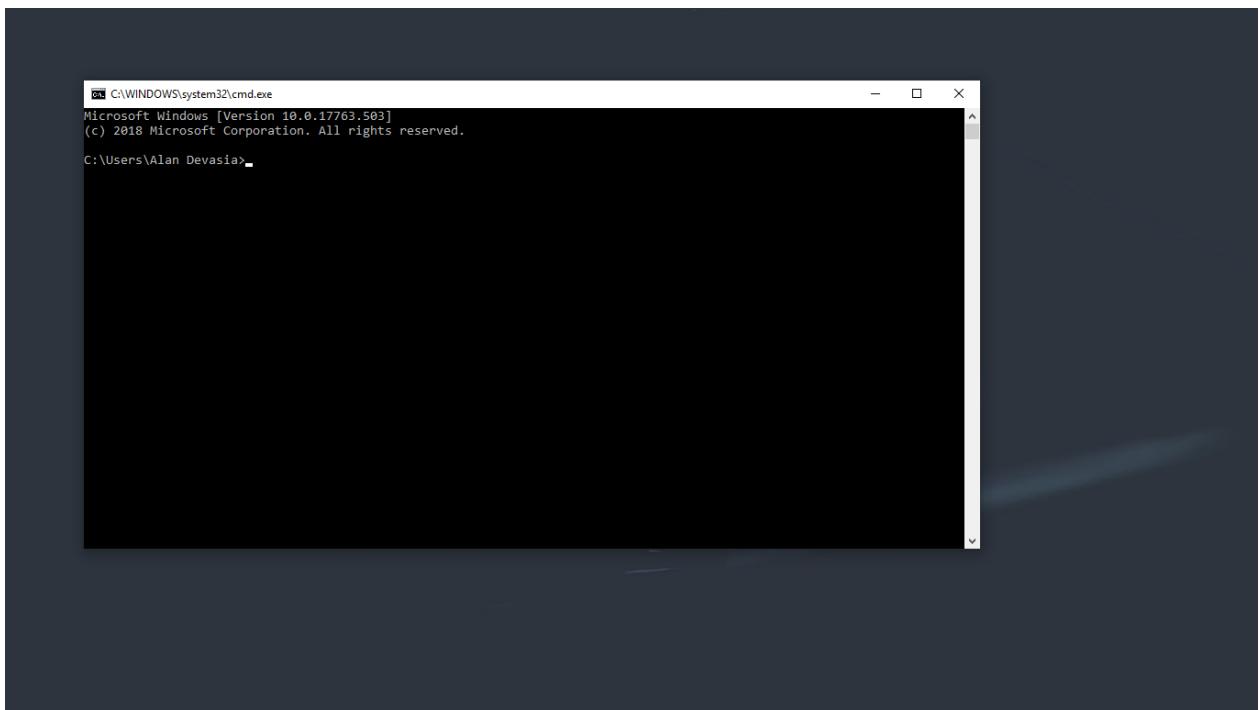
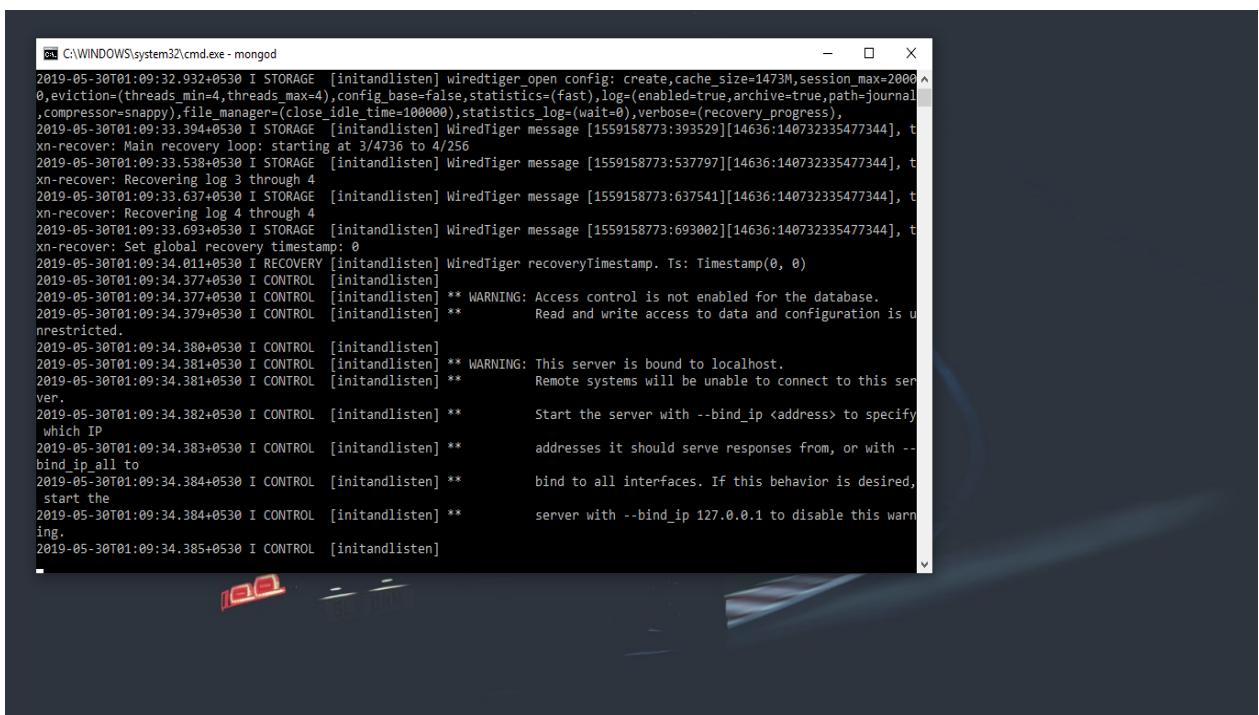


b. Copy the address of php folder in xampp and paste it.



c. Press 'OK' and save it.



Step 4: Open Command Prompt.**Step 5: Then we start client and Server.**

```
C:\WINDOWS\system32\cmd.exe - mongo
2019-05-30T00:59:33.114+0530 I CONTROL [consoleTerminate] shutting down with code:12
C:\Users\Alan Devasia>mongo
MongoDB shell version v4.0.9
connecting to: mongodb://127.0.0.1:27017/?gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("5b102421-7d44-48cc-ba3d-534ccc632ed5") }
MongoDB server version: 4.0.9
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
    http://docs.mongodb.org/
Questions? Try the support group
    http://groups.google.com/group/mongodb-user
Server has startup warnings:
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten]
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten] **             Read and write access to data and configuration is unrestricted.
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten]
...
Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
-- 
117 items | 1 item selected 69.7 KB |
```

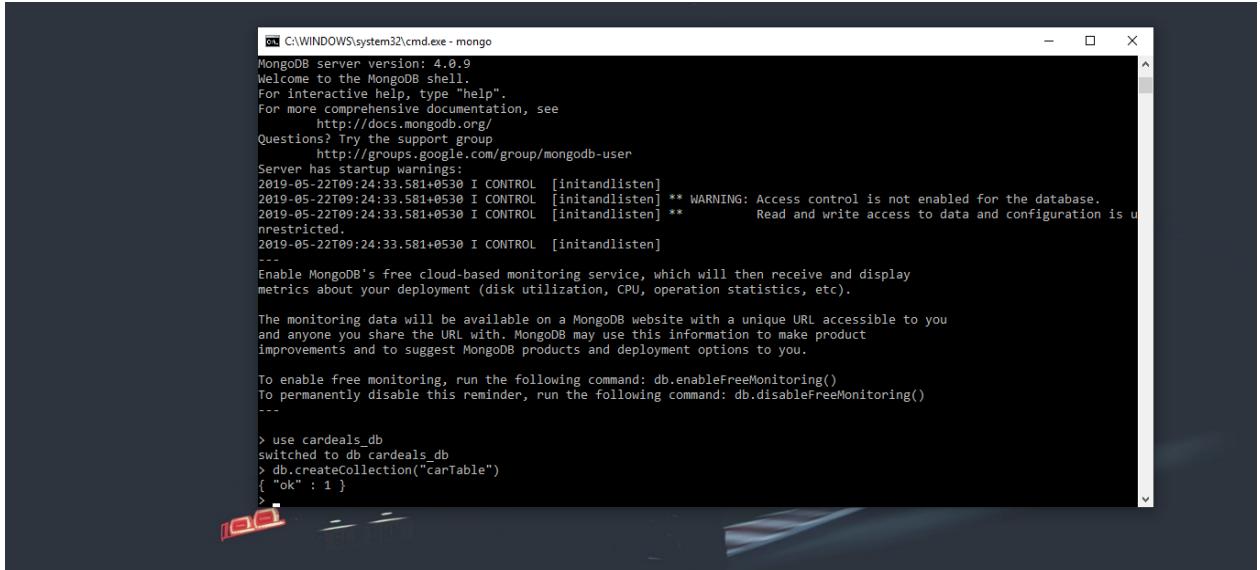
Step 6: Create a Database by ‘use database_name’ command

```
C:\WINDOWS\system32\cmd.exe - mongo
connecting to: mongodb://127.0.0.1:27017/?gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("5b102421-7d44-48cc-ba3d-534ccc632ed5") }
MongoDB server version: 4.0.9
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
    http://docs.mongodb.org/
Questions? Try the support group
    http://groups.google.com/group/mongodb-user
Server has startup warnings:
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten]
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2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten] **             Read and write access to data and configuration is unrestricted.
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten]
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improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
-- 
> use cardeals_db
switched to db cardeals_db
>
```

Step 7: We create a Collection using 'db.createCollection()' command



```
C:\WINDOWS\system32\cmd.exe - mongo
MongoDB server version: 4.0.9
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
    http://docs.mongodb.org/
Questions? Try the support group
    http://groups.google.com/group/mongodb-user
Server has startup warnings:
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten]
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten] ** Read and write access to data and configuration is unrestricted.
2019-05-22T09:24:33.581+0530 I CONTROL [initandlisten]

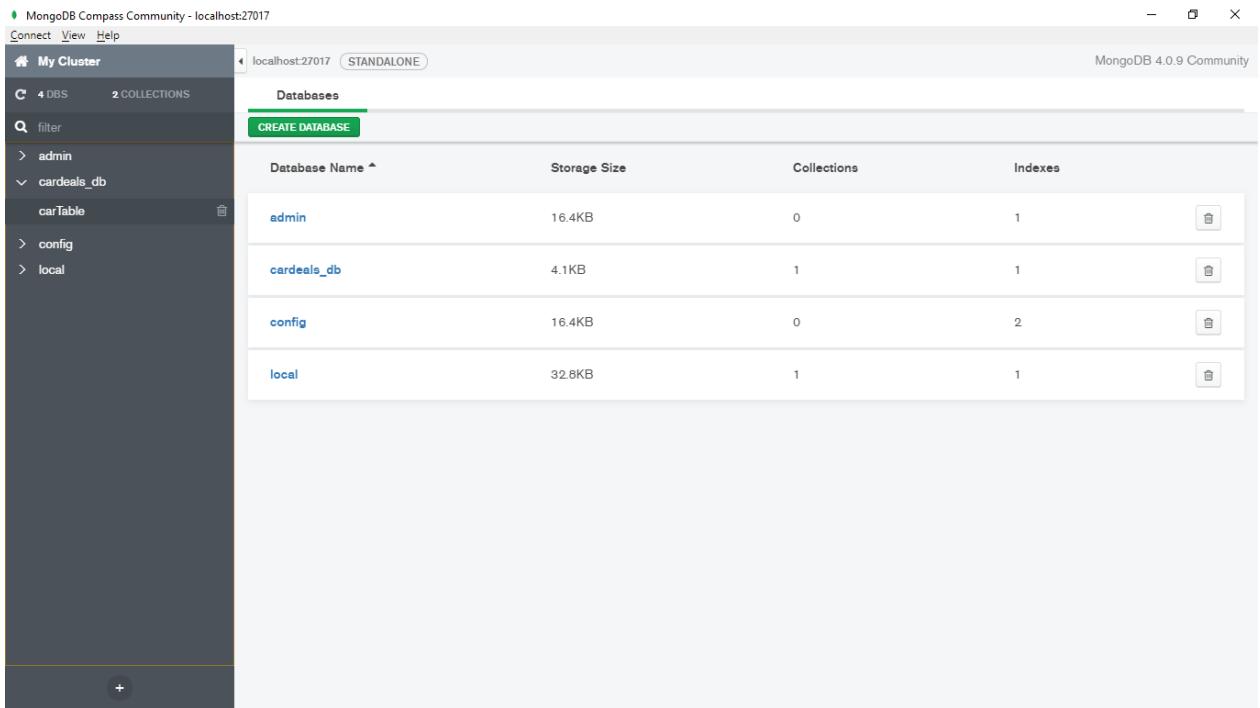
Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---

> use cardeals_db
switched to db cardeals_db
> db.createCollection("carTable")
{ "ok" : 1 }
```

Step 8: Open Compass, we can see the database we just created.



Database Name	Storage Size	Collections	Indexes
admin	16.4KB	0	1
cardeals_db	4.1KB	1	1
config	16.4KB	0	2
local	32.8KB	1	1

Step 9: Collection

The screenshot shows the MongoDB Compass interface. On the left, the sidebar displays 'My Cluster' with 4 DBs and 2 Collections. Under 'cardeals_db', there is a 'carTable'. The main area shows the 'carTable' collection with the following document:

_id	ObjectId	modelname	String
1	5cedeef3c12fd003ce0cf4286	"alto"	

Basic queries to access your database

1. MongoDB Connection \$con = new MongoClient();
2. Selection or Creation of Database (MySQL: Database) \$db = \$con->database_name;
3. Collection Creation (MySQL: Table) \$collection = \$db->createCollection("collection_name");
4. Document Insertion (MySQL: Insert - Row) \$document = array ("key-1" => "value-1", "key-n" => "value-n"); \$collection->insert(\$document);
5. View data (MySQL: Select) \$cursor = \$collection->find (); foreach (\$cursor as \$document) {echo \$document["key"];}
6. Updating data (MySQL: Update) \$collection->update(array("key"=>"old-value"), array('\$set'=>array("key"=>"new-value")));
7. Deletion of data (MySQL: Delete) \$collection->remove(array("condition-key"=>"condition-value"));

3.2 BIGTABLE IN GCP

3.2.1 INTRODUCTION TO BIGTABLE

Google Bigtable is a distributed, column-oriented data store created by Google Inc. to handle very large amounts of structured data associated with the company's Internet search and Web services operations. And it was designed to support applications requiring massive scalability; from its first iteration, the technology was intended to be used with petabytes of data. The database was designed to be deployed on clustered systems and uses a simple data model that Google has described as "a sparse, distributed, persistent multidimensional sorted map." Data is assembled in order by row key and indexing of the map is arranged according to row, column keys, and timestamps. Compression algorithms help achieves high capacity. Google Bigtable serves as the database for applications such as the Google App Engine Datastore, Google Personalized Search, Google Earth and Google Analytics. Google has maintained the software as a proprietary, in-house technology. Nevertheless, Bigtable has had a large impact on NoSQL database design. Google software developers publicly disclosed Bigtable details in a technical paper presented at the USENIX Symposium on Operating Systems and Design Implementation in 2006.

Google's thorough description of Bigtable's inner workings has allowed other organizations and open source development teams to create Bigtable derivatives, including the Apache HBase database, which is built to run on top of the Hadoop Distributed File System (HDFS). Other examples include Cassandra, which originated at Facebook Inc., and Hyper table, an open source technology that is marketed in a commercial version as an alternative to HBase.

3.2.2 IMPLEMENTATION OF BIGTABLE

1.Creating a Cloud Bigtable Instance through the Google Cloud Platform Console.

Cloud Bigtable is a fully managed NoSQL database that supports the popular open-source Apache HBase 1.0 API. You can provision Cloud Bigtable instances for your workload, then use the Bigtable HBase client to develop applications using the standard open-source Big Data tools you're familiar with. [Learn more](#)

No instances to display

Enabling Cloud Bigtable APIs for your project. This might take a minute. X

BingSiteAuth.xml Show all X

Create an instance

A Cloud Bigtable instance is a container for your clusters. [Learn more](#)

Instance name
For display purposes only

Instance ID
ID is permanent

Instance type Production (recommended)
Minimum of 3 nodes. High availability. Cannot downgrade later.
 Development
Low-cost instance for development and testing. Does not provide high availability or replication. Can upgrade to Production later.

Storage type SSD
Lower latency and more rows read per second. Typically used for real-time serving use cases, such as ad serving and mobile app recommendations.
 HDD
Higher latency for random reads. Good performance on scans and typically used for batch analytics, such as machine learning or data mining.

Clusters

Cluster
Cluster ID ID is permanent

Cost estimate

Monthly resource costs
Monthly costs reflect Bigtable resources only. Network traffic (replication and internet egress) costs are dependent on the location of your clusters and application request behavior. [Learn more](#)

Try another storage size (per cluster)
 GB

Item	Estimated cost
1 cluster	\$1,423.50/month
1000 GB SSD	\$170.00/month
Total	\$1,593.50/month

Node charges are for provisioned resources, regardless of node usage. The same node charges apply even if your instance is inactive. [Learn more](#)

Summary
Monthly charge: \$1,593.50 per month (1,000 GB data, 3 nodes)
Effective hourly rate: \$2.18

The screenshot shows the Bigtable Instances page. At the top, there are tabs for 'Bigtable' and 'Instances', a 'CREATE INSTANCE' button, and a 'SHOW INFO PANEL' link. Below the tabs is a search bar with the placeholder 'Filter instances'. A table lists one instance:

Instance ID	Instance name	Application profiles	Zones	Nodes	Storage utilization
nexuscbt	nexus_cbt	default Add	us-central1-a Add	3	>Loading

2. Select the gcloud shell then create a table using cbt createtable command

The screenshot shows the Bigtable Instance details page for 'nexuscbt'. On the left, there's a sidebar with 'Instance details', 'Monitoring', 'Tables', and 'Application profiles'. The main area shows 'Instance details' for 'nexuscbt-c1'. It includes sections for 'CPU utilization', 'Rows', 'Throughput', and 'System error rate'. Below this is a table for 'Cluster ID' with one entry: 'nexuscbt-c1' in 'us-central1-a'. To the right, there's a 'Tables available' section showing '0/0'. At the bottom is a terminal window with the following session:

```

nvision755@cloudshell:~ (nexus-1x)$ echo project=nexus-1x >> ~/.cbtrc
nvision755@cloudshell:~ (nexus-1x)$ echo instance=nexuscbt-c1 >> ~/.cbtrc
nvision755@cloudshell:~ (nexus-1x)$ cbt createtable courses
2019/05/27 15:02:43 -creds flag unset, will use gcloud credential
2019/05/27 15:02:45 Creating table: rpc error: code = NotFound desc = Failed to read: projects/{1037317594679}/instances/nexuscbt-c1
nvision755@cloudshell:~ (nexus-1x)$ nano ~/.cbtrc
nvision755@cloudshell:~ (nexus-1x)$ cbt createtable courses
2019/05/27 15:03:24 -creds flag unset, will use gcloud credential
2019/05/27 15:03:26 Creating table: rpc error: code = NotFound desc = Failed to read: projects/{1037317594679}/instances/nexuscbt-c1
nvision755@cloudshell:~ (nexus-1x)$ nano ~/.cbtrc
nvision755@cloudshell:~ (nexus-1x)$ cbt createtable courses
2019/05/27 15:03:41 -creds flag unset, will use gcloud credential
nvision755@cloudshell:~ (nexus-1x)$ cbt ls
2019/05/27 15:03:57 -creds flag unset, will use gcloud credential
courses
nvision755@cloudshell:~ (nexus-1x)$

```

3. Create columns using command “cbt createfamily”

Instance ID: nexuscbt Type: Production Storage: SSD

nexuscbt-c1

CPU utilization	Rows	Throughput	System error rate
Average: 0.2%	Read: 0/s Write: 0/s	Read: 0 B/s Write: 0 B/s	0%

Cluster ID	Zone	Nodes	Storage utilization	Tables available
<input checked="" type="checkbox"/> nexuscbt-c1	us-central1-a	3	0 B / 7.5 TB	0/0

```
(nexus-lx) ~ + ~
nvision755@cloudshell:~ (nexus-lx)$ cbt createfamily courses cid
2019/05/27 15:06:29 -creds flag unset, will use gcloud credential
nvision755@cloudshell:~ (nexus-lx)$ cbt createfamily courses crs_name
2019/05/27 15:06:42 -creds flag unset, will use gcloud credential
nvision755@cloudshell:~ (nexus-lx)$ cbt set courses cid=1 crs_name="artificial intelligence"
2019/05/27 15:07:39 -creds flag unset, will use gcloud credential
2019/05/27 15:07:41 Bad set arg "crs_name=artificial intelligence"
nvision755@cloudshell:~ (nexus-lx)$ cbt set courses cid:c1=1 crs_name:c2="artificial intelligence"
2019/05/27 15:08:18 -creds flag unset, will use gcloud credential
nvision755@cloudshell:~ (nexus-lx)$
```

4. Insert values to the table using “cbt set” command & retrieve values using “cbt read” command

Instance ID: nexuscbt Type: Production Storage: SSD

nexuscbt-c1

CPU utilization	Rows	Throughput	System error rate
Average: 0.3%	Read: 0/s Write: 0/s	Read: 0 B/s Write: 0 B/s	0%

Cluster ID	Zone	Nodes	Storage utilization	Tables available
<input checked="" type="checkbox"/> nexuscbt-c1	us-central1-a	3	0 B / 7.5 TB	0/0

```
(nexus-lx) ~ + ~
nvision755@cloudshell:~ (nexus-lx)$ cbt createfamily courses cid
2019/05/27 15:06:20 -creds flag unset, will use gcloud credential
nvision755@cloudshell:~ (nexus-lx)$ cbt createfamily courses crs_name
2019/05/27 15:06:42 -creds flag unset, will use gcloud credential
nvision755@cloudshell:~ (nexus-lx)$ cbt set courses cid=1 crs_name="artificial intelligence"
2019/05/27 15:07:39 -creds flag unset, will use gcloud credential
2019/05/27 15:07:41 Bad set arg "crs_name=artificial intelligence"
nvision755@cloudshell:~ (nexus-lx)$ cbt set courses cid:c1=1 crs_name:c2="artificial intelligence"
2019/05/27 15:08:18 -creds flag unset, will use gcloud credential
nvision755@cloudshell:~ (nexus-lx)$ cbt read courses
2019/05/27 15:08:48 -creds flag unset, will use gcloud credential
-----
cid:c1=1
  crs_name:c2
    "artificial intelligence"
nvision755@cloudshell:~ (nexus-lx)$
```

PART 4

SEARCH ENGINE OPTIMIZATION

Search engine optimization is a methodology of strategies, techniques, and tactics or it is the process of getting traffic from the free, organic, editorial or natural search results on search engines used to increase the number of visitors to a website by obtaining a high-ranking placement in the search results page of a search engine (SERP) — including Google, Bing, Yahoo and other search engines.

4.1 GOOGLE ADWORDS

4.1.1 INTRODUCTION TO GOOGLE ADWORDS

AdWords (Google AdWords) is an advertising service by Google for businesses wanting to display ads on Google and its advertising network. The AdWords program enables businesses to set a budget for advertising and only pay when people click the ads. The ad service is largely focused on keywords. Businesses that use AdWords can create relevant ads using keywords that people who search the Web using the Google search engine would use. The keyword, when searched for triggers your ad to be shown. AdWords at the top ads that appear under the heading "Sponsored Links" found on the right-hand side or above Google search results. If your AdWords ad is clicked on, Google search users are then directed to your website.

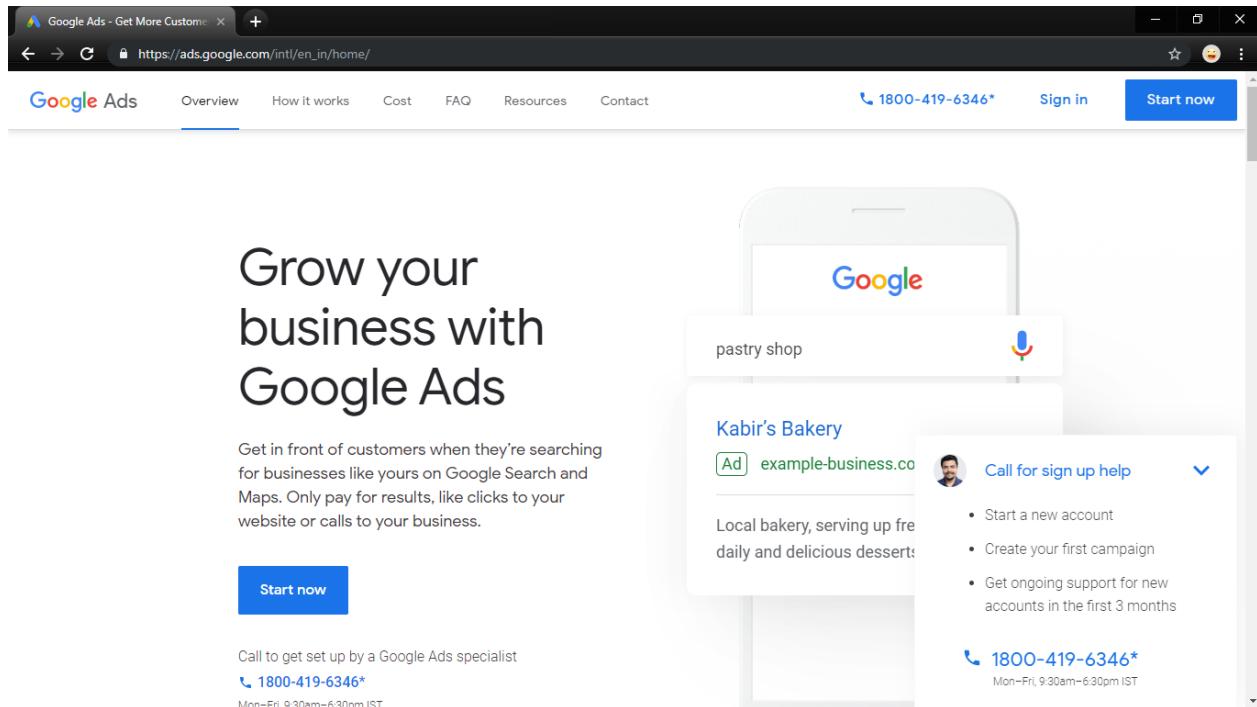
When choosing keywords for your AdWords campaigns different matching options are available. The two main keyword match options include the following:

- **Broad Match:** This reaches the most users by showing your ad whenever your keyword is searched for.
- **Negative Match:** This option prevents your ad from showing when a word or phrase you specify is searched for.
- **Phrase Match:** Your ad is shown for searches that match the exact phrase.
- **Exact Match:** Your ad is shown for searches that match the exact phrase exclusively.

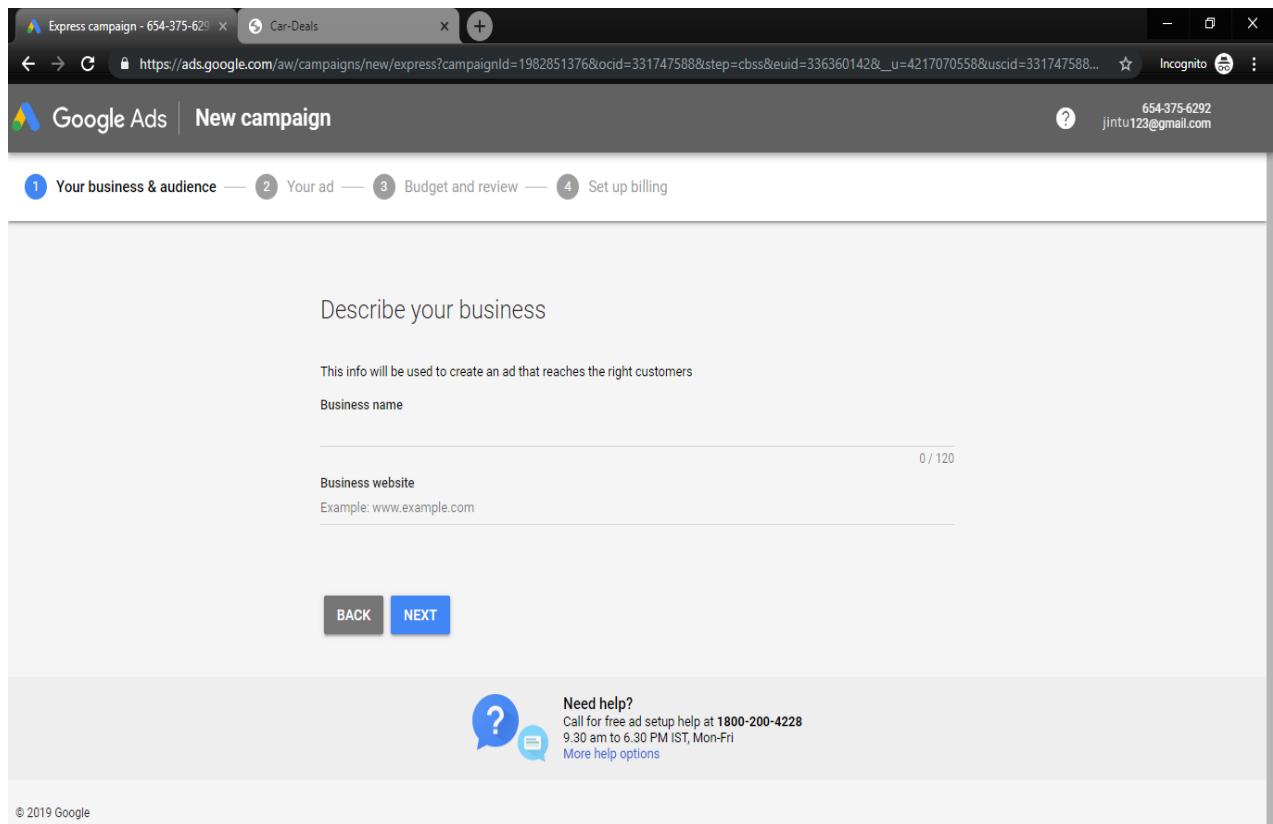
When using AdWords keywords are also used to determine your cost of advertising. Each keyword you choose will have a cost per click (CPC) bid amount. The bids specify the maximum amount you're willing to pay each time someone clicks your ad (the maximum cost-per-click). A higher CPC bid can allow your ad to show at a higher position on the page.

4.1.2 IMPLEMENTATION OF GOOGLE ADWORDS

Step 1: Go to Google AdWords Express and sign into your Google account



Step 2: Describe your business and website URL.



Step 3: Pick a goal for your ad, which means, what action do you most want customers to take?

The screenshot shows the Google Ads interface for creating a new campaign. The main heading is "What's your main advertising goal?". Below it, a sub-instruction reads "Ads that focus on a specific goal help you get the results you want". A dropdown menu lists three options: "Get more calls", "Get more visits to your physical location", and "Get more website sales or sign-ups". The third option is currently selected. To its right, a section titled "Choose this goal if:" contains two checked checkboxes: "Most of your business is conducted online" and "You want customers to complete a trackable action (such as a purchase or sign-up) on your website". At the bottom right of this section is a blue "PICK GOAL" button. Below the main form, a note says "Experienced with Google Ads?" followed by a help icon and a "Need help?" link.

Step 4: Pick an area to show your ad in, Here Google is providing two options, one is Near my business (Which allows you to specify the distance of area from your location) and second is in specific cities, states or countries.

The screenshot shows the Google Ads interface for creating a new campaign, specifically the location selection step. The main heading is "Where do you want your ad to appear?". Below it, a search bar shows three selected locations: "Pathanamthitta", "Kottayam", and "Alappuzha". To the right of the search bar, a box displays "1,084,600 people per month" with a note explaining it's an estimate of monthly search volume. Below the search bar is a map of southern Kerala, India, showing the locations of Pathanamthitta, Kottayam, and Alappuzha. A legend indicates that yellow lines represent major roads. At the bottom of the map are buttons for "BACK" and "NEXT". A help icon and a "Need help?" link are at the bottom right.

The screenshot shows the 'New campaign' setup page in Google Ads. The user has defined their product or service as 'Automotive' and specific products/services as 'car industry', 'automotive cars', and 'automotiv'. A tooltip provides guidance on increasing the potential audience size, suggesting targeting a larger area or choosing less specific terms. Navigation buttons 'BACK' and 'NEXT' are visible at the bottom.

The screenshot shows the 'New campaign' setup page in Google Ads, specifically the 'Your ad' step. The user has created an ad titled 'Car Comparison' with the following content:

Ad #1

- Headline 1:** Car Comparison (14 / 30)
- Headline 2:** Buy or sell Used cars (21 / 30)
- Description:** We can help you to find your desired car. (41 / 90)

The 'Your ad preview' section shows the final ad layout with the headline 'Car Comparison | Buy or sell Used cars' and the URL 'http://www.cardealscomparison.ml'. A link to 'SEE MORE AD LAYOUTS' is also present.

4.2 GOOGLE ADSENSE

4.2.1 INTRODUCTION TO GOOGLE ADSENSE

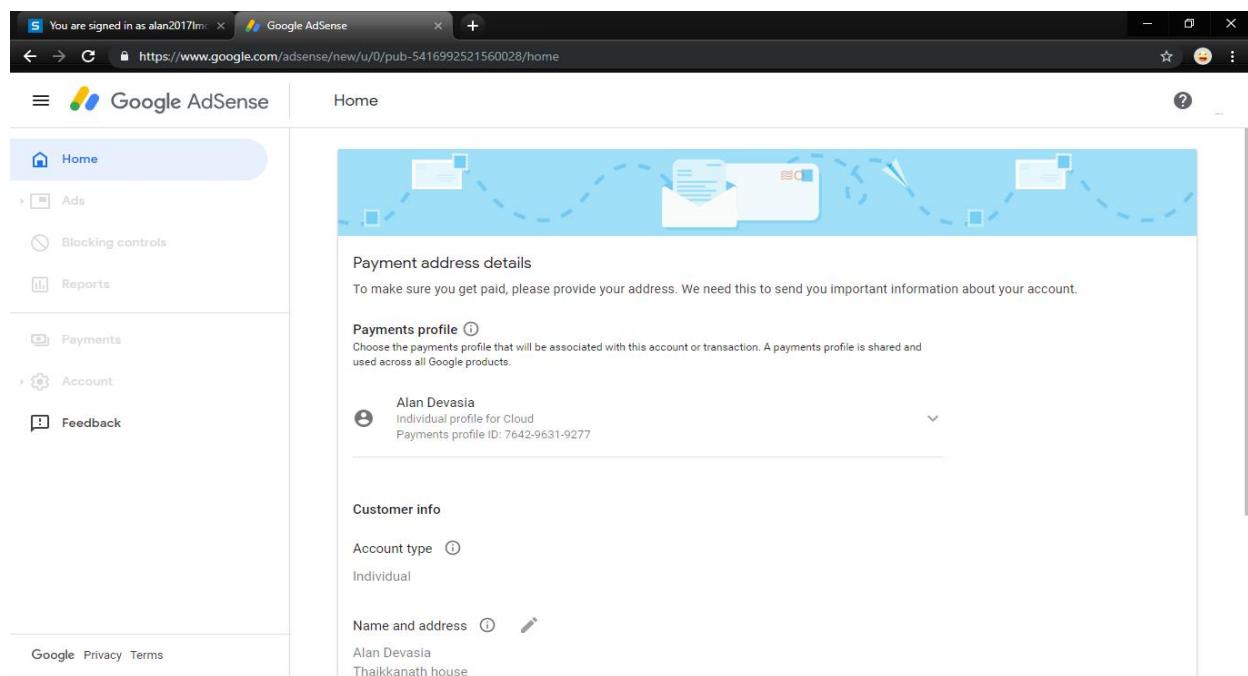
AdSense (*Google AdSense*) is an advertising placement service by Google. The program is designed for website publishers who want to display targeted text, video or image advertisements on website pages and earn money when site visitors view or click the ads. The advertisements are controlled and managed by Google and Web publishers simply need to create a free AdSense account and copy and paste provided code to display the ads. Revenue using AdSense is generated on a per-click or per-impression basis. It is free to become a verified website publisher in the Google AdSense program. Google currently offers a number of different AdSense programs, depending on the type of content you will place the ads on (e.g. a webpage or RSS feed). Some of the more common programs include:

- AdSense for content: display ads on a website
- AdSense for search: display ads in search results on a website
- AdSense for mobile: display ads on a mobile site
- AdSense for feeds: display ads in RSS feeds
- AdSense for domains: display ads on unused domains

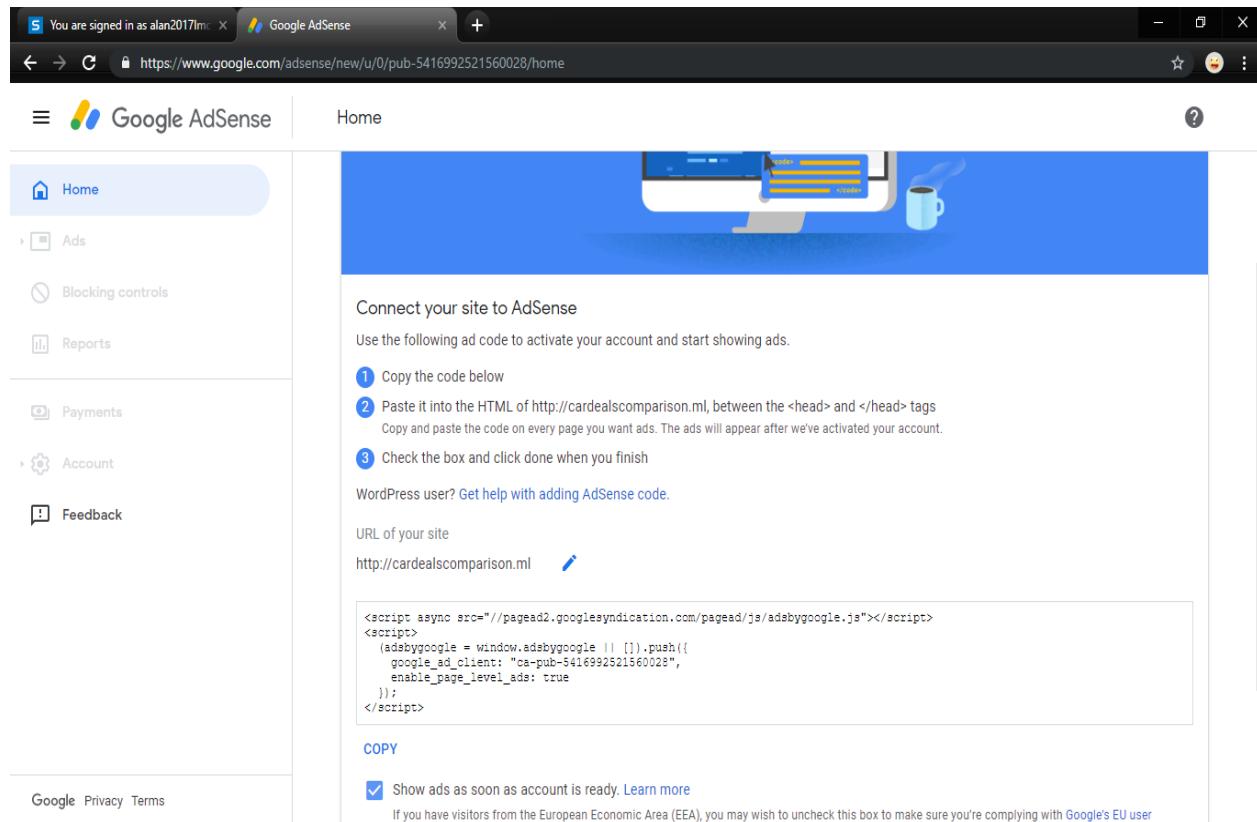
AdSense programs are also available to qualified publishers and developers. Qualified publishers may use AdSense to drive revenues for iPhone applications, video or Web browser games.

4.2.2 IMPLEMENTATION OF ADSENSE

Step 1: Go to AdSense Custom Search Ads Generator



Step 2: Copy the give code and paste it to head tag of our website's html pages.

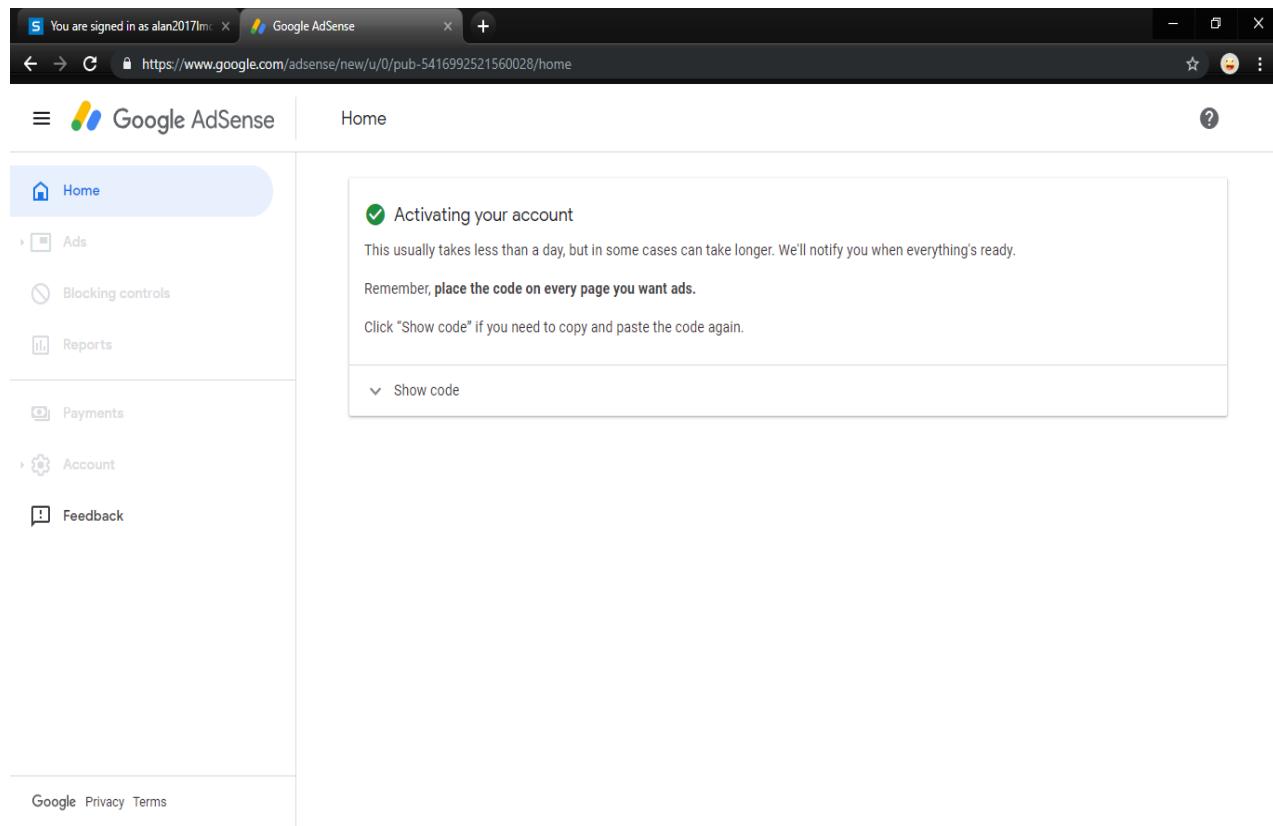


The screenshot shows the Google AdSense Home page. On the left, there is a sidebar with links: Home, Ads, Blocking controls, Reports, Payments, Account, and Feedback. The main content area has a blue header with a cartoon illustration of a person at a desk with a computer and a coffee cup. Below the header, the text "Connect your site to AdSense" is displayed, followed by instructions: "Use the following ad code to activate your account and start showing ads." A numbered list provides steps: 1. Copy the code below, 2. Paste it into the HTML of <http://cardealscomparison.ml>, between the <head> and </head> tags, and 3. Check the box and click done when you finish. There is a link for "WordPress user? Get help with adding AdSense code." Below this, there is a field for "URL of your site" containing <http://cardealscomparison.ml>. A code block shows the JavaScript code to be copied:

```
<script async src="//pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></script>
<script>
  (adsbygoogle = window.adsbygoogle || []).push({
    google_ad_client: "ca-pub-5416992521560028",
    enable_page_level_ads: true
  });
</script>
```

A "COPY" button is present. Below the code, there is a checked checkbox for "Show ads as soon as account is ready. Learn more" and a note: "If you have visitors from the European Economic Area (EEA), you may wish to uncheck this box to make sure you're complying with Google's EU user".

Wait for Activation



The screenshot shows the Google AdSense Home page again. The sidebar and main layout are identical to the previous screenshot. In the main content area, there is a section titled "Activating your account" with a green checkmark icon. It says: "This usually takes less than a day, but in some cases can take longer. We'll notify you when everything's ready." Below this, there is a note: "Remember, place the code on every page you want ads." and a link: "Click "Show code" if you need to copy and paste the code again." At the bottom of this section, there is a "Show code" button with a dropdown arrow.

4.3 GOOGLE WEBMASTERS

4.3.1 INTRODUCTION TO GOOGLE WEBMASTERS

Google Webmaster Tools (GWT) is the primary mechanism for Google to communicate with webmasters. Google Webmaster Tools helps you to identify issues with your site and can even let you know if it has been infected with malware (not something you ever want to see, but if you haven't spotted it yourself, or had one of your users tweet at you to let you know, it's invaluable). And also, GWT let you evaluate and maintain your website's performance in search results Offered as a free service to anyone who owns a website, Google Webmaster Tools (GWT) is a conduit of information from the largest search engine in the world to you, offering insights into how it sees your website and helping you uncover issues that need fixing. You do not need to use GWT for your website to appear in search results, but it can offer you valuable information that can help with your marketing efforts.

How GWT can help monitor your website's performance

1. It verifies that Google can access the content on your website.
2. GWT makes it possible to submit new pages and posts for Google to crawl and remove content you don't want search engine users to discover.
3. It helps you deliver and evaluate content that offers users a more visual experience.
4. You can maintain your website without disrupting its presence in search results.
5. It allows you to discover and eliminate malware or spam problems that may not be easily found through other means.

4.3.2 IMPLEMENTATION OF ROBOTS.TXT

Robots.txt is a text (not html) file you put on your site to tell search robots which pages you would like them not to visit. Robots.txt is by no means mandatory for search engines but generally search engines obey what they are asked not to do. It is important to clarify that robots.txt is not a way from preventing search engines from crawling your site (i.e. it is not a firewall, or a kind of password protection) and the fact that you put a robots.txt file is something like putting a note “Please, do not enter” on an unlocked door – e.g. you cannot prevent thieves from coming in but the good guys will not open the door and enter. That is why we say that if you have really sensitive data, it is too naïve to rely on robots.txt to protect it from being indexed and displayed in search results.

The location of robots.txt is very important. It must be in the main directory because otherwise user agents (search engines) will not be able to find it – they do not search the whole site for a file named robots.txt. Instead, they look first in the main directory (i.e. <http://mydomain.com/robots.txt>) and if they don't find it there, they simply assume that this site does not have a robots.txt file and therefore they index everything they find along the way.

Structure of a Robots.txt File

The structure of a robots.txt is pretty simple (and barely flexible) – it is an endless list of user agents and disallowed files and directories. Basically, the syntax is as follows:

User-agent:

Disallow:

“*User-agent*” are search engines' crawlers and *disallow*: lists the files and directories to be excluded from indexing. In addition to “*user-agent*” and “*disallow*” entries, you can include comment lines – just put the # sign at the beginning of the line:

```
# All user agents are disallowed to see the /temp directory.
```

User-agent: *

Disallow: /temp/

PART 5

SERVER SECURITY AND PENETRATION TESTING

5.1 DATA SECURITY

Data security refers to protective digital privacy measures that are applied to prevent unauthorized access to computers, databases, and websites. Data security also protects data from corruption. Data security is an essential aspect of IT for organizations of every size and type. Examples of data security technologies include backups, data masking, and data erasure. The core of the data security technology is encryption, where digital data, software/hardware, and hard drives are encrypted and therefore rendered unreadable to unauthorized users and hackers.

Different Ways to Enhance Data Security

- 1.Limit Data Access
- 2.Identify Sensitive Data
- 3.Pre-planned Data Security Policy

5.2 HTTPS USING .HTACCESS FILE

.htaccess is a configuration file for use on web servers running the Apache Web Server software. When a .htaccess file is placed in a directory which is in turn 'loaded via the Apache Web Server', then the .htaccess file is detected and executed by the Apache Web Server software. These .htaccess files can be used to alter the configuration of the Apache Web Server software to enable/disable additional functionality and features that the Apache Web Server software has to offer. These facilities include basic redirect functionality, for instance, if a 404 file not found error occurs, or for more advanced functions such as content password protection or image hotlink prevention.

How to force HTTPS using a .htaccess file in cPanel

Once an SSL certificate is installed and a site can be reached via https:// appropriately, visitors should be able to access the whole site or key pages via https:// automatically. In other words, by typing domain.com in a web-browser, a user should be redirected to https://domain.com to access the site securely. To accomplish this, a special set of directives called rewrite rules needs to be added to the website's .htaccess file, which can be found in the root folder of a specific site in cPanel (e.g. "public_html"). If the file is not shown, please make sure to click on 'Settings' and tick the option 'Show hidden files'. Also, this file can be created if it cannot be located in any way.

Redirect Only Specified Domain

To force a specific domain to use HTTPS, use the following lines of code in the .htaccess file in your website's root folder:

```
RewriteEngine on
RewriteOptions inherit
RewriteCond %{HTTPS} off
RewriteCond %{REQUEST_URI} !^/[0-9]+\..+\cpaneldcv$
RewriteCond %{REQUEST_URI} !^/[A-F0-9]{32}\.txt(?:\ Comodo\ DCV)?$
RewriteCond %{REQUEST_URI} !^/\well-known/pki-validation/[A-F0-9]{32}\.txt(?:\ Comodo\ DCV)?$
RewriteRule ^(.*)$ https://%\{HTTP_HOST%\}\{REQUEST_URI\} [L,R=301]
RewriteCond %{REQUEST_FILENAME} !-f
RewriteRule ^([^\.]+)\$ \$1.php [NC,L]
```

5.3 MODSECURITY TOOLS

The *ModSecurity Tools* interface allows you to install and manage ModSecurity rules. This interface can be accessed from cPanel & WHM (Home > Security Center > ModSecurity Tools)

What is ModSecurity and why you need it?

Mod Security is an open source, embedded web application firewall which protects your website and its applications against various attacks by blocking malicious scripts, programs and injections with the help of regular expressions and set of rules. And It is a module for Apache web servers and checks all HTTP requests that reach Apache and Nginx- supplementary web server of Apache.

What can Mod Security do to protect your website?

The Mod Security engine scans all the requests which come to the web server and relative responses which are sent from the server as per its set of rules. If the check succeeds, the HTTP request is passed to the website content but if it fails, then it blocks the request and performs following actions:

- Security monitoring and access control
- Virtual Patching
- Full HTTP traffic logging
- Security assessment
- Web application hardening
- Passive security assessment
- Simple request or Regular expression-based Filtering
- URL Encoding Validation
- Auditing
- IP Reputation

5.4 OWASP

The **Open Web Application Security Project (OWASP)**, an online community, produces freely-available articles, methodologies, documentation, tools, and technologies in the field of web application security. The Open Web Application Security Project (OWASP) is a worldwide not-for-profit charitable organization focused on improving the security of software. OWASP Operating as a community of like-minded professionals, OWASP issues software tools and knowledge-based

documentation on application security. All of its articles, methodologies, and technologies are made available free of charge to the public.

OWASP seeks to educate developers, designers, architects and business owners about the risks associated with the most common Web application security vulnerabilities. OWASP, which supports both open source and commercial security products, has become known as a forum in which information technology professionals can network and build expertise. The organization publishes a popular Top Ten list that explains the most dangerous Web application security flaws and provides recommendations for dealing with those flaws.

OWASP tools, document and code library projects are organized into three categories, tools and documents that can be used to find security-related design and implementation flaws, tools and documents that can be used to guard against security-related design and implementation flaws and tools and documents that can be used to add security-related activities into the application lifecycle management (ALM).

The Open Web Application Security Protocol team released the top 10 vulnerabilities that are more prevalent on the web in the recent years.

The OWASP Top Ten is a list of the 10 most dangerous current Web application security flaws along with effective methods of dealing with those flaws, which tracks the top software security vulnerabilities

1. Unvalidated input.
2. Broken access control.
3. Broken authentication and session management.
4. Cross-site scripting (XSS) flaws.
5. Buffer overflows.
6. Injection flaws.
7. Improper error handling.
8. Insecure storage.
9. Denial of service (DoS).

5.5 KALI LINUX TOOLS

5.5.1 INTRODUCTION TO KALI LINUX TOOLS

Kali Linux is the world's most powerful and popular penetration testing platform, used by security professionals in a wide range of specializations, including penetration testing, forensics, reverse engineering, and vulnerability assessment. It is the culmination of years of refinement and the result of a continuous evolution of the platform, from WHoppiX to WHAX, to BackTrack, and now to a complete penetration testing framework leveraging many features of Debian GNU/Linux and the vibrant open source community worldwide. Kali contains several hundred tools which are geared towards various information security tasks, such as Penetration Testing, Security research, Computer Forensics and Reverse Engineering. Kali Linux was released on the 13th March 2013 as a complete, top-to-bottom rebuild of Backtrack Linux, adhering completely to Debian development standards.

Major Kali Linux Penetration Testing tools

- **Sqlmap**

sqlmap is an open source penetration testing tool that automates the process of detecting and exploiting SQL injection flaws and taking over of database servers. It comes with a powerful detection engine, many niche features for the ultimate penetration tester and a broad range of switches lasting from database fingerprinting, over data fetching from the database.

- **Metasploit Framework**

Metasploit is a penetration testing platform that enables you to find, exploit, and validate vulnerabilities. It provides the infrastructure, content, and tools to perform penetration tests and extensive security auditing and thanks to the open source community and Rapid7's own hard-working content team, new modules are added on a regular basis.

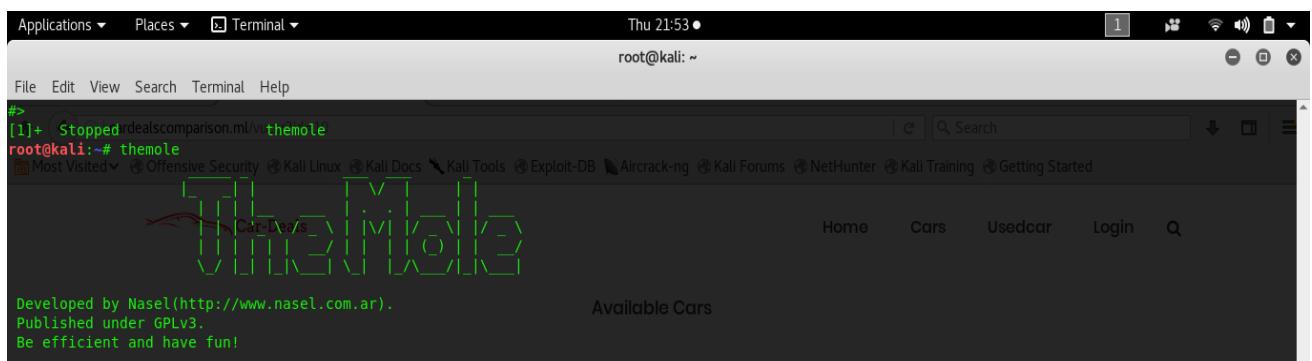
- **Hashcat**

hashcat is the world's fastest and most advanced password recovery utility, supporting five unique modes of attack for over 200 highly-optimized hashing algorithms. hashcat currently supports CPUs, GPUs, and other hardware accelerators on Linux, Windows, and OSX, and has facilities to help enable distributed password cracking.

Testing with The Mole

Mole is a programmed automatic SQL Injection exploitation tool. Just by giving a vulnerable URL and a substantial string on the site it can recognize the injection and exploit it, either by utilizing the union method or a Boolean question-based system. The Mole utilizes a command-based interface, permitting the client to show the activity he needs to perform effectively. The CLI likewise gives auto-completion on both commands and command arguments, making the user sort as less as could be expected under the possibilities.

- Download and open themole.exe file
- Once a command-line interface is opened, use the following commands

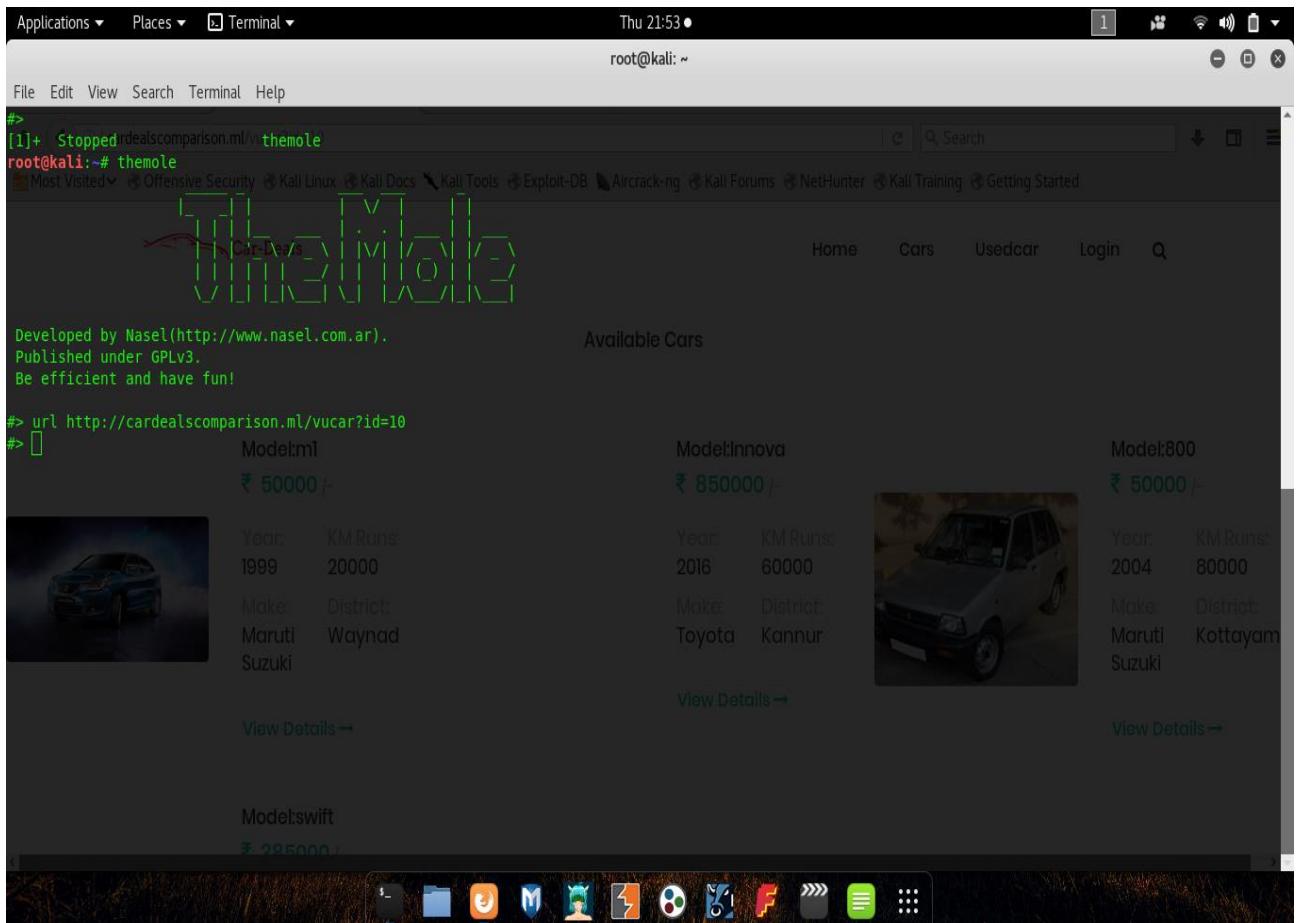


The screenshot shows a Kali Linux desktop environment with a terminal window open. The terminal window title is 'Terminal'. The terminal content shows the following session:

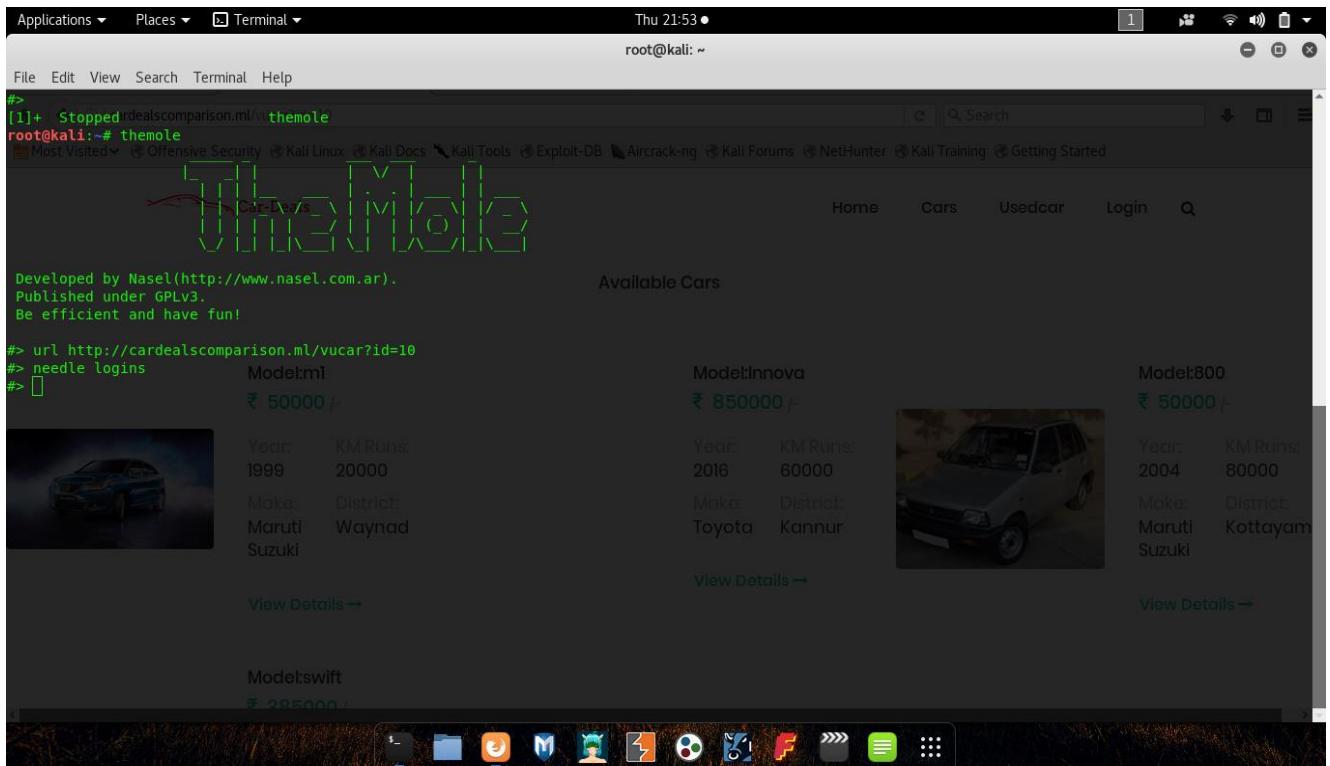
```
#> [1]+ Stopped dealscmparison.ml/www.themole
root@kali:~# themole
```

The terminal is running as root ('root@kali:~'). The background shows a web browser window displaying a car rental website with a search bar and navigation links like 'Home', 'Cars', 'Usedcar', and 'Login'.

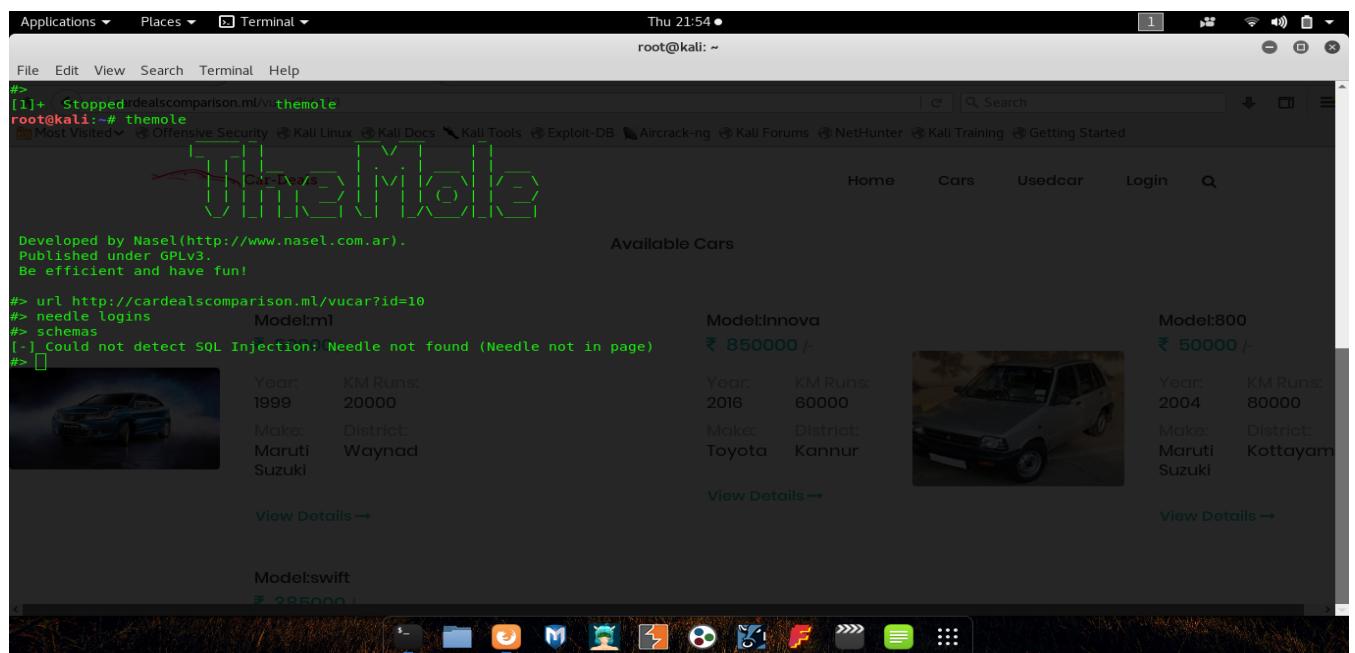
- url http://www.yourwebsite.com/page.php?id=numeric_value



- Now find out any keywords available on the website, it may anything means any word find you on this site, I'm using logins.
- needle logins



- finally, use command schemas to fetch tables



Output:

Could not Detect SQL Injection

PART 6

TECHNOLOGY FRAMEWORKS

6.1 LARAVEL



6.1.1 LARAVEL - OVERVIEW

Laravel is an open-source PHP framework, is robust as well as simple to learn. In simpler form, it is an open-source web application development framework written in PHP. It follows a model-view-controller design pattern. Taylor Otwell created Laravel and released under MIT license. Laravel reuses the existing elements of various frameworks which aid in building a web application.

Laravel offers a rich collection of functionalities which consolidates the primary characteristics of PHP frameworks like Code Igniter, Yii and different programming languages like Ruby on Rails. Laravel has a vibrant set of features which will heighten the pace of web development. Laravel is the most successful elected web development aloft other PHP based MVC frameworks due to its integrity, execution, scalability, and features.

Laravel is an MVC framework with bundles, migrations, and Artisan CLI. Laravel offers a robust set of tools and an application architecture that incorporates many of the best features of frameworks like CodeIgniter, Yii, ASP.NET MVC, Ruby on Rails, Sinatra, and others.

Laravel is an Open Source framework. It has a very rich set of features which will boost the speed of Web Development. If you familiar with Core PHP and Advanced PHP, Laravel will make your task easier. It will save a lot time if you are planning to develop a website from scratch. Not only that, the website built in Laravel is also secure. It prevents the various attacks that can take place on websites.

Laravel is a compelling model view controller (MVC) architectural pattern PHP framework, an open-source web application development intended for developers who demand an uncomplicated and rich toolkit to build full-featured web applications. Laravel is a PHP framework which makes it effortless for you to produce professional web application by following refined coding standards and architectural pattern. This concise tutorial illustrates the basics of the Laravel framework.

Why Laravel?

- Assists professional and advanced web development exercises.
- Promotes rapid as well as reliable web application development
- Makes development, deployment, and maintenance flexible and pleasant.
- Inherent Syntax.
- An elegant set of convenient and advanced built-in features.
- Laravel is the Utmost promising PHP based MVC framework.
- Pretty adequately documented and has the large community of active members.
- And the most desirable and promising thing is it is easy to learn and understand.

Advantages of Laravel

- Built-in Libraries.
- Built-in CLI.
- Built-in Template engine.
- Modular.
- Migration System.
- Error plus Exception Handling.
- Test Driven Development (TDD).
- Security.
- Follows MVC Architecture.
- Built-in ORM (object-relational mapping).

Features of Laravel

- Class Auto loading
- IOC container
- Migration
- Query builder
- Artisan console
- Database Seeding
- Unit-Testing
- Application Logic
- Automatic Pagination
- Form Pagination
- Restful Controllers
- Reverse Routing
- The Eloquent ORM
- View Composers
- Form request
- Bundles

Composer

A composer is a tool, incorporates all the dominions and libraries. It enables a user to generate a project concerning the specified framework (for instance, those adopted in Laravel installation). Third party libraries can be installed efficiently with the help of composer.

Artisan

Command Line Interface Utilised in Laravel Is Named Artisan. It Comprises A Collection of Commands Which Aids in Developing A Web Application. These Commands Are Consolidated from The Symphony Framework, Appearing in Add-On Hallmarks in Laravel 5.1 (Latest Version of Laravel).

6.1.2 LARAVEL – INSTALLATION

Laravel Prerequisites

- PHP >= 5.6.4
- OpenSSL PHP Extension
- Tokenizer PHP Extension
- Mbstring PHP Extension
- XML PHP Extension
- Xampp or Wampp server installed and configured
- PDO PHP Extension

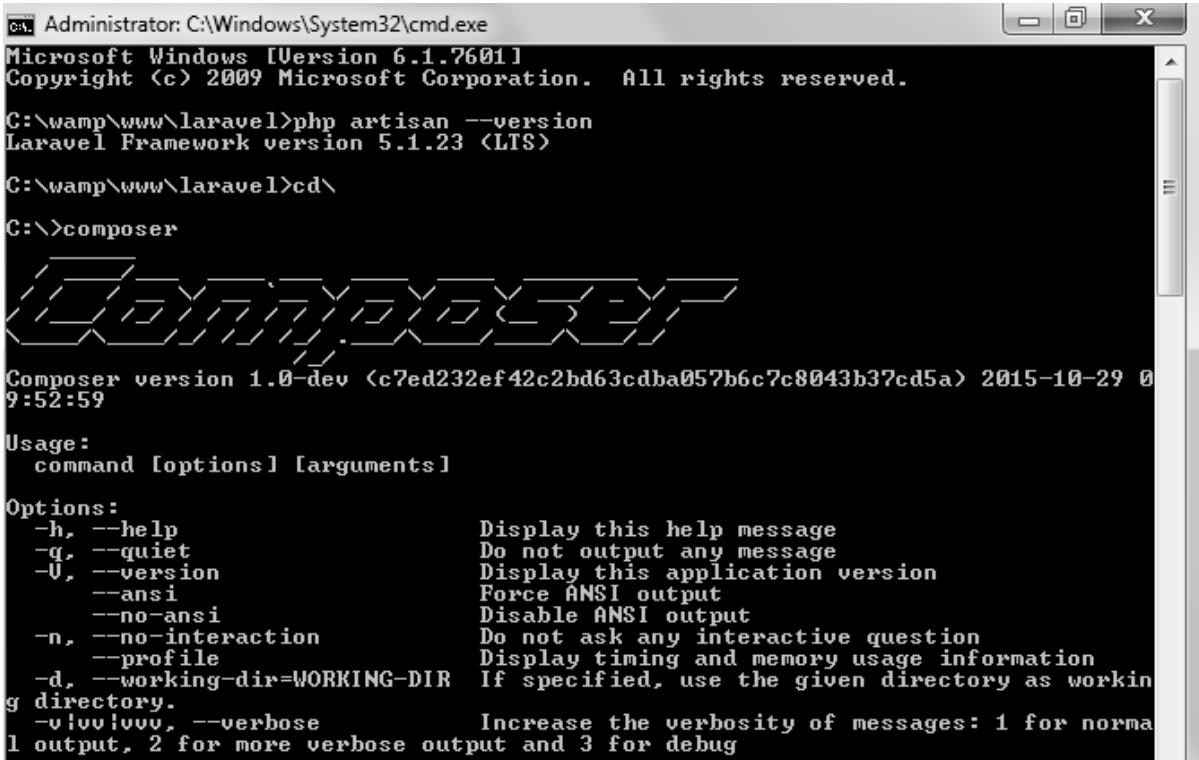
Step 1:

Visit the below-mentioned URL and download composer to install it on your system.

<https://getcomposer.org/download/>

Step 2:

After downloading composer, open the command prompt browse to the web server root directory or localhost folder.



The screenshot shows a Windows Command Prompt window titled "Administrator: C:\Windows\System32\cmd.exe". The window displays the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright <c> 2009 Microsoft Corporation. All rights reserved.

C:\wamp\www\laravel>php artisan --version
Laravel Framework version 5.1.23 (LTS)

C:\wamp\www\laravel>cd\
C:\>composer



Composer version 1.0-dev (c7ed232ef42c2bd63cdba057b6c7c8043b37cd5a) 2015-10-29 0
9:52:59

Usage:
  command [options] [arguments]

Options:
  -h, --help           Display this help message
  -q, --quiet          Do not output any message
  -V, --version         Display this application version
  --ansi               Force ANSI output
  --no-ansi             Disable ANSI output
  --no-interaction     Do not ask any interactive question
  --profile             Display timing and memory usage information
  -d, --working-dir=WORKING-DIR If specified, use the given directory as working directory.
  -v|vv|vvv, --verbose Increase the verbosity of messages: 1 for normal output, 2 for more verbose output and 3 for debug
```

Step 3:

Of course, first you will need a fresh installation of the Laravel framework. You may use the Homestead virtual machine or the local PHP environment of your choice to run the framework. Once your local environment is ready, you may install the Laravel framework using Composer:
composer global require "Laravel/installer"

```
[ahmed92]:public_html$ composer global require "laravel/installer"
Changed current directory to /home/master/.composer
You are running composer with xdebug enabled. This has a major impact on runtime
  performance. See https://getcomposer.org/xdebug
Using version ^1.3 for laravel/installer
./composer.json has been updated
Loading composer repositories with package information
Updating dependencies (including require-dev)
- Installing symfony/process (v3.2.0)
  Downloading: 100%
- Installing psr/log (1.0.2)
  Loading from cache
```

This command will install Laravel Installer. The most important benefit of Laravel Installer is the ease of starting new projects. A new Laravel project could be easily created by a single, easy-to-remember command.

command to create a new project: **Laravel new <project name>**

```
C:\xampp\htdocs>laravel new blog
Crafting application...
Loading composer repositories with package information
Installing dependencies (including require-dev) from lock file
- Installing jakub-onderka/php-console-color (0.1)
  Loading from cache
- Installing vlucas/phpdotenv (v2.4.0)
  Loading from cache
- Installing symfony/polyfill-mbstring (v1.3.0)
  Loading from cache
- Installing symfony/var-dumper (v3.1.7)
  Downloading: 100%
- Installing symfony/translation (v3.1.7)
  Downloading: Connecting....
```

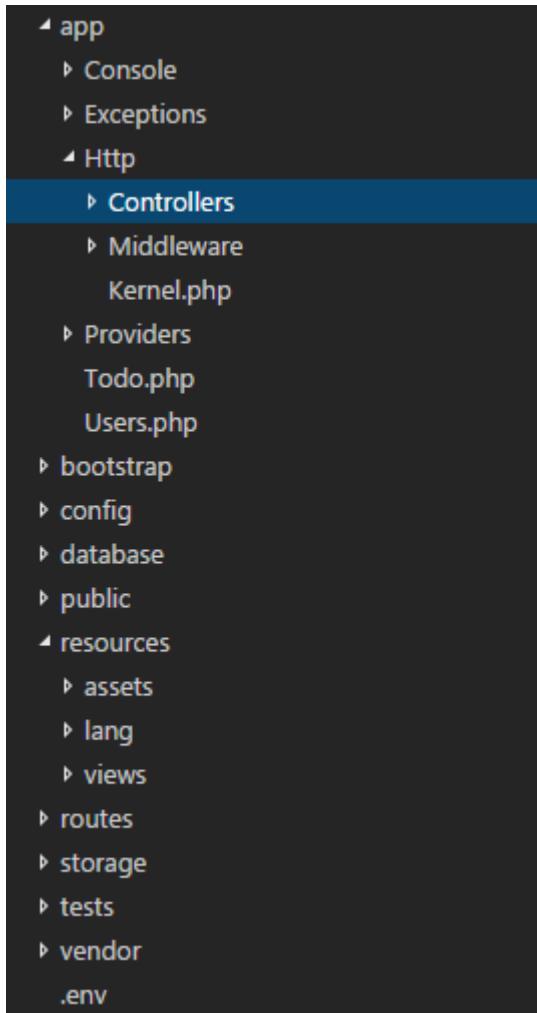
The second method of installation is through Composer **create-project** command.

In the root directory, create a new folder and name it **Laravel**. Now on the command line, go to the **Laravel** folder and use the following code to install Laravel.

composer create-project --prefer-dist Laravel/Laravel <project name>

```
[ahmed92]:laravel5.4$ composer create-project --prefer-dist laravel/laravel blog
Installing laravel/laravel (v5.4.0)
- Installing laravel/laravel (v5.4.0) Downloading: 100%
Created project in blog
> php -r "file_exists('.env') || copy('.env.example', '.env');"
Loading composer repositories with package information
Updating dependencies (including require-dev)
Package operations: 59 installs, 0 updates, 0 removals
- Installing symfony/polyfill-mbstring (v1.3.0) Loading from cache
- Installing symfony/var-dumper (v3.2.2) Downloading: 100%
- Installing jakub-onderka/php-console-color (0.1) Loading from cache
- Installing jakub-onderka/php-console-highlighter (v0.3.2) Loading from cache
- Installing dnoegel/php-xdg-base-dir (0.1) Loading from cache
- Installing nikic/php-parser (v3.0.2) Loading from cache
- Installing psr/log (1.0.2) Loading from cache
- Installing symfony/debug (v3.2.2) Downloading: 100%
- Installing symfony/console (v3.2.2) Downloading: 100%
- Installing psy/psysh (v0.8.1) Downloading: 100%
- Installing vlucas/phpdotenv (v2.4.0) Loading from cache
- Installing symfony/css-selector (v3.2.2) Downloading: 100%
- Installing tijssverkoyen/css-to-inline-styles (2.2.0) Downloading: 100%
- Installing symfony/routing (v3.2.2) Downloading: 100%
```

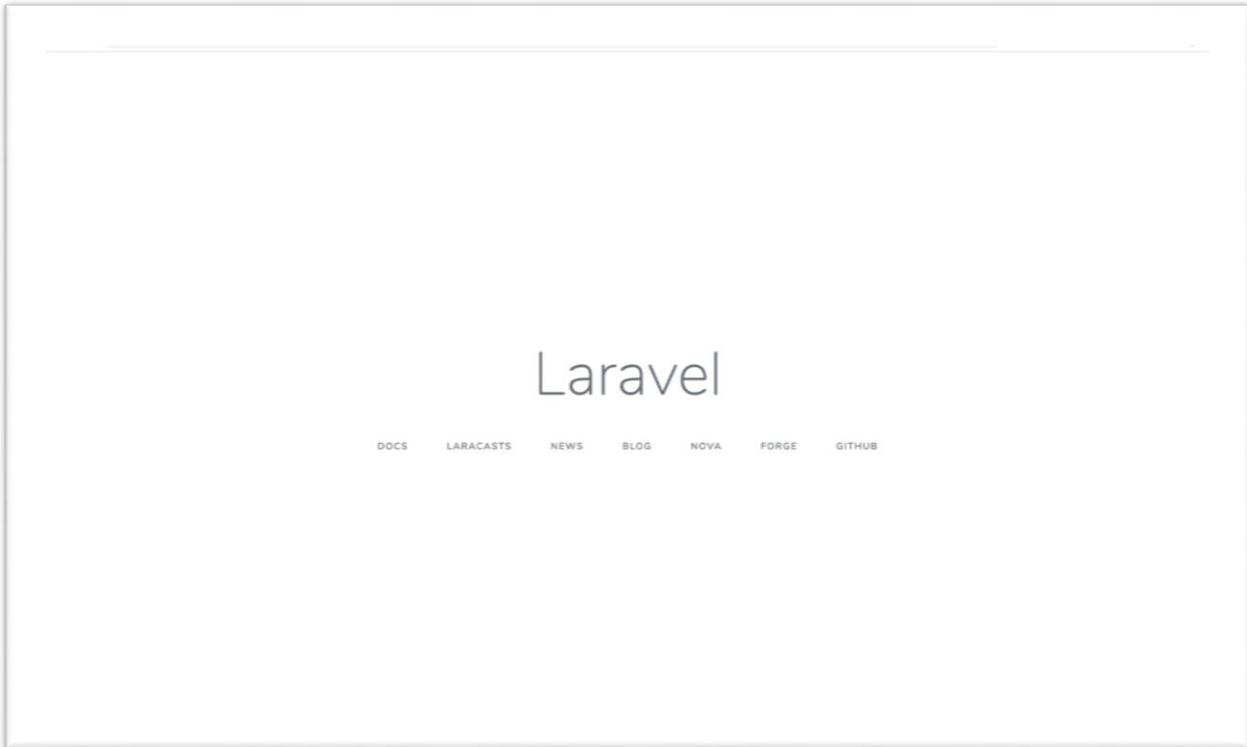
Now a new Laravel project has been created. Navigate to the new install directory. The folder structure for a Laravel project is shown below.



The app folder in the Laravel contains the Models and Controllers of the application. Models are created in the root of the app folder, whereas Controllers and Middleware's are created in their respective folders inside the Http folder. Views in Laravel are created in views folder inside

the resources folder. Routing for controllers is handled by the Web.php file located inside the routes folder.

At this point, you have a working installation of Laravel on the local host. To test the integrity of the installation, launch the browser and go to **localhost/<project name>/public**.



LARAVEL ROUTING AND HOW LARVEL ROUTING WORKS

Routing is one of the essential and can consider as the core components of the Laravel framework, in In Laravel, all requests are outlined with the guidance of routes. All Laravel routes are determined in the file located as the app/Http/routes.php file, which is automatically stored and loaded by the framework. Primary routing named as basic routing routes the call may be referred as a request to the associated controllers. This **Laravel routing tutorial** addresses routing in Laravel.

ROUTING IN LARAVEL COMPRISSES THE FOLLOWING CATEGORIES.

- Basic Routing
- Route parameters
- Named Routes

BASIC ROUTING

All the application routes registered itself within the app/routes.php file. This file shows Laravel for the URIs it should counter to and the associated controller will dispense it a correct call.

A very basic routes are expressed as follows-

```
Route::get('/', function () {
    return 'You are welcome to the Laravel Site.';
});
```

It accepts two parameters URL and Closure.

These are the most straightforward routes determined as they don't need you to pass to anything other than the corresponding view. You don't require to log in or give any **Laravel routing parameters** in their route's description or definition.

ACCESSING THE REQUEST – LARAVEL TUTORIAL

To retrieve an occurrence or instance of the current HTTP **Laravel request object** through dependency injection, you need to type-hint the Illuminate\Http\Request class on your controller system or method. The service container will automatically insert or inject the incoming request instance.

```
<?php
namespace App\Http\Controllers;
use Illuminate\Http\Request;
class UserController extends Controller
{
    public function store(Request $request)
    {
        $name = $request->input('name');
    }
}
```

ROUTE PARAMETERS

If the input is also getting expected by the controller method from a route parameter, you must list your route parameters following your different dependencies. For instance, if your route is determined like so:

```
Route::put('user/{id}', 'UserController@update');
```

```
<?php  
namespace App\Http\Controllers;  
use Illuminate\Http\Request;  
class UserController extends Controller  
{  
    public function update(Request $request, $id)  
    {  
        //code  
    }  
}
```

6.1.3 INTRODUCTION TO LARAVEL CONTROLLERS

Preferably of determining all of your request administration or handling logic as Closures in route files, you may prefer to build this action applying or using Controller classes. Controllers can group associated request handling logic within a single category or class. Controllers are saved or stored in the app/Http/Controllers of **Laravel controller constructor** directory.

In the MVC framework, the character ‘C’ stands for Controller. It operates as governing traffic connecting Views and Models. In this chapter, you will discover and learn in depth about Controllers in Laravel.

CREATING CONTROLLERS

Initiate the command prompt or terminal based on the working system you are utilizing and type the following command to generate or create a controller applying the Artisan CLI (Command Line Interface).

php artisan make:controller <controller-name> –plain

You can now replace the <controller-name> with the name of your desired controller, will produce a plain constructor as we are transferring or passing the argument — plain. If you don’t

require to generate a plain constructor, you can neglect the argument. The created constructor can be viewed at app/Http/Controllers.

You can append your custom coding as you will see the basic coding has already been done for you. The generated controller may be called from routes.php by the following syntax. The example given below is a basic controller class. Perceive that the **Laravel controller constructor** elongates the base controller class involved with Laravel. The base class implements a few convenience systems or method such as the middleware method, which can be applied to append middleware to controller operations:

```
Route::get('base URI','controller@method');

<?php
namespace App\Http\Controllers;
use App\User;
use App\Http\Controllers\Controller;
class UserController extends Controller
{
    public function show($id)
    {
        return view('user.profile', ['user' => User::findOrFail($id)]);
    }
}
```

Resource Controllers

Laravel resource routing specifies or assigns the typical “CRUD” routes to a controller including a single line of code. For instance, you may crave to build or create a controller that controls all HTTP requests for “photos” cached by your application.

Php artisan make: controller

php artisan make: controller PhotoController –resource

This command as mentioned earlier will help to generate a controller at app/Http/Controllers/PhotoController.php. The controller will comprise a method for each of the accessible resource operations.

Ensuing, you can record an original and resourceful route to the controller:

```
Route::resource('photos', 'PhotoController');
```

This particular, as well as single route declaration, produces various routes to manipulate or handle a variety of activities on the resource.

6.2 MICROSOFT ASP .NET



ASP.NET | MVC | Web API

6.2.1 ASP.NET MVC – OVERVIEW

ASP.NET MVC is basically a web development framework from Microsoft, which combines the features of MVC (Model-View-Controller) architecture, the most up-to-date ideas and techniques from Agile development, and the best parts of the existing ASP.NET platform. ASP.NET MVC is not something, which is built from ground zero. It is a complete alternative to traditional ASP.NET Web Forms. It is built on the top of ASP.NET, so developers enjoy almost all the ASP.NET features while building the MVC application.

Microsoft decided to create their own MVC framework for building web applications. The MVC framework simply builds on top of ASP.NET. Another design goal for ASP.NET MVC was to be extensible throughout all aspects of the framework. The whole idea behind using the Model View Controller design pattern is that you maintain a separation of concerns.

Benefits of ASP.NET MVC

Following are the benefits of using ASP.NET MVC:

- Makes it easier to manage complexity by dividing an application into the model, the view, and the controller.
- Enables full control over the rendered HTML and provides a clean separation of concerns.
- Direct control over HTML also means better accessibility for implementing compliance with evolving Web standards.
- Facilitates adding more interactivity and responsiveness to existing apps.
- Provides better support for test-driven development (TDD).
- Works well for Web applications that are supported by large teams of developers and
- for Web designers who need a high degree of control over the application behaviour.

6.2.2 ASP.NET MVC – MVC PATTERN

The MVC architectural pattern separates the user interface (UI) of an application into three main parts

Models

Model objects are parts of the application which implement the logic for the application's data domain. It retrieves and stores model state in a database. For example, product object might retrieve information from a database, operate on it. Then write information back to products table in the SQL server.

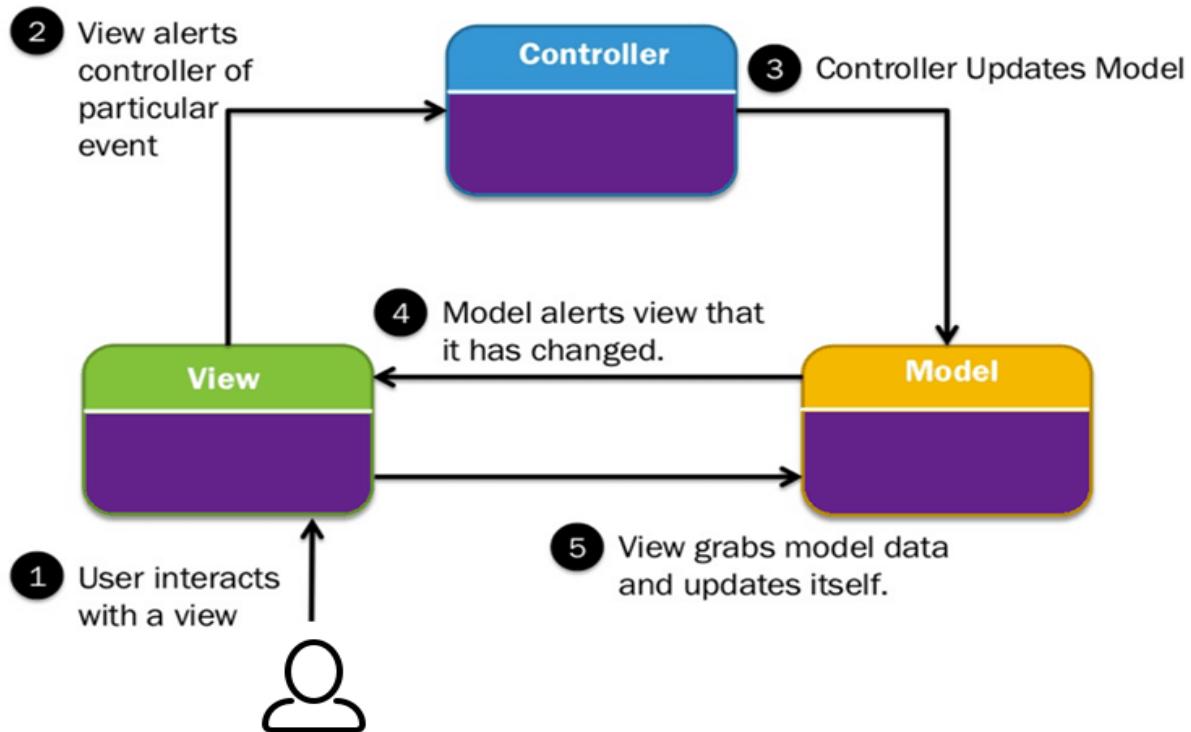
Views

View are the components which are used to display the application's user interface (UI). It displays the .Net MVC application's which is created from the model data.

The common example would be an edit view of an Item table. It displays text boxes, pop-ups and checks boxes based on the current state of products & object.

Controller

Controllers handle user interaction, work with the model, and select a view to render that displays UI. In a .Net MVC app, the view only displays information, the controller manages and responds to user input & interaction.



The idea is that you'll have a component called the view, which is solely responsible for rendering this user interface. The view talks to a model, and that model contains all of the data that the view needs to display. Views generally don't have much logic inside of them at all. The controller that organizes is everything. When an HTTP request arrives for an MVC application, that request gets routed to a controller, and then it's up to the controller to talk to either the database, the file system, or the model.

ActiveX server pages

For that Microsoft produce first answer as ActiveX server pages (ASP) in this all code was written on same page (scripts and server code which became hard to understand and Maintain) after that to overcome these things Microsoft produce another solution as Asp.net Web Forms.

ASP.NET Web Forms

Asp.net Web Forms was solution for problem of ASP. The Web Forms came with separation of code in this we have separate UI and server code (HTML | SERVER) this became easy to developer to develop application and fast too. This was best Framework of many developers and many websites are been develop from it. But problem with Frame work was that we cannot reuse code because (**.aspx.cs**) which is tightly coupled with (**.aspx**) and this also create problem while testing application because we cannot isolate this application because of tight coupling. For that Microsoft came with new flavour for web developing platform was MVC.

6.2.3 ASP.NET MVC – ENVIRONMENT SETUP

MVC development tool is included with Visual Studio 2012 and onwards. It can also be installed on Visual Studio 2010 SP1/Visual Web Developer 2010 Express SP1. If you are using Visual Studio 2010, Install MVC 4 using the Web Platform Installer

<http://www.microsoft.com/web/gallery/install.aspx?appid=MVC4VS2010>

Microsoft provides a free version of Visual Studio, which also contains SQL Server and it can be downloaded from

[https://www.visualstudio.com/en-us/downloads/download-visualstudio-vs.aspx.](https://www.visualstudio.com/en-us/downloads/download-visualstudio-vs.aspx)

To develop MVC application we need Visual studio 2010 with Service Pack 1 version. If you are using Visual studio higher then Visual studio 2010 SP1 then it will good for development.

for completing the process, we require good internet connection.



Microsoft Visual Studio 2010 Service Pack 1 (Installer)



This web installer downloads and installs Visual Studio 2010 Service Pack 1. An Internet connection is required during installation. See the 'Additional Information' section below for alternative (ISO) download options. Please Note: This installer is for all editions of Visual Studio 2010 (Express, Professional, Premium, Ultimate, Test Professional).

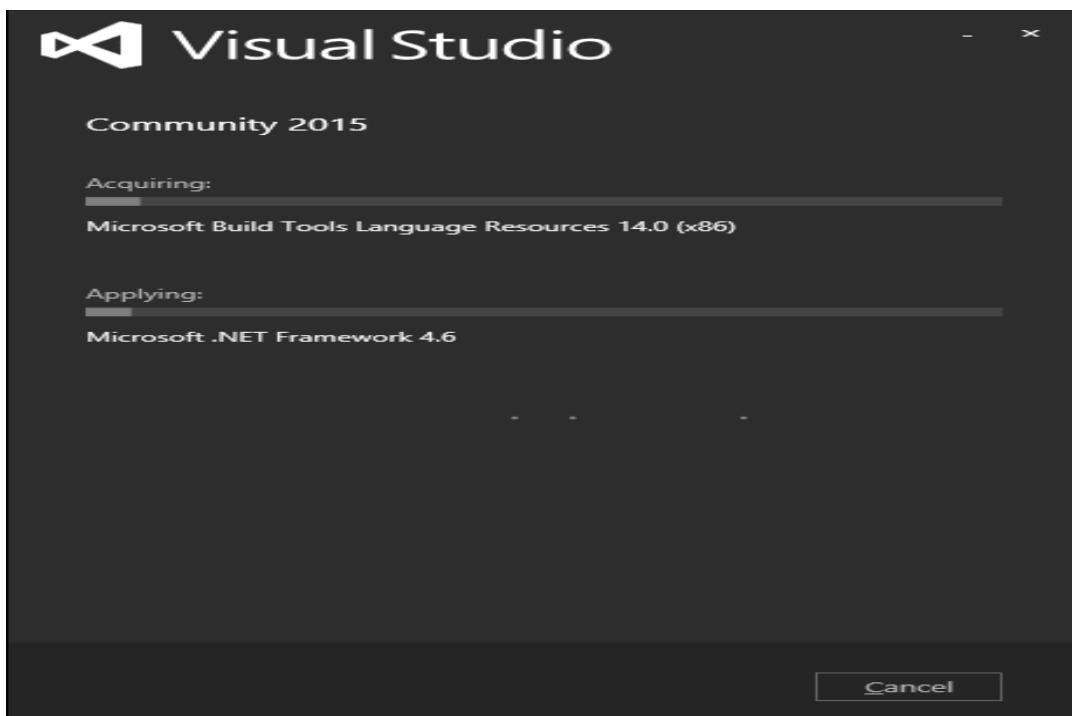
Installation

Step (1): Once download



in is complete, run the installer. The following dialog will be displayed.

Step (2): Click the 'Install' button and it will start the installation process.

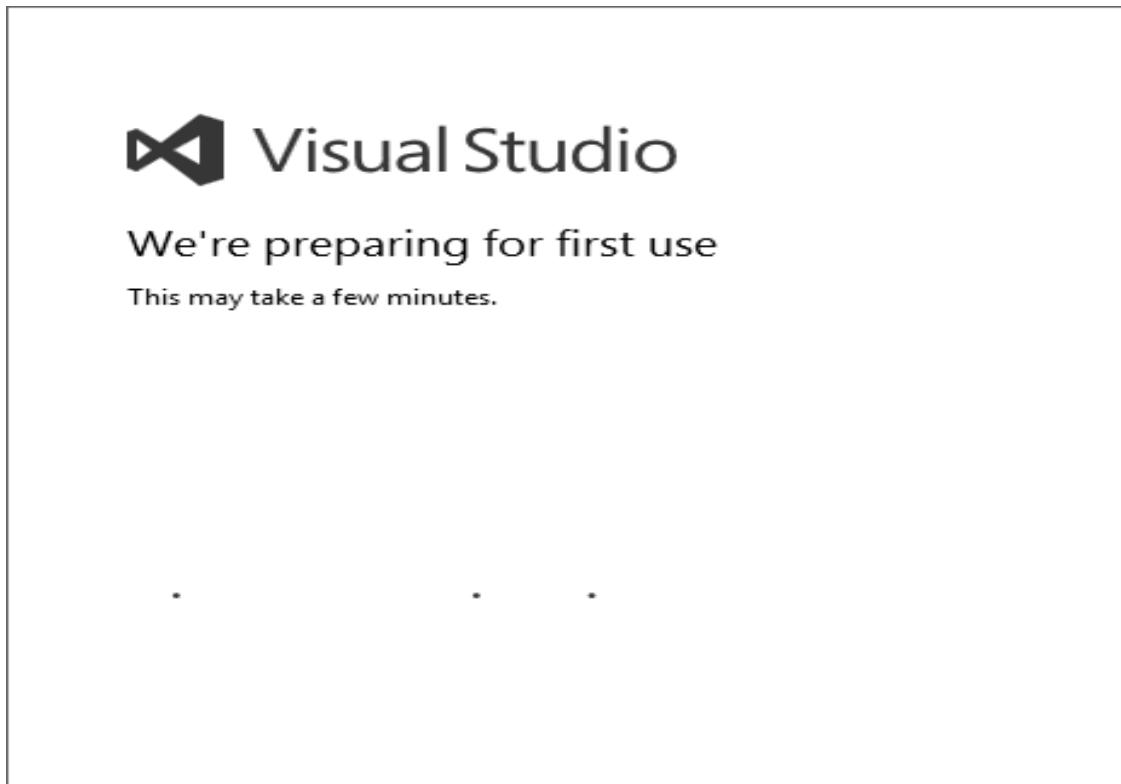


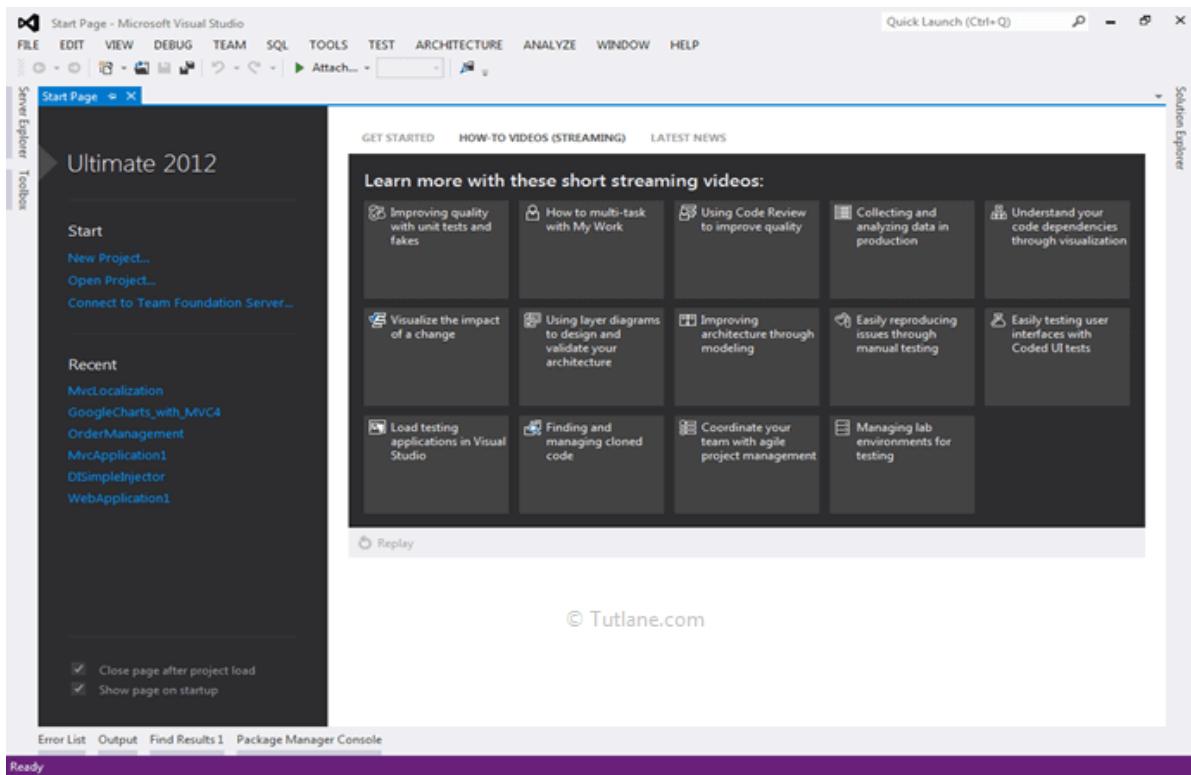
Once the installation process is completed successfully, you will see the following dialog.



Step (3): Close this dialog and restart your computer if required.

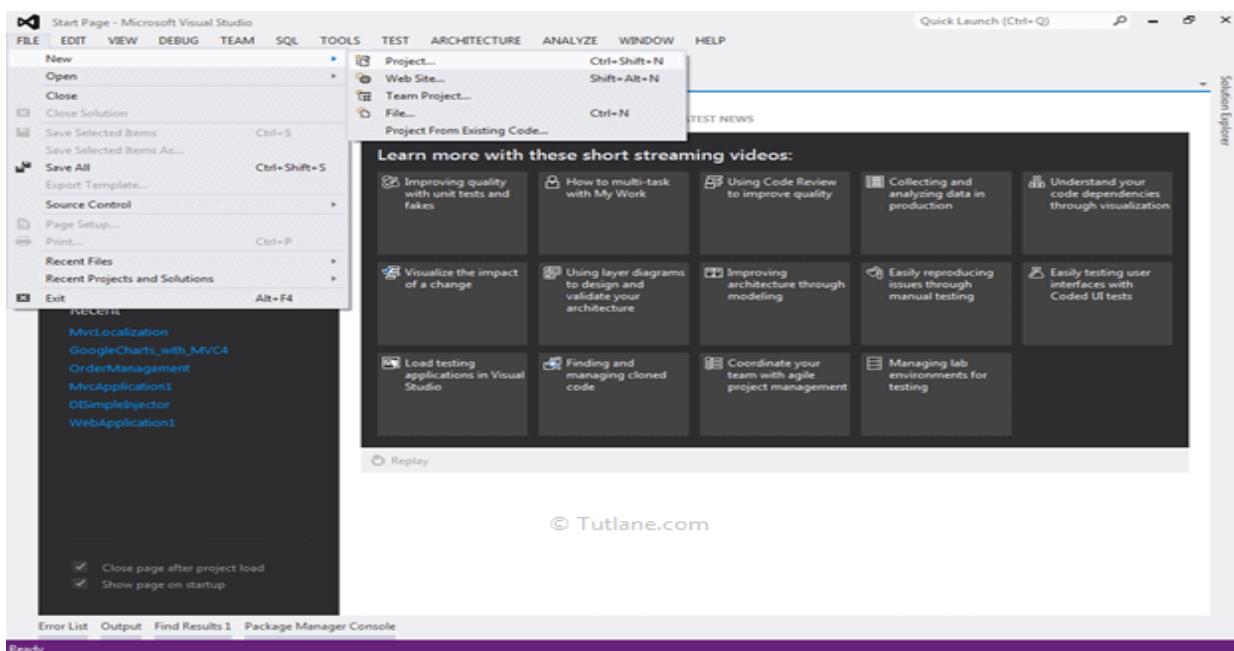
Step (4): Open Visual Studio from the Start Menu, which will open the following dialog. It will take a while for the first time only for preparation.



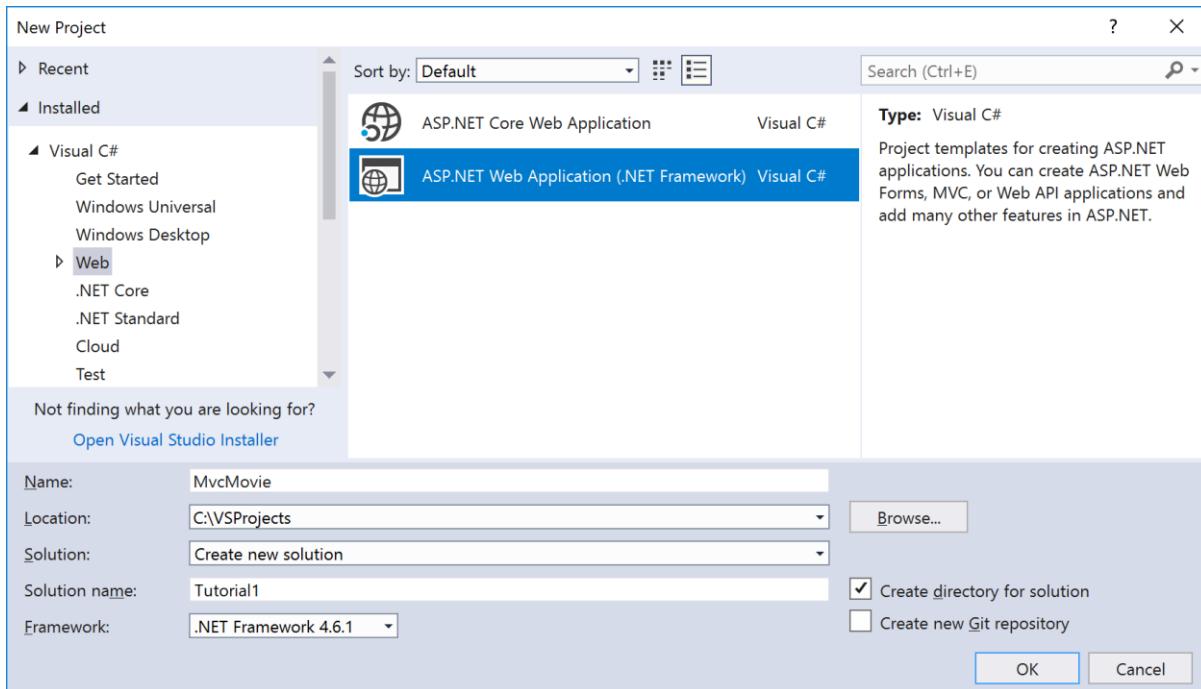


6.2.4 ASP.NET MVC – GETTING STARTED

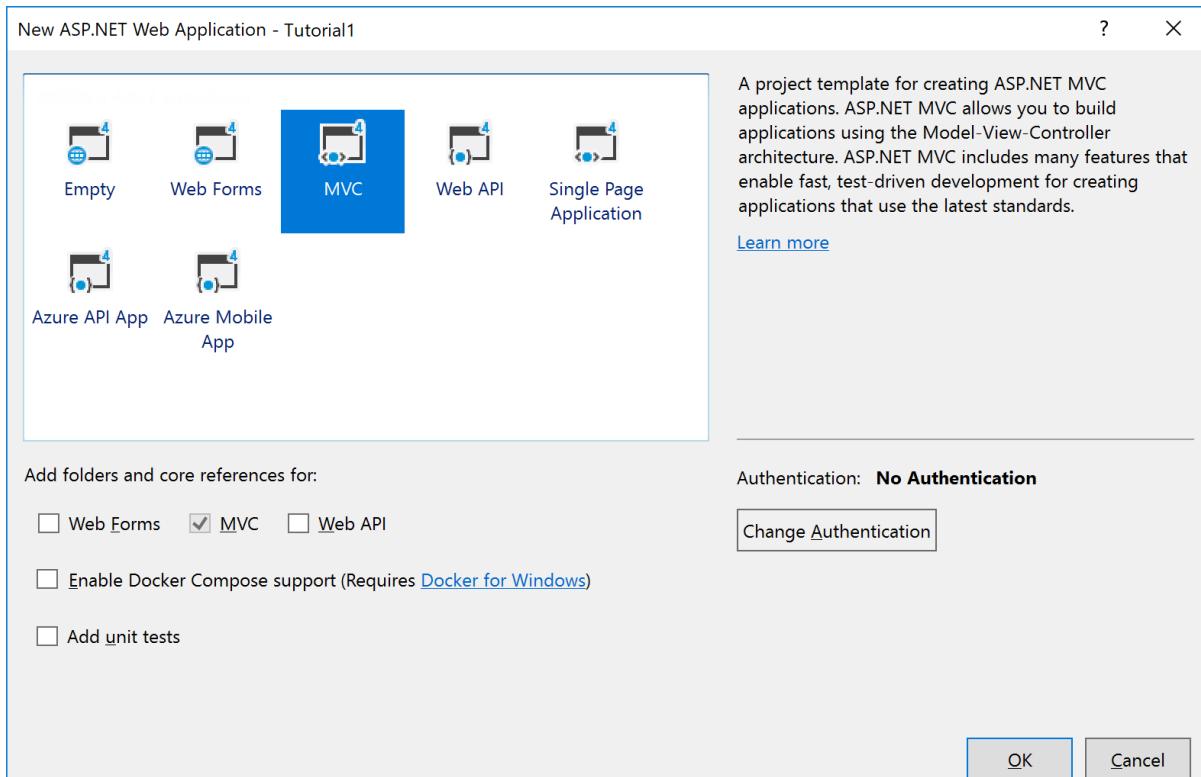
Visual Studio is an IDE, or integrated development environment. Just like you use Microsoft Word to write documents, you'll use an IDE to create applications. In Visual Studio, there's a list along the bottom showing various options available to you. There's also a menu that provides another way to perform tasks in the IDE. For example, instead of selecting **New Project** on the **Start page**, you can use the menu bar and select **File > New Project**.



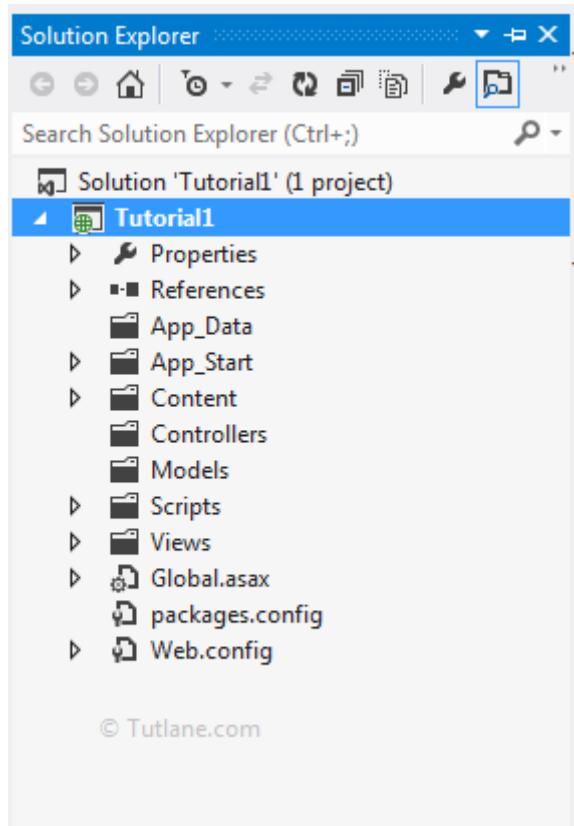
On the **Start** page, select **New Project**. In the **New project** dialog box, select the **Visual C#** category on the left, then **Web**, and then select the **ASP.NET Web Application (.NET Framework)** project template. Name your project and then choose **OK**.



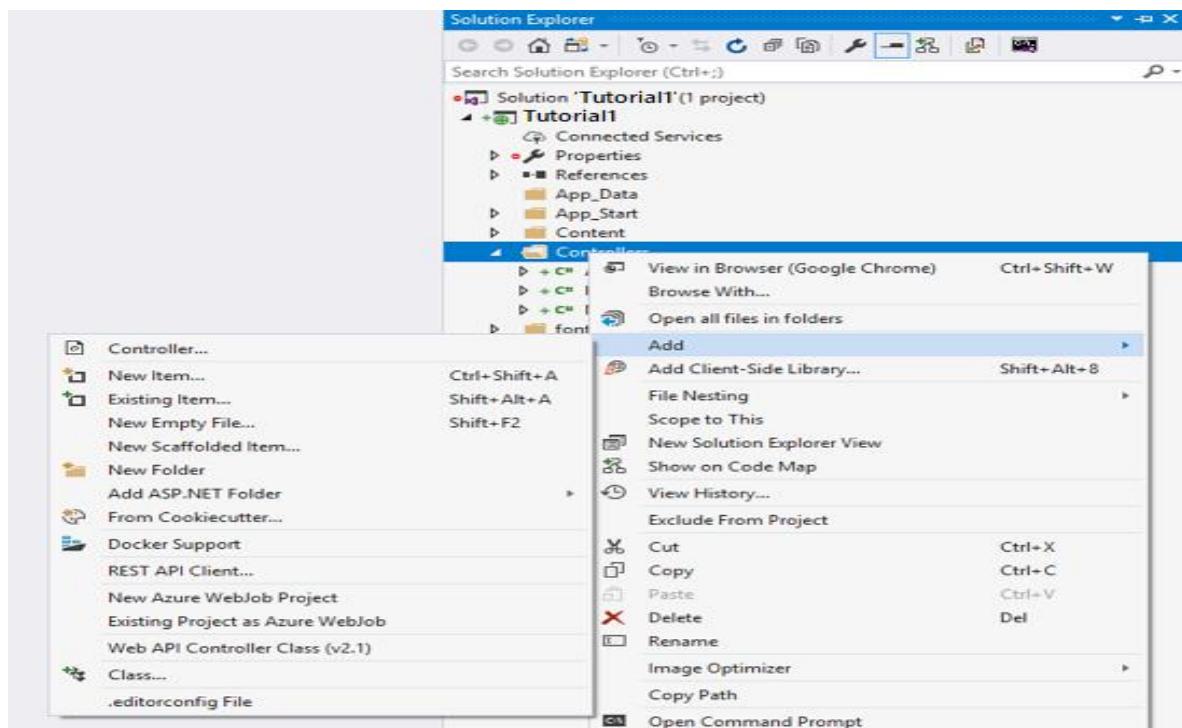
In the **New ASP.NET Web Application** dialog, choose **MVC** and then choose **OK**.



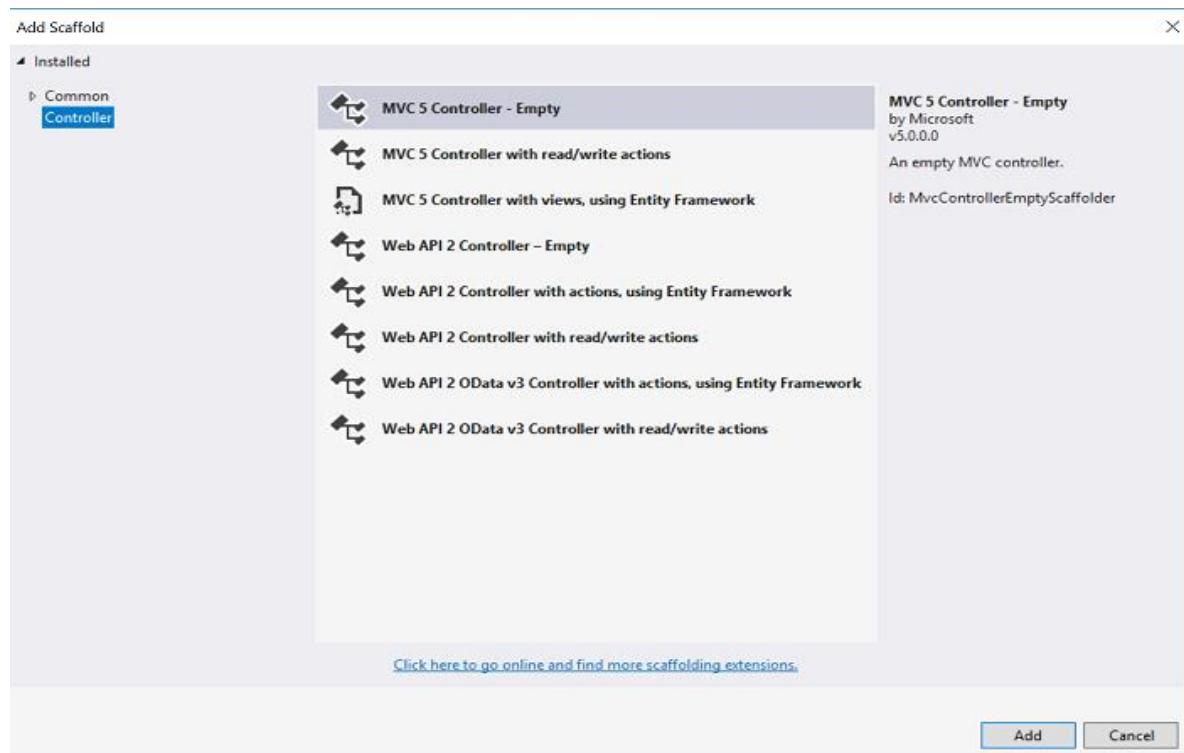
After create application our asp.net mvc application project structure will be like as shown following image.



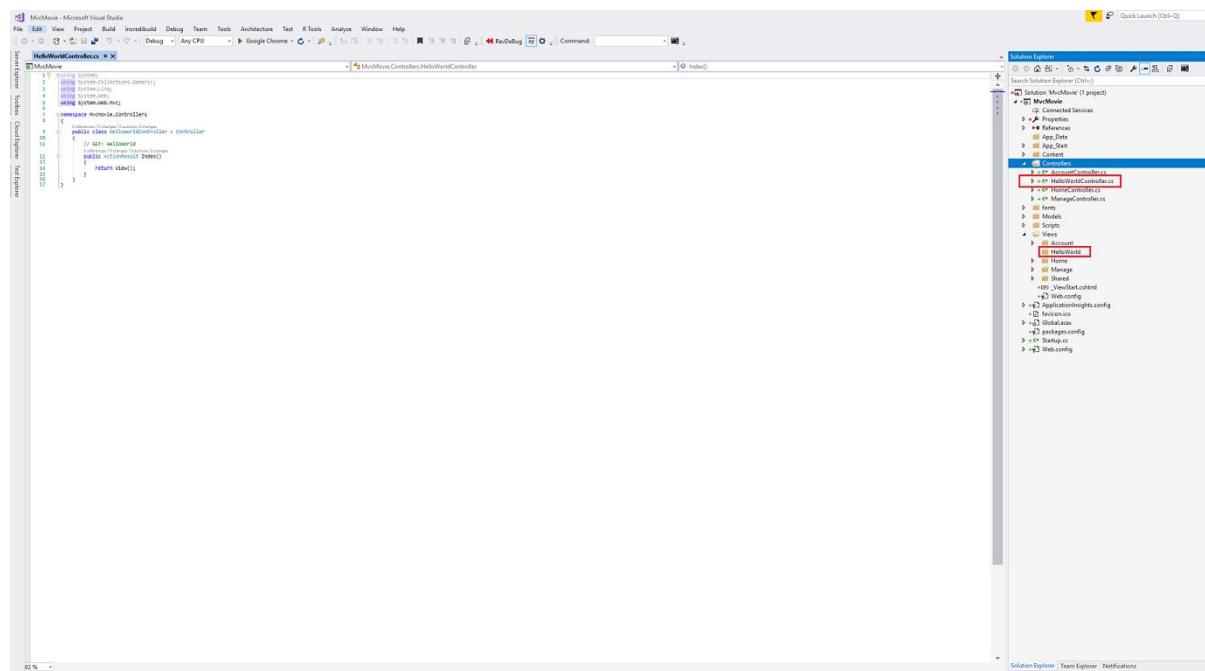
Creating a controller class. In Solution Explorer, right-click the *Controllers* folder and then click Add, then Controller.



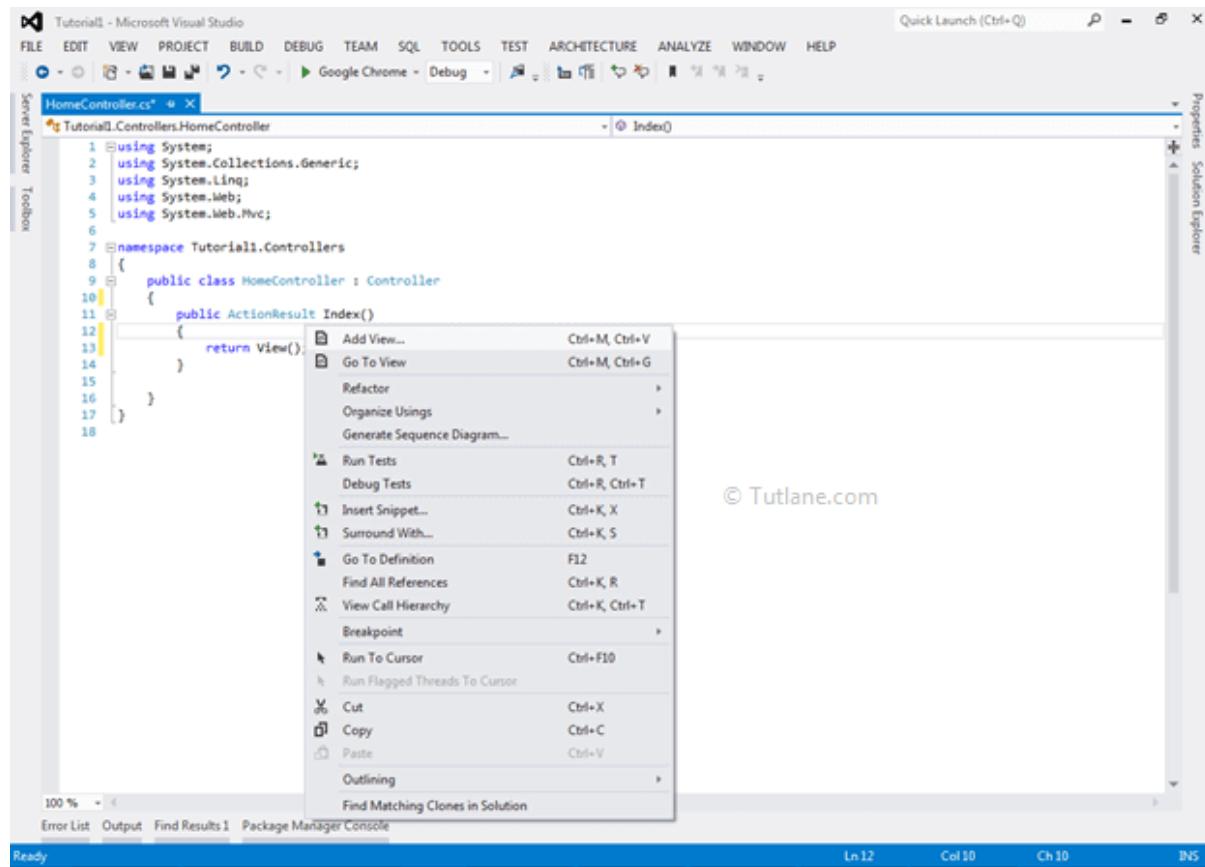
In the **Add Scaffold** dialog box, click **MVC 5 Controller - Empty**, and then click **Add**.



Name your new controller "**HelloWorldController**" and click Add.

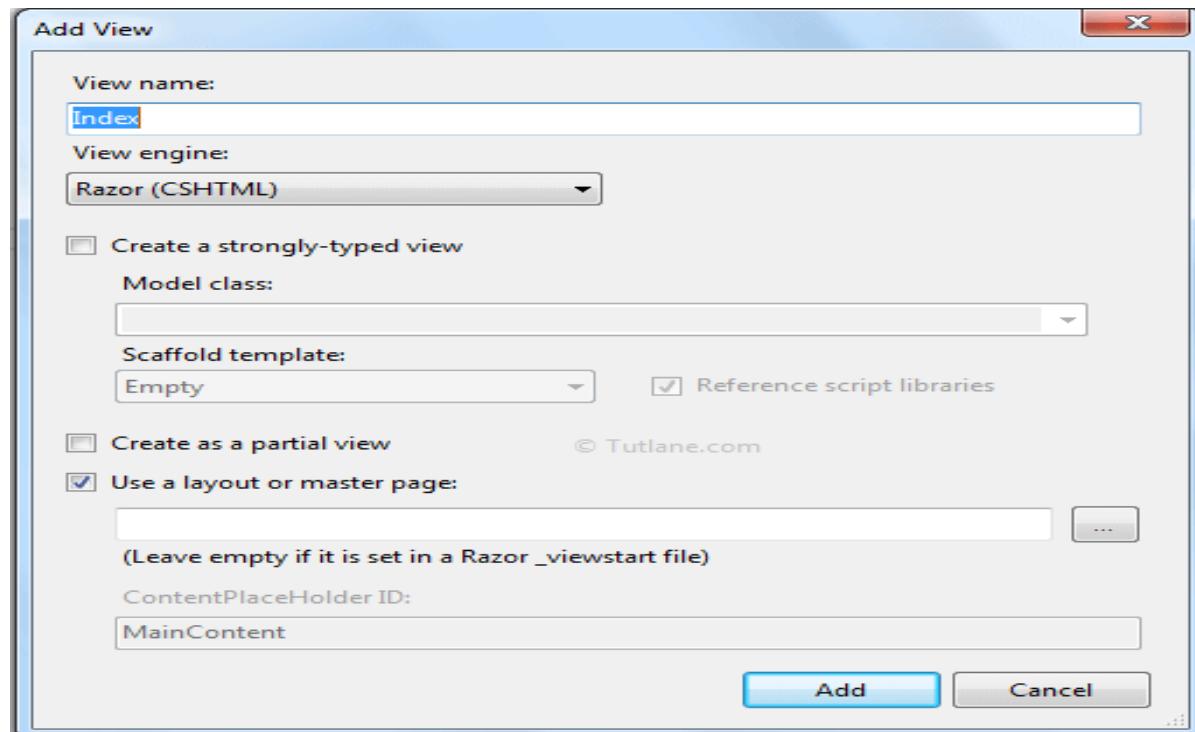


Open **HelloWorldController** file and just right click in inside controller anywhere like as shown following image



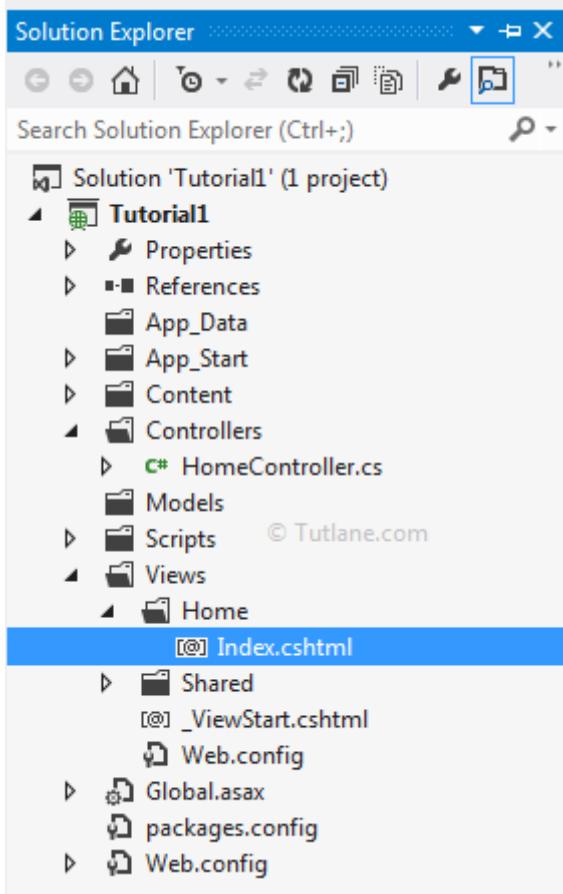
© Tutlane.com

After Clicking on Add view a new dialog pop up will open for view configuration like as following image

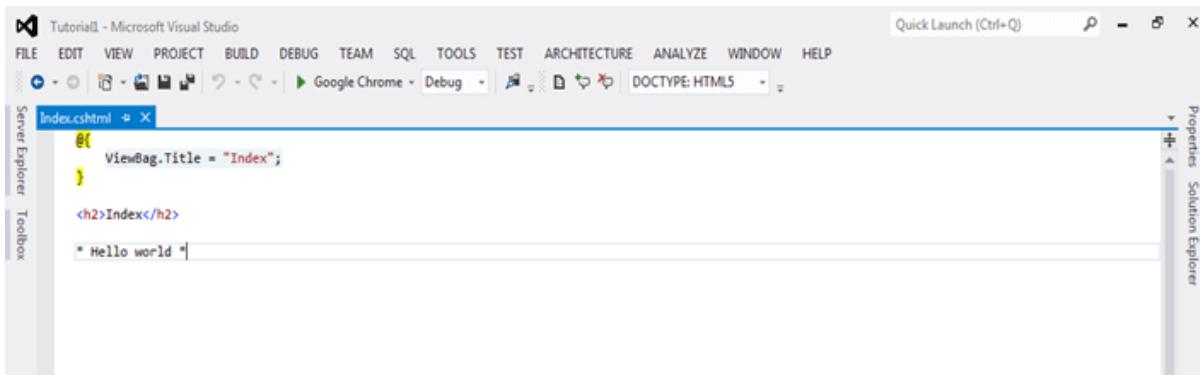


© Tutlane.com

Here we will provide View name as **Index** and click on Add button once we add view our Project structure will be like as shown following image



Now open our Index view and write message "**Hello world**" like as shown following image



Similarly, this can be done without adding view as:

Code for Hello world program in controller:

```
using System.Web;
```

```
using System.Web.Mvc;
```

```
namespace Tutorial1.Controllers
```

```
{  
    public class HelloWorldController : Controller  
    {  
        public string Index()  
        {  
            return "Hello world";  
        }  
  
        public string Welcome()  
        {  
            return "This is a .net program";  
        }  
    }  
}
```

The controller methods will return a string of HTML as an example. The controller is named **HelloWorldController** and the first method is named Index.

Run the application (press F5 or Ctrl+F5). In the browser, append "HelloWorld" to the path in the address bar.



ASP.NET MVC invokes different controller classes (and different action methods within them) depending on the incoming URL. The default URL routing logic used by ASP.NET MVC uses a format like this to determine what code to invoke:

/[Controller]/[ActionName]/[Parameters]

You set the format for routing in the *App_Start/RouteConfig.cs* file.

```
public static void RegisterRoutes(RouteCollection routes)
{
    routes.IgnoreRoute("{resource}.axd/{*pathInfo}");

    routes.MapRoute(
        name: "Default",
        url: "{controller}/{action}/{id}",
        defaults: new { controller = "Home", action = "Index", id = UrlParameter.Optional }
    )
}
```

When you run the application and don't supply any URL segments, it defaults to the "Home" controller and the "Index" action method specified in the defaults section of the code above.

The first part of the URL determines the controller class to execute. So */HelloWorld* maps to the *HelloWorldController* class. The second part of the URL determines the action method on the class to execute. So */HelloWorld/Index* would cause the *Index* method of the *HelloWorldController* class to execute. Notice that we only had to browse to */HelloWorld* and the *Index* method was used by default. This is because a method named *Index* is the default method that will be called on a controller if one is not explicitly specified. The third part of the URL segment (Parameters) is for route data.

Browse to [/\[Controller\]/\[ActionName\]/\[Parameters\]. For this URL, the controller is *HelloWorld* and *Welcome* is the action method.](http://localhost:xxxx>HelloWorld>Welcome. The <i>Welcome</i> method runs and returns the string)



6.3 ANGULAR JS



6.3.1 ANGULAR JS OVERVIEW

AngularJS is a client-side JavaScript MVC framework to develop a dynamic web application. AngularJS was originally started as a project in Google but now, it is open source framework.

AngularJS is entirely based on HTML and JavaScript, so there is no need to learn another syntax or language.

AngularJS changes static HTML to dynamic HTML. It extends the ability of HTML by adding built-in attributes and components and also provides an ability to create custom attributes using simple JavaScript.

Following are the advantages of AngularJS over other JavaScript frameworks:

- Open source JavaScript MVC framework.
- Supported by Google
- No need to learn another scripting language. It's just pure JavaScript and HTML.
- Supports separation of concerns by using MVC design pattern.
- Built-in attributes (directives) makes HTML dynamic.
- Easy to extend and customize.
- Supports Single Page Application.
- Uses Dependency Injection.
- Easy to Unit test.
- REST friendly.

6.3.2 Setup AngularJS Development Environment

We need the following tools to setup a development environment for AngularJS:

- AngularJS Library
- Editor/IDE
- Browser
- Web server

Step 1: Install the Angular CLI

You use the Angular CLI to create projects, generate application and library code, and perform a variety of ongoing development tasks such as testing, bundling, and deployment.

Install the Angular CLI globally.

To install the CLI using npm, open a terminal/console window and enter the following command:

npm install -g @angular/cli

Step 2: Create a workspace and initial application

You develop apps in the context of an Angular workspace. A workspace contains the files for one or more projects. A project is the set of files that comprise an app, a library, or end-to-end (e2e) tests.

To create a new workspace and initial app project:

Run the CLI command `ng new` and provide the name `my-app`,

ng new my-app

- The `ng new` command prompts you for information about features to include in the initial app project. Accept the defaults by pressing the Enter or Return key.
- The Angular CLI installs the necessary Angular npm packages and other dependencies. This can take a few minutes.
- It also creates the following workspace and starter project files:
 - A new workspace, with a root folder named `my-app`
 - An initial skeleton app project, also called `my-app` (in the `src` subfolder)
 - An end-to-end test project (in the `e2e` subfolder)
 - Related configuration files
- The initial app project contains a simple Welcome app, ready to run.

Step 3: Serve the application

Angular includes a server, so that you can easily build and serve your app locally.

- Go to the workspace folder (my-app).
- Launch the server by using the CLI command `ng serve`, with the `--open` option.

`cd my-app`

`ng serve --open`

- The `ng serve` command launches the server, watches your files, and rebuilds the app as you make changes to those files.
- The `--open` (or just `-o`) option automatically opens your browser to `http://localhost:4200/`.

Welcome to my-app!



Step 4: Edit Angular component

Components are the fundamental building blocks of Angular applications. They display data on the screen, listen for user input, and take action based on that input.

As part of the initial app, the CLI created the first Angular component for you. It is the *root component*, and it is named `app-root`.

- Open `./src/app/app.component.ts`.
- Change the title property from 'my-app' to 'My First Angular App'.

src/app/app.component.ts:

```
@Component({  
  selector: 'app-root',  
  templateUrl: './app.component.html',  
  styleUrls: ['./app.component.css']  
})  
  
export class AppComponent {  
  title = 'My First Angular App!';  
}
```

- The browser reloads automatically with the revised title. That's nice, but it could look better.
- Open ./src/app/app.component.css and give the component some style.

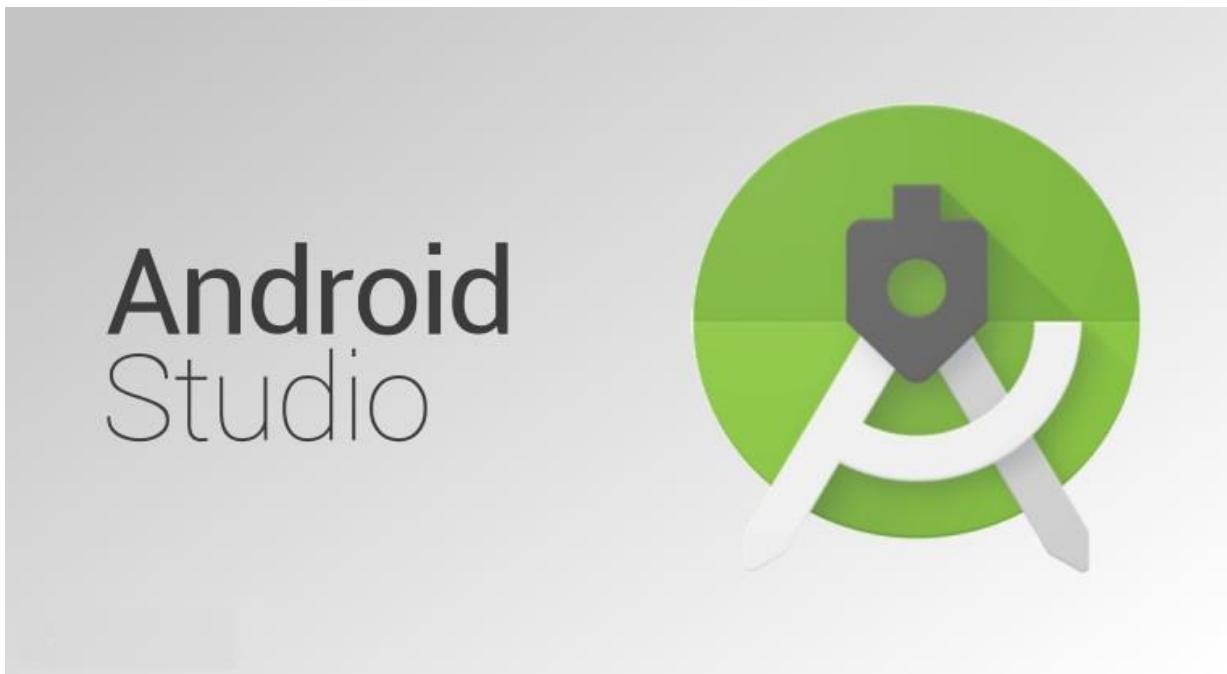
src/app/app.component.css

```
h1 {  
  color: #369;  
  font-family: Arial, Helvetica, sans-serif;  
  font-size: 250%;  
}
```

Welcome to My First Angular App!



6.4 ANDROID



6.4.1 ANDROID IDE OVERVIEW

Android App Development is mostly done in two IDE i.e. Eclipse and Android Studio. Earlier Eclipse was the popular IDE but now Android Studio has taken over it. This is because Google has ended the support for Eclipse and now only focused on Android Studio. Google also recommended developer to import their Android projects and use Android Studio. The *Android Software Development Kit* (Android SDK) and the Gradle tooling contains the necessary tools to Compile, package, deploy and start Android application. Google provides a specialized IDE called *Android Studio* to perform development tasks. The Android SDK contains the *Android debug bridge* (adb). adb is a tool that allows you to connect to a virtual or real Android device. This allows managing the device or debugging your application.

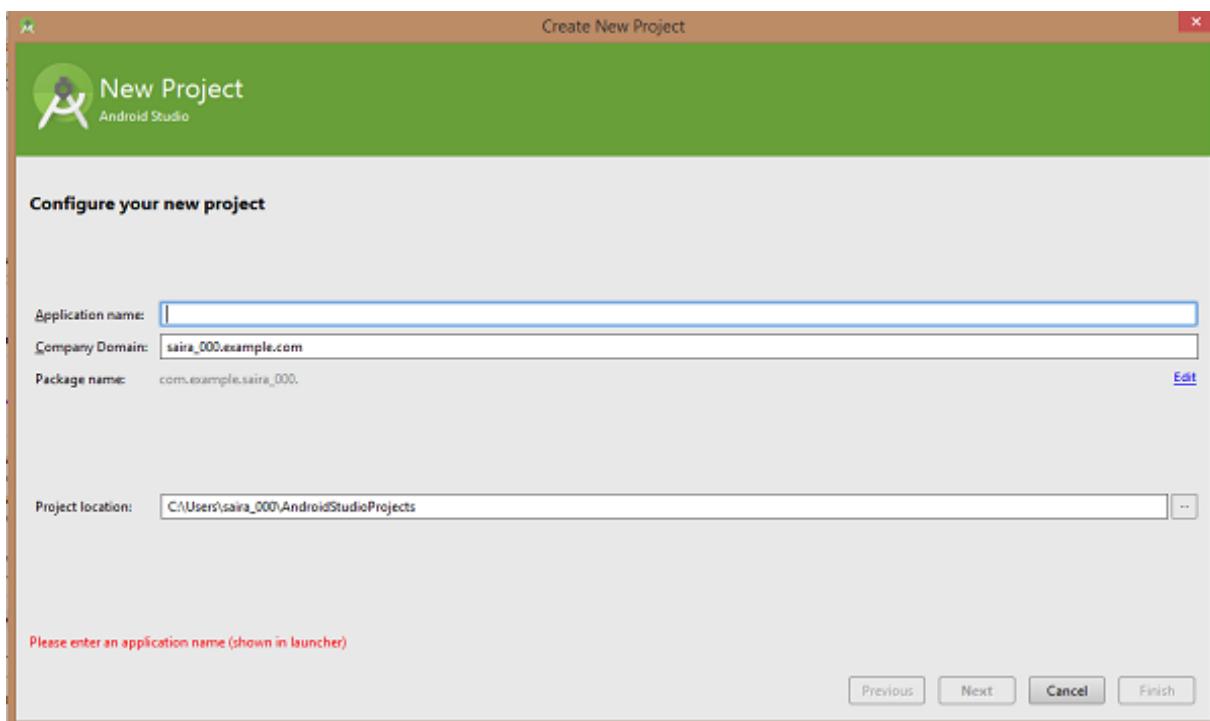
Android is a software package and linux based operating system for mobile devices such as tablet computers and smartphones. It is developed by Google and later the OHA (Open Handset Alliance). Java language is mainly used to write the android code even though other languages can be used. The goal of android project is to create a successful real-world product that improves the mobile experience for end users. There are many code names of android such as Lollipop, Kitkat, Jelly Bean, Ice cream Sandwich, Froyo, Eclair, Donut etc .

6.4.2 Creating Android Application

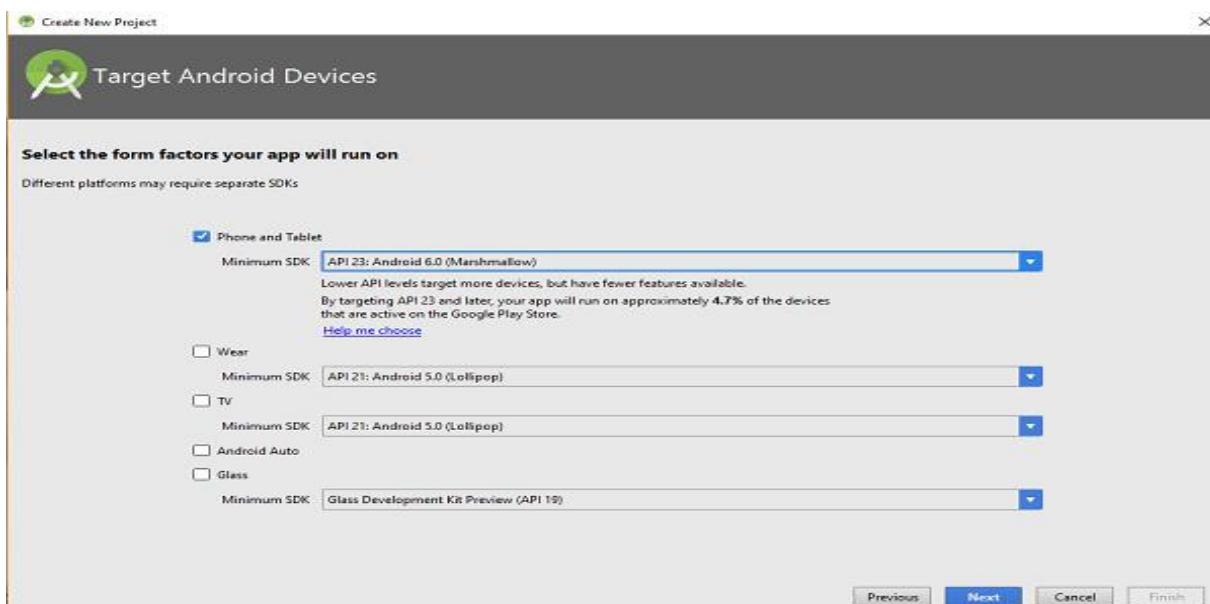
The first step is to create a simple Android Application using Android studio.



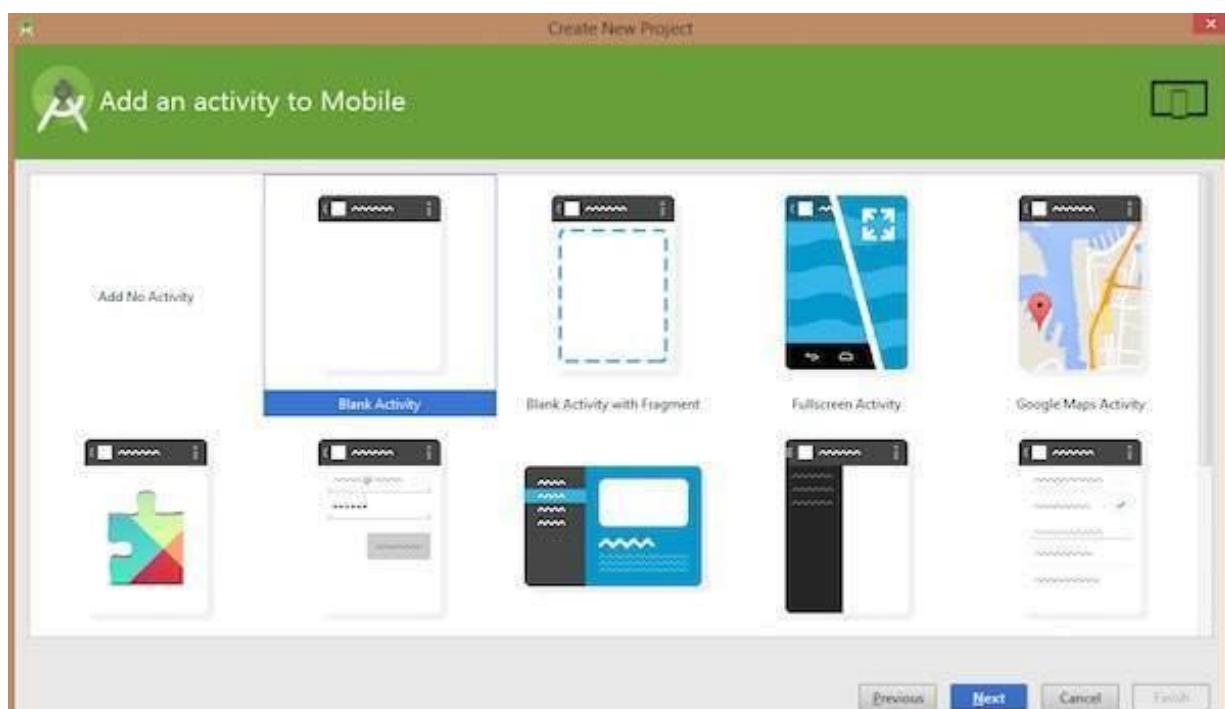
You can start your application development by calling start a new android studio project. in a new installation frame should ask Application name, package information and location of the project. –



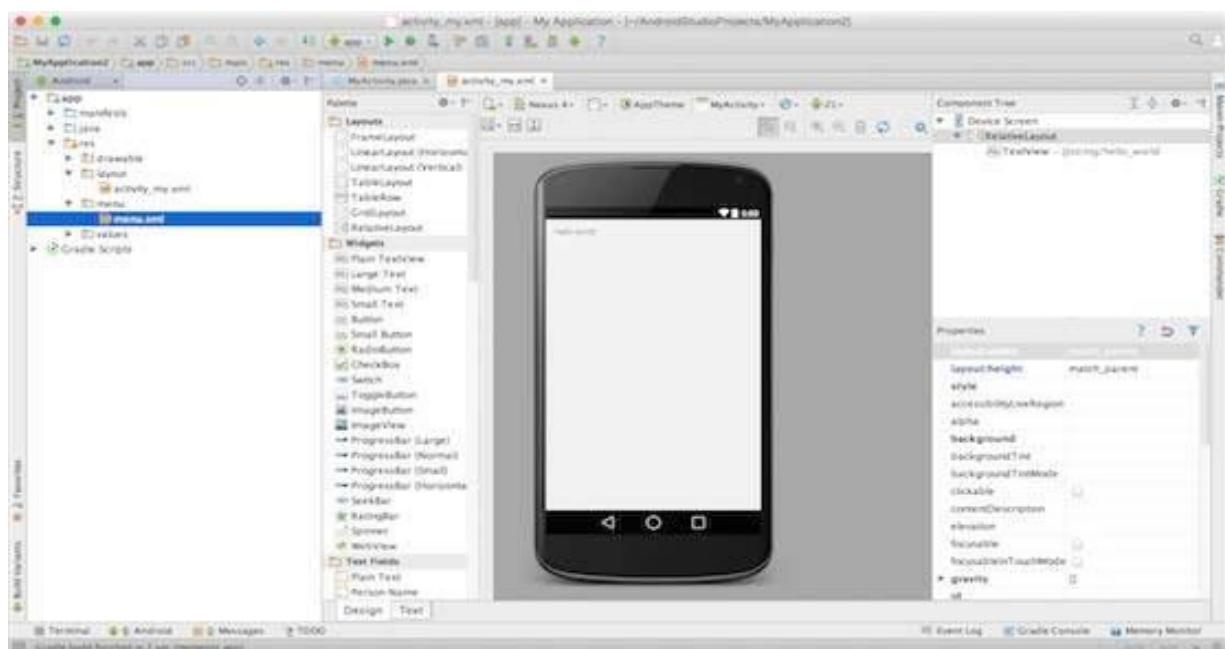
After entered application name, it going to be called select the form factors your application runs on, here need to specify Minimum SDK, in our tutorial, I have declared as API23: Android 6.0(Mashmallow) –



The next level of installation should contain selecting the activity to mobile, it specifies the default layout for Applications.



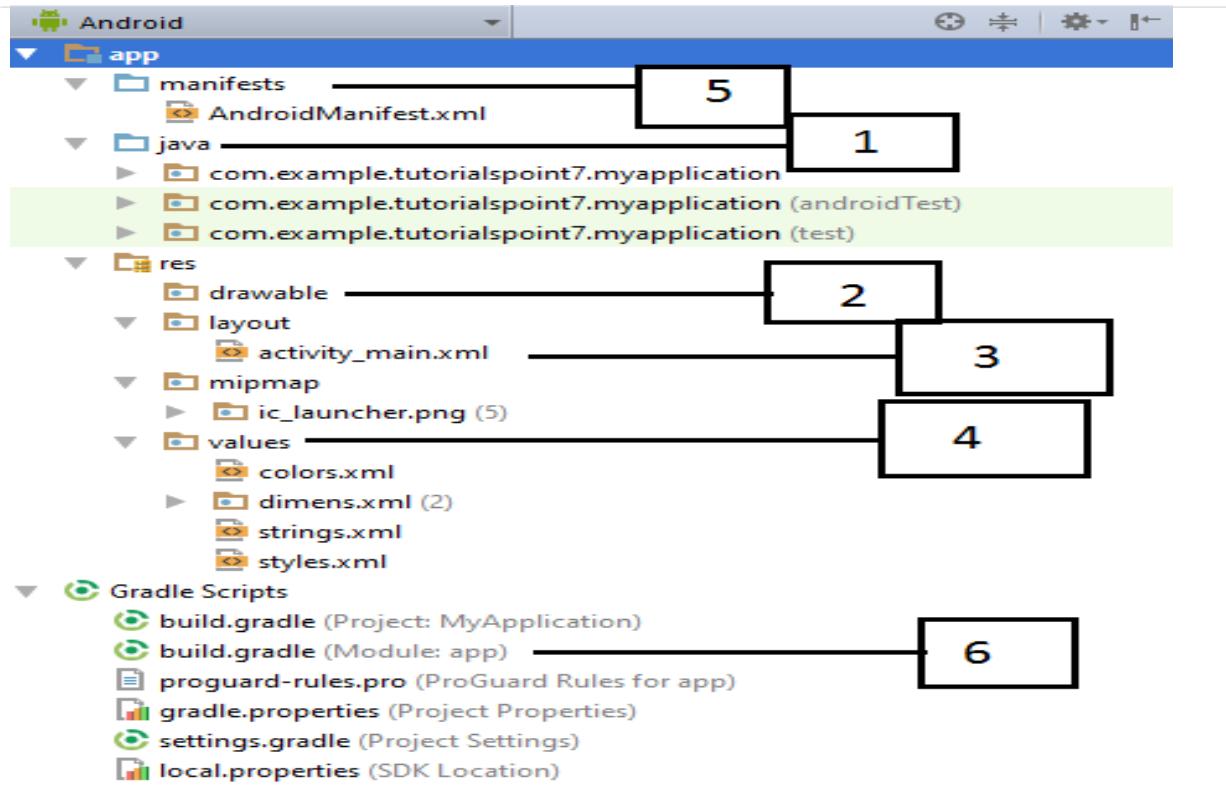
At the final stage it going to be open development tool to write the application code.



6.4.3 Anatomy of Android Application

Before you run your app, you should be aware of a few directories and files in the Android project

Sr.No.	Folder, File & Description
1	Java This contains the .java source files for your project. By default, it includes an <i>MainActivity.java</i> source file having an activity class that runs when your app is launched using the app icon.
2	res/drawable-hdpi This is a directory for drawable objects that are designed for high-density screens.
3	res/layout This is a directory for files that define your app's user interface.
4	res/values This is a directory for other various XML files that contain a collection of resources, such as strings and colours definitions.
5	AndroidManifest.xml This is the manifest file which describes the fundamental characteristics of the app and defines each of its components.
6	Build.gradle This is an auto generated file which contains compileSdkVersion, buildToolsVersion, applicationId, minSdkVersion, targetSdkVersion, versionCode and versionName



Following section will give a brief overview of the important application files.

The Main Activity File

The main activity code is a Java file **MainActivity.java**. This is the actual application file which ultimately gets converted to a Dalvik executable and runs your application. Following is the default code generated by the application wizard for *Hello World!* application –

```
package com.example.helloworld;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

`R.layout.activity_main` refers to the `activity_main.xml` file located in the `res/layout` folder. The `onCreate()` method is one of many methods that are figured when an activity is loaded.

The Manifest File

Whatever component you develop as a part of your application, you must declare all its components in a *manifest.xml* which resides at the root of the application project directory. This file works as an interface between Android OS and your application, so if you do not declare your component in this file, then it will not be considered by the OS. For example, a default manifest file will look like as following file –

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.tutorialspoint7.myapplication">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">

        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

Here `<application>...</application>` tags enclosed the components related to the application. Attribute `android:icon` will point to the application icon available under `res/drawable-hdpi`. The application uses the image named `ic_launcher.png` located in the drawable folders

The `<activity>` tag is used to specify an activity and `android:name` attribute specifies the fully qualified class name of the `Activity` subclass and the `android:label` attributes specifies a string to use as the label for the activity. You can specify multiple activities using `<activity>` tags.

The **action** for the intent filter is named *android.intent.action.MAIN* to indicate that this activity serves as the entry point for the application. The **category** for the intent-filter is named *android.intent.category.LAUNCHER* to indicate that the application can be launched from the device's launcher icon.

The *@string* refers to the *strings.xml* file explained below. Hence, *@string/app_name* refers to the *app_name* string defined in the *strings.xml* file, which is "HelloWorld". Similar way, other strings get populated in the application.

Following is the list of tags which you will use in your manifest file to specify different Android application components –

- <activity> elements for activities
- <service> elements for services
- <receiver> elements for broadcast receivers
- <provider> elements for content providers

The Strings File

The **strings.xml** file is located in the *res/values* folder and it contains all the text that your application uses. For example, the names of buttons, labels, default text, and similar types of strings go into this file. This file is responsible for their textual content. For example, a default strings file will look like following–

```
<resources>
    <string name="app_name">HelloWorld</string>
    <string name="hello_world">Hello world!</string>
    <string name="menu_settings">Settings</string>
    <string name="title_activity_main">MainActivity</string>
</resources>
```

The Layout File

The **activity_main.xml** is a layout file available in *res/layout* directory, that is referenced by your application when building its interface. You will modify this file very frequently to change the layout of your application. For your "Hello World!" application, this file will have following content related to default layout –

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    xmlns:tools="http://schemas.android.com/tools"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent" >  
  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_centerHorizontal="true"  
        android:layout_centerVertical="true"  
        android:padding="@dimen/padding_medium"  
        android:text="@string/hello_world"  
        tools:context=".MainActivity" />  
  
</RelativeLayout>
```

The *TextView* is an Android control used to build the GUI and it have various attributes like *android:layout_width*, *android:layout_height* etc which are being used to set its width and height etc.. The *@string* refers to the strings.xml file located in the res/values folder. Hence, *@string/hello_world* refers to the hello string defined in the strings.xml file, which is "Hello World!".

Running the Application

Let's try to run our **Hello World!** application we just created. I assume you had created your **AVD** while doing environment set-up. To run the app from Android studio, open one of your project's activity files and click Run  icon from the tool bar. Android studio installs the app on your AVD and starts it and if everything is fine with your set-up and application, it will display following Emulator window –



6.5 SERVER HARDENING



6.5.1 SERVER HARDENING OVERVIEW

Server Hardening is the process of enhancing server security through a variety of means which results in a much more secure server operating environment. This is due to the advanced security measures that are put in place during the server hardening process.

The term "hardening," in the general sense, implies taking a soft surface or material and making changes to it which result in that surface becoming stronger and more resistant to damage. That is exactly how **server hardening** impacts server security. Hardened servers are more resistant to security issues than non-hardened servers. * In a time when nearly every computing resource is online and susceptible to attack, server hardening is a near absolute must to perform on your servers. * The Internet has vastly altered the complexion of the server hardening industry over the last decade. Much of the applications and system software that is now developed is intended for use on the Internet, and for connections to the Internet. * Many servers online today are attacked thousands of times per hour, tens and sometimes hundreds of thousands of times each and every day. The best defense against such attacks is to ensure that server hardening is a well-established practice within your organization or to outsource this task to an experienced & established server hardening agency.

Server Hardening, probably one of the most important tasks to be handled on your servers, becomes more understandable when you realize all the risks involved. The default config of most operating systems is not designed with security as the primary focus. Instead, default setups focus more on usability, communications and functionality. To protect your servers, you must establish solid and sophisticated server hardening policies for all servers

in your organization. Developing a server hardening checklist would likely be a great first step in increasing your server and network security. Make sure that your checklist includes minimum security practices that you expect of your staff. If you go with a consultant you can provide them with your server hardening checklist to use as a baseline.

6.5.2 SERVER HARDENING TIPS & TRICKS

Every server security conscious organization will have their own methods for maintaining adequate system and network security. Often you will find that server hardening consultants can bring your security efforts up a notch with their specialized expertise. Some common server hardening tips & tricks include:

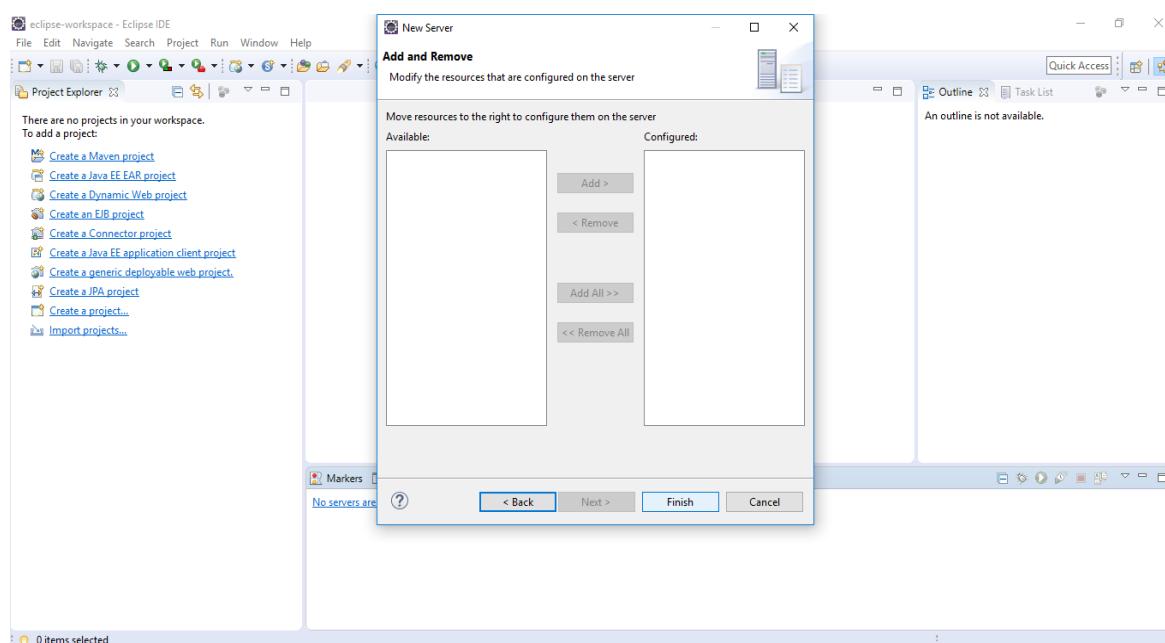
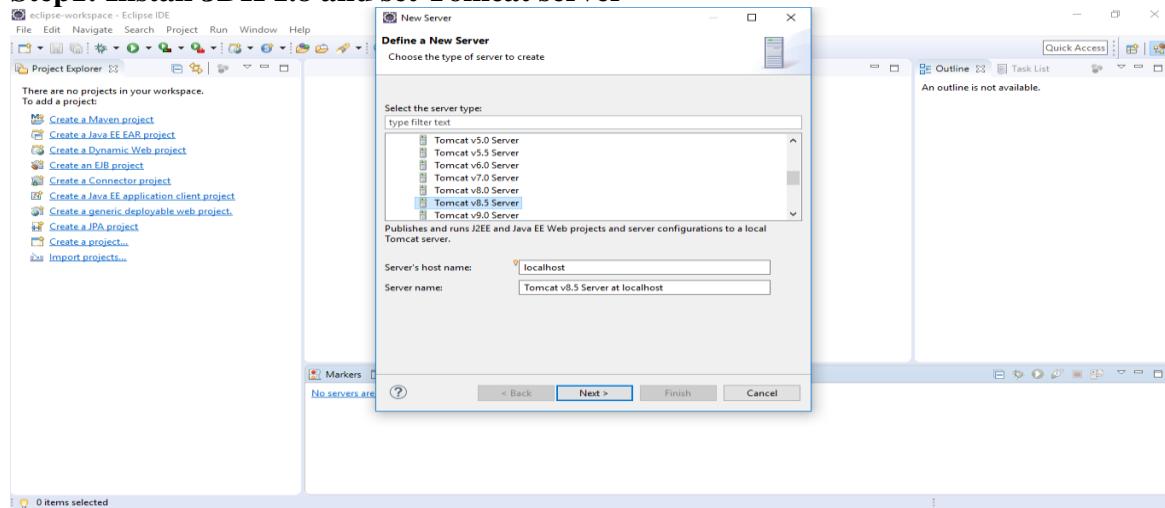
- Use Data Encryption for your Communications
- Avoid using insecure protocols that send your information or passwords in plain text.
- Minimize unnecessary software on your servers.
- Disable Unwanted SUID and SGID Binaries
- Keep your operating system up to date, especially security patches.
- Using security extensions is a plus.
- When using Linux, SELinux should be considered. Linux server hardening is a primary focus for the web hosting industry, however in web hosting SELinux is probably not a good option as it often causes issues when the server is used for web hosting purposes.
- User Accounts should have very strong passwords
- Change passwords on a regular basis and do not reuse them
- Lock accounts after too many login failures. Often these login failures are illegitimate attempts to gain access to your system.
- Do not permit empty passwords.
- SSH Hardening --- Change the port from default to a non-standard one --- Disable direct root logins. Switch to root from a lower level account only when necessary.
- Unnecessary services should be disabled. Disable all instances of IRC - BitchX, bnc, eggdrop, generic-sniffers, guardservices, ircd, psyBNC, ptlink.
- Securing /tmp /var/tmp /dev/sh

6.6 JAVA SPRING

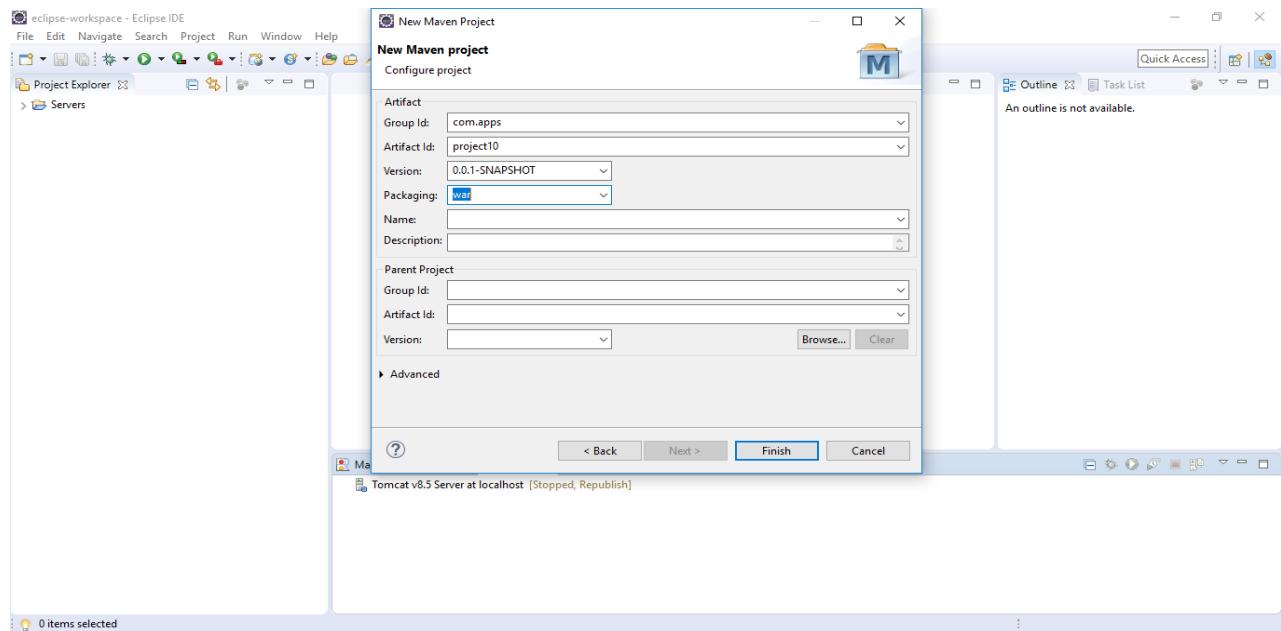
The **Spring Framework** is an application framework and inversion of control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions for building web applications on top of the Java EE (Enterprise Edition) platform. Although the framework does not impose any specific programming model, it has become popular in the Java community as an addition to, or even replacement for the Enterprise JavaBeans (EJB) model. The Spring Framework is open source.

Program Implementation

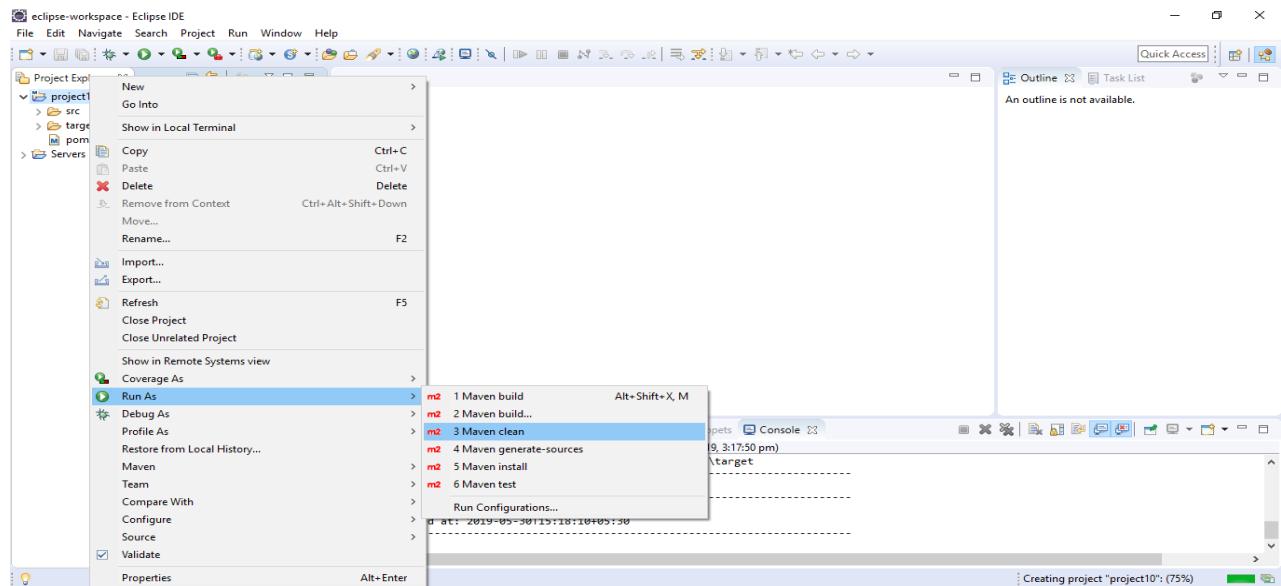
Step1: Install JDK 1.8 and set Tomcat server



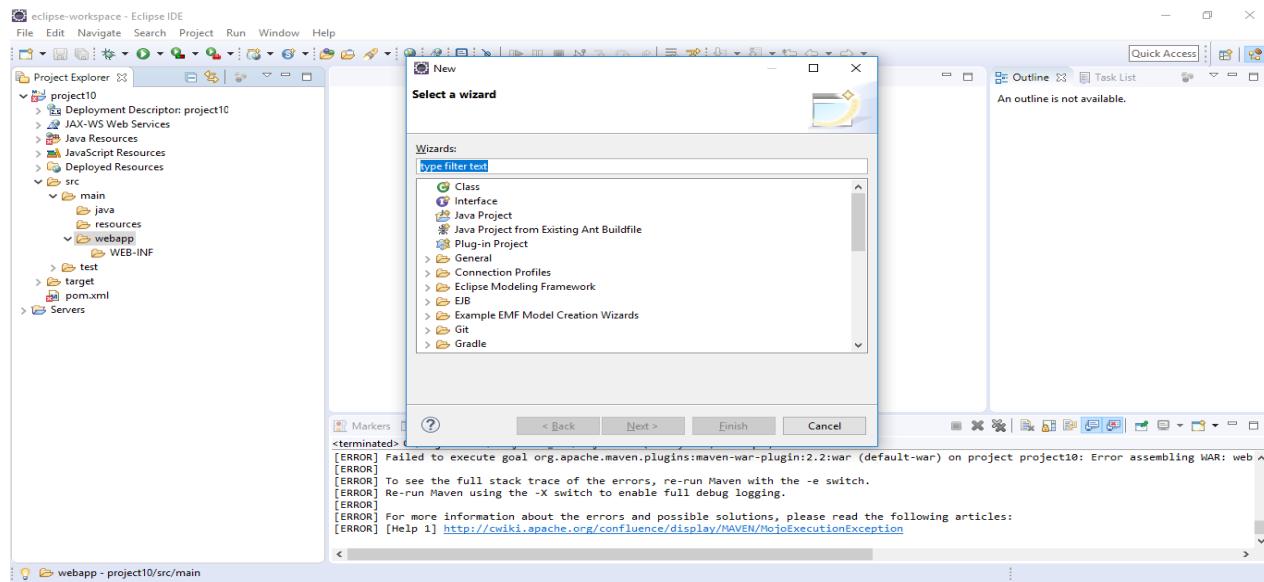
Step2: Start Maven project – file-> new -> maven



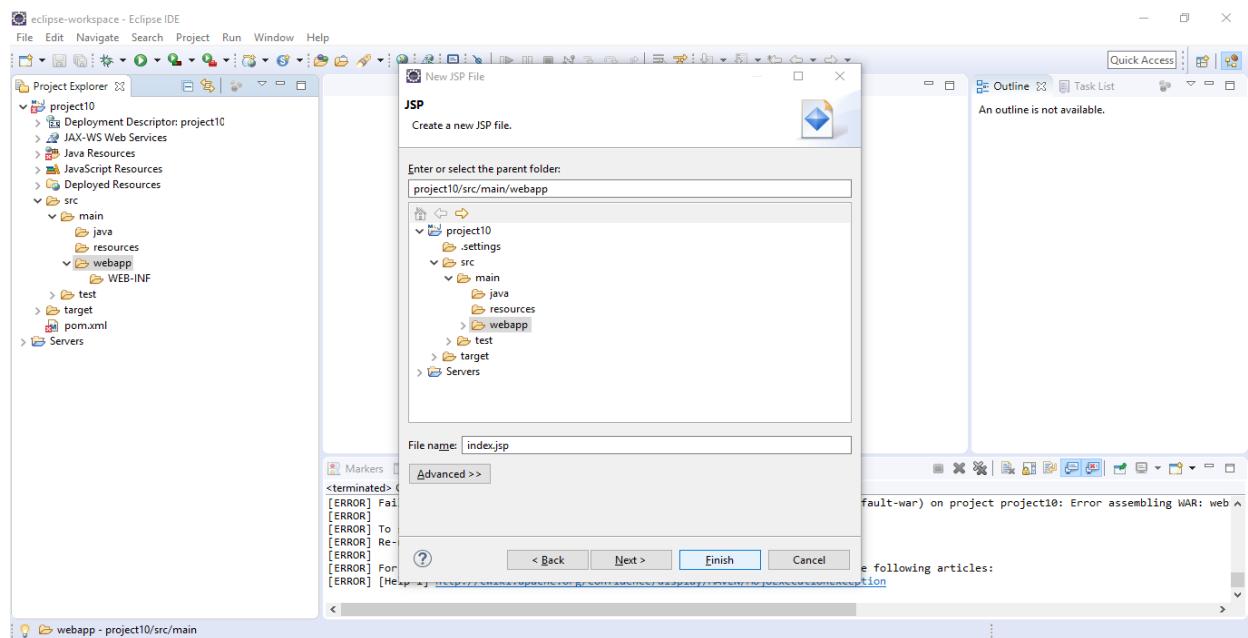
Step3: Build your maven project



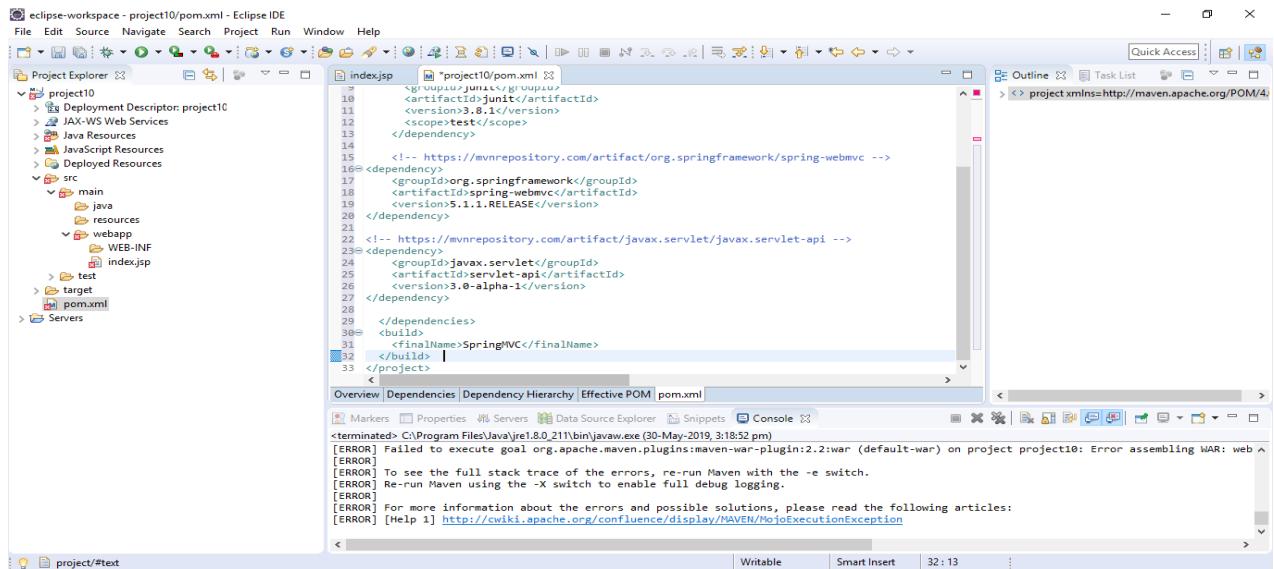
Step4: Add a folder in webapp and the folder name is WEB-INF



Step5: Click WEB-INF -> Ctrl+N -> select jsp file -> name the file with index.jsp



Step6: Set Pom file

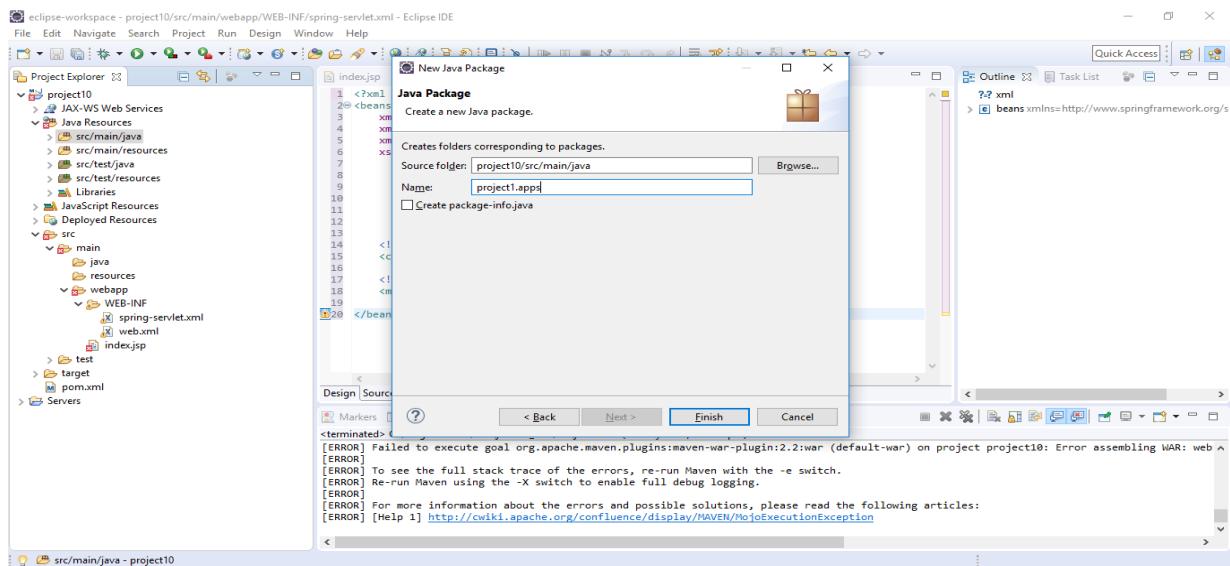


```

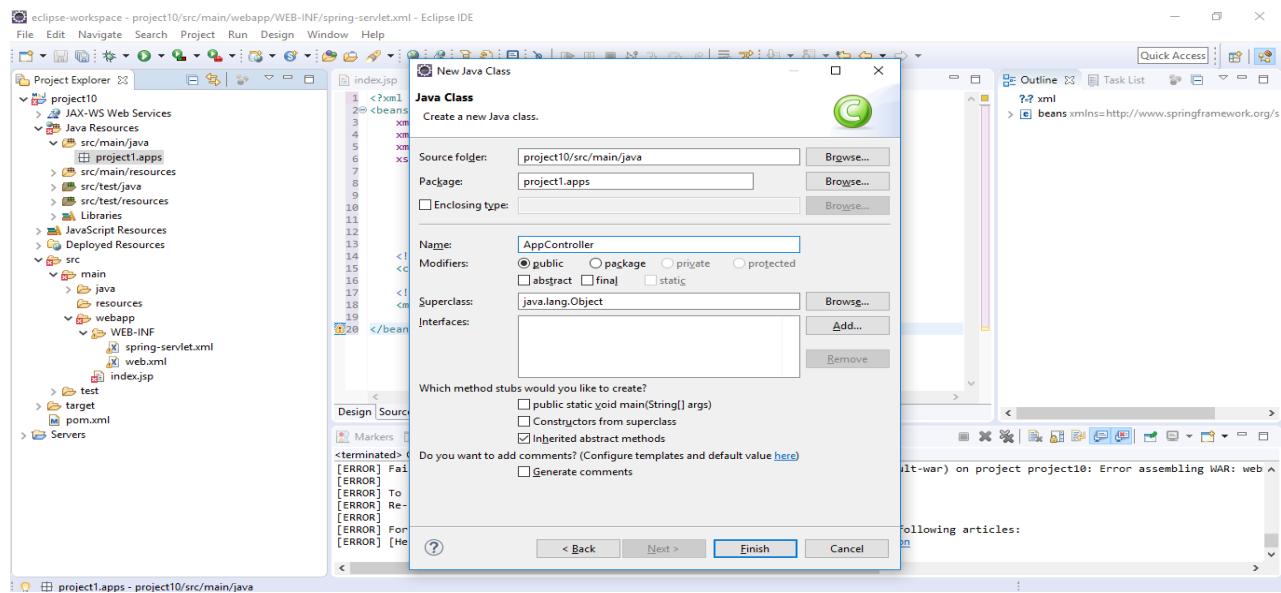
<dependency>
    <groupId>junit</groupId>
    <artifactId>junit</artifactId>
    <version>3.8.1</version>
    <scope>test</scope>
</dependency>
<dependency>
    <groupId>org.springframework</groupId>
    <artifactId>spring-webmvc</artifactId>
    <version>5.1.1.RELEASE</version>
</dependency>
<dependency>
    <groupId>javax.servlet</groupId>
    <artifactId>servlet-api</artifactId>
    <version>3.0-alpha-1</version>
</dependency>
</dependencies>
<build>
    <finalName>SpringMVC</finalName>
</build>
</project>

```

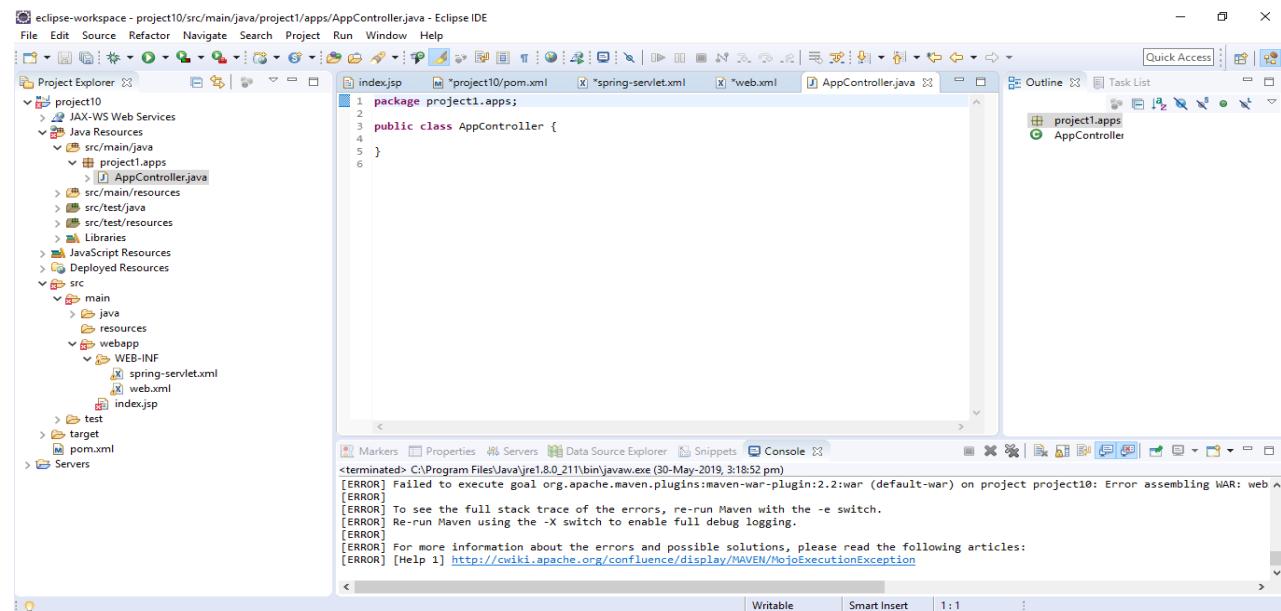
Step7: Create java packages

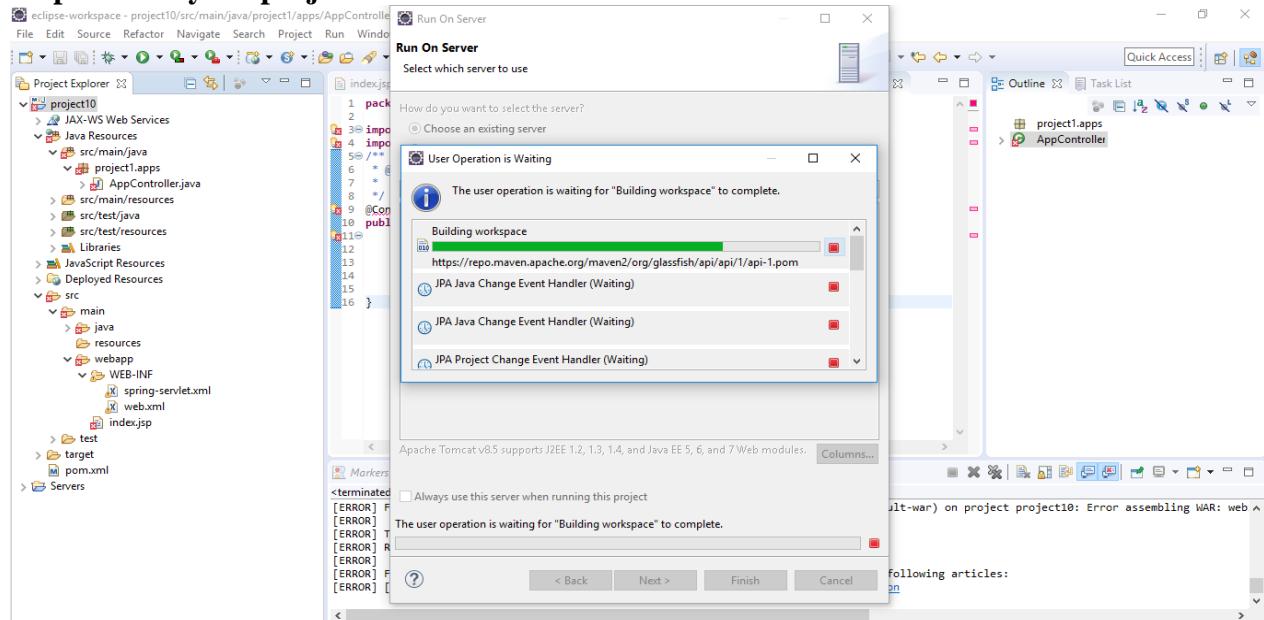


Step:8 Create java class



Step:9 Set AppController



Step:10 Run your project

PART 7

PROJECT DOCUMENTATION

7.1 INTRODUCTION

7.1.1 PROJECT OVERVIEW

Doctor Patient Portal is an online application developed to help doctors in their work and also patients to book doctor appointments and view medical progress. The system allows doctors to manage their booking slots online. Patients are allowed to book empty slots online and those slots are reserved in their name.

The system manages the appointment data for multiple doctors for various date and times. Each time a user visits a doctor his/her medical entry is stored in the database by doctor. Next time a user logs in he may view his/her entire medical history as and when needed.

7.1.2 PROJECT SPECIFICATION

This is for the great benefit of appointment activities. It will be a simple platform for users to access functions for their huge needs. It provides the functions to the users who are handling the software. The system includes 4 modules. They are:

Admin: The system is under super vision of admin who manages doctor. Admin can view the appointment details, approve doctor's leave and also add specialization and doctors.

Patients: These users have to first register themselves to login into the system and users can book appointments for their required date and available time and also cancel their bookings. Patients can purchase medicine through online.

Doctor: Doctors can view their appointments and view a particular person's history and add their treatment. Apply leave.

Pharmacy: They get medical details of each patient's directly from doctors. Pharmacy can deliver medicines to the particular users who are applying for online medicines.

7.2 SYSTEM STUDY

7.2.1 INTRODUCTION

System analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvements on the system. It is a problem-solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minute's detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analyzing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action.

A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This is loop that ends as soon as the user is satisfied with proposal.

Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preliminary study is problem solving activity that requires intensive communication between the system users and system developers. It does various feasibility studies. In these studies, a rough figure of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken

7.2.2 PROPOSED SYSTEM

The proposed system is defined to meets all the disadvantages of the existing system. It is necessary to have a system that is more user friendly and user attractive for business growth; on such consideration the system is proposed. In our proposed system there is admin who can view all the users and manages the bookings made. It allows users pay online.

Existing patient software is not user-friendly or engaging enough to encourage repeat usage. Patients are concerned about the privacy and security of their information. The proposed systems rectify the drawbacks of present system. It is necessary to modify the existing system in order to include additional information and make the system efficient, flexible and secure.

ADVANTAGES OF PROPOSED SYSTEM

The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features:

➤ *Better security:* -

For data to remain secure measures must be taken to prevent unauthorized access. Security means that data are protected from various forms of destruction. The system security problem can be divided into four related issues: security, integrity, privacy and confidentiality. Username and password requirement to sign in ensures security. It will also provide data security as we are using the secured databases for maintaining the documents.

➤ *Ensure data accuracy:* -

The proposed system eliminates the manual errors while entering the details of the users during the registration.

➤ *Better service:* -

The product will avoid the burden of hard copy storage. We can also conserve the time and human resources for doing the same task. The data can be maintained for longer period with no loss of data.

➤ *User friendliness and interactive:* -

The proposed system will help the user to reduce the workload and provides user friendly environment so that they can easily do their jobs. The system alerts the users for each activity to be carried out, through email notification.

➤ *Minimum time required:* -

The data management is in such a way that a particular registered user can handle data very easily.

7.3 REQUIREMENT ANALYSIS

7.3.1 Feasibility Study

Feasibility study is made to see if the project on completion will serve the purpose of the organization for the amount of work, effort and the time that spend on it. Feasibility study lets the developer foresee the future of the project and the usefulness. A feasibility study of a system proposal is according to its workability, which is the impact on the organization, ability to meet their user needs and effective use of resources. Thus, when a new application is proposed it normally goes through a feasibility study before it is approved for development.

The document provides the feasibility of the project that is being designed and lists various areas that were considered very carefully during the feasibility study of this project such as Technical, Economic and Operational feasibilities. The following are its features:

7.3.1.1 Economical Feasibility

This assessment typically involves a cost/ benefits analysis of the project, helping organizations determine the viability, cost, and benefits associated with a project before financial resources are allocated. It also serves as an independent project assessment and enhances project credibility—helping decision makers determine the positive economic benefits to the organization that the proposed project will provide.

The developing system must be justified by cost and benefit. Criteria to ensure that effort is concentrated on project, which will give best, return at the earliest. One of the factors, which affect the development of a new system, is the cost it would require.

The following are some of the important financial questions asked during preliminary investigation:

- The costs conduct a full system investigation.
- The cost of the hardware and software.
- The benefits in the form of reduced costs or fewer costly errors.
- Since the system is developed as part of project work, there is no manual cost to spend for the proposed system. Also, all the resources are already available, it gives an indication of the system is economically possible for development.

7.3.1.2 Technical Feasibility

This assessment focuses on the technical resources available to the organization. It helps organizations determine whether the technical resources meet capacity and whether the technical team is capable of converting the ideas into working systems. Technical feasibility also involves evaluation of the hardware, software, and other technology requirements of the proposed system. As an exaggerated example, an organization wouldn't want to try to put Star Trek's transporters in their building—currently, this project is not technically feasible.

Doctor Patient Portal is a project which is mainly concentrating on doctor's appointment. So, in this project that book appointments online. Doctor take treatment according to the booking. We have a pharmacy facility online to purchase medical products online. We use HTML5 as front end, PHP 7.3.1 as middleware and MySQL as backend. We use a system with 500GB internal and 4GB Ram.

7.3.1.3 Operational Feasibility

This assessment involves undertaking a study to analyze and determine whether—and how well—the organization's needs can be met by completing the project. Operational feasibility studies also analyze how a project plan satisfies the requirements identified in the requirements analysis phase of system development.

This system is very useful for the doctor as well as the patient. The doctor can manage his appointments as well as his time and can take care of the patient's history. The doctor does not have to depend on the patient to check his/her medical history as the doctor already has a database in which all the patient's previous visits are stored along with the medications provided.

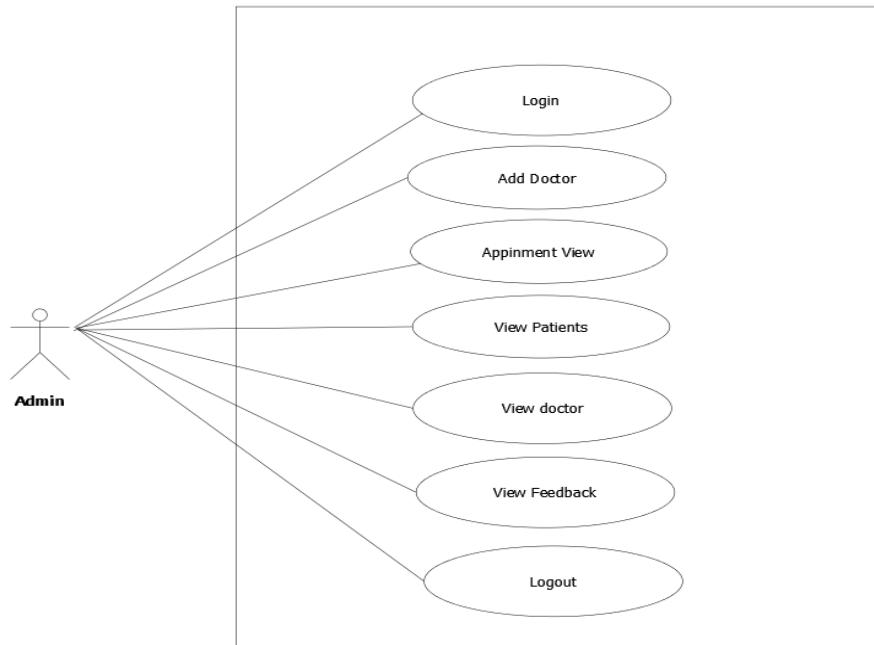
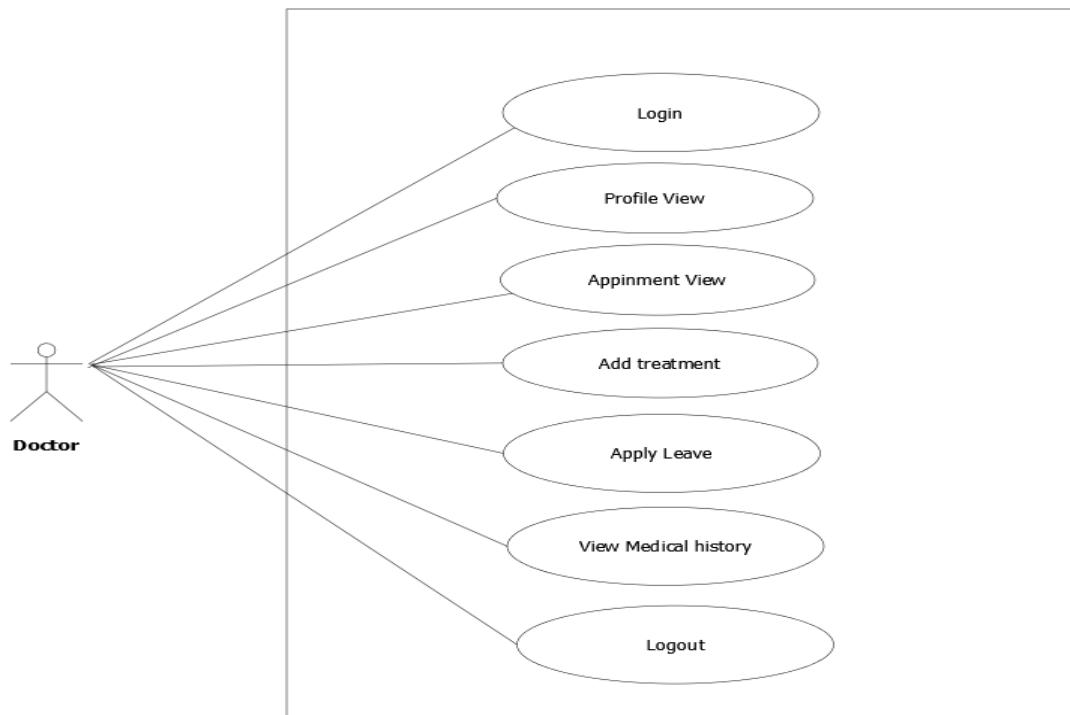
7.4 REQUIREMENT MODELING

7.4.1 UML Use Case Diagram

A use case diagram is a graphic depiction of the interactions among the elements of a system. A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. In this context, the term "system" refers to something being developed or operated, such as a mail-order product sales and service Web site. Use case diagrams are employed in UML (Unified Modeling Language), a standard notation for the modeling of real-world objects and systems.

System objectives can include planning overall requirements, validating a hardware design, testing and debugging a software product under development, creating an online help reference, or performing a consumer-service-oriented task. For example, use cases in a product sales environment would include item ordering, catalog updating, payment processing, and customer relations. A use case diagram contains four components.

- The boundary, which defines the system of interest in relation to the world around it.
- The actors, usually individuals involved with the system defined according to their roles.
- The use cases, which are the specific roles played by the actors within and around the system.
- The relationships between and among the actors and the use cases

Admin**Doctor**

Patient



Pharmacy

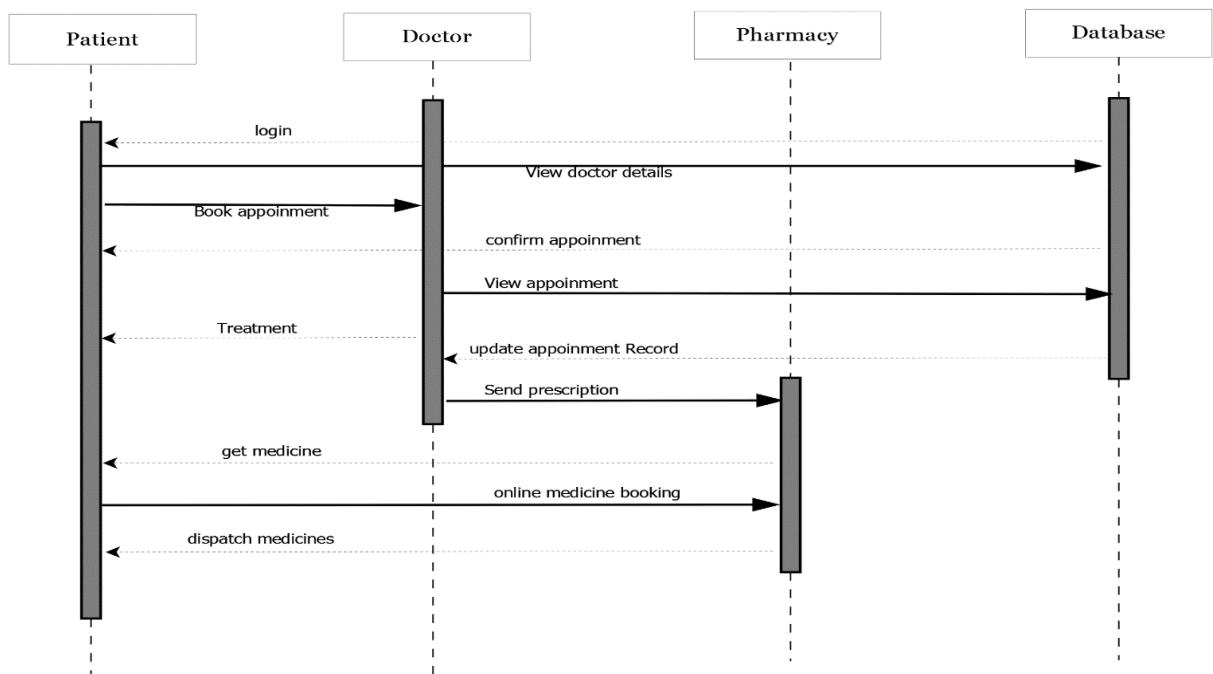


7.4.2 UML Sequence Diagram

A sequence diagram is an interaction diagram that shows how objects operate with one another and in what order. It is a construct of a message sequence chart.

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence diagrams are sometimes called event diagrams or event scenarios.

A sequence diagram shows, as parallel vertical lines (*lifelines*), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner

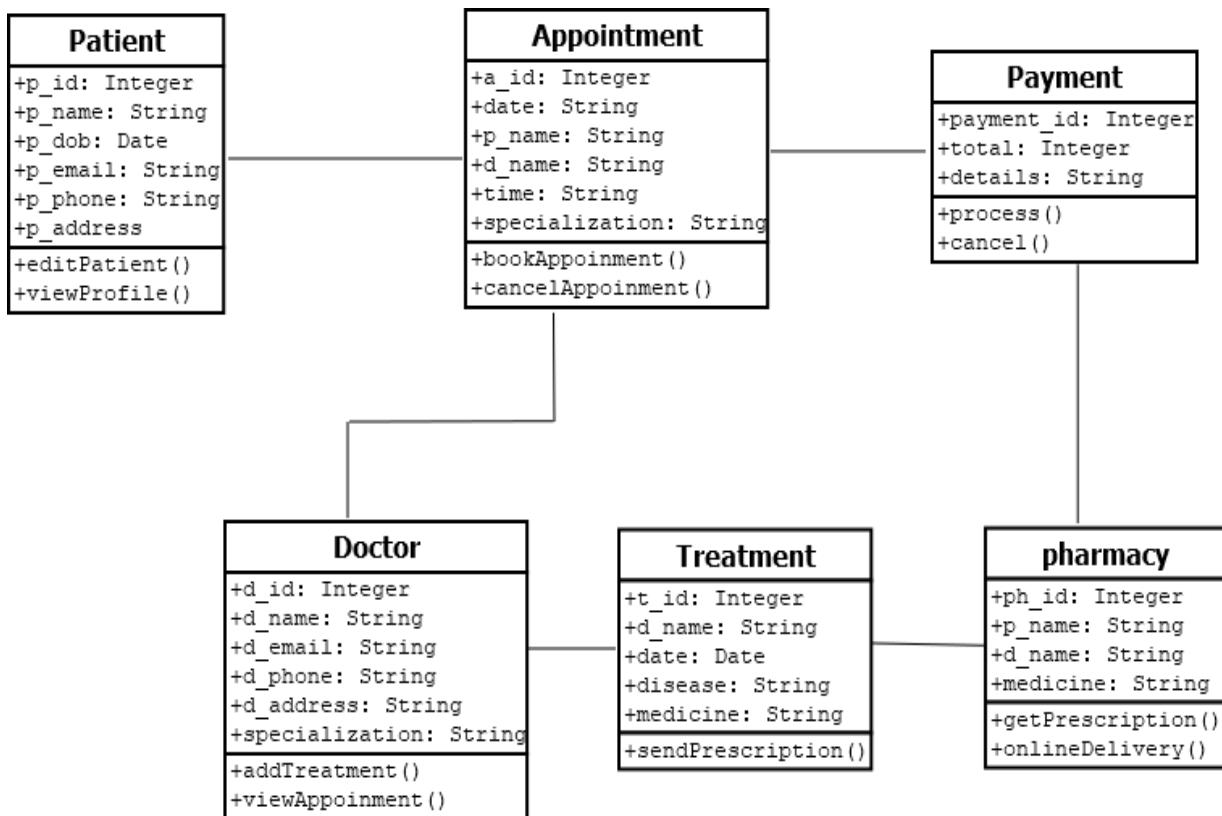


7.4.3 UML Class Diagram

Class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing, and documenting different aspects of a system but also for constructing executable code of the software application.

Class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modelling of object-oriented systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages.

Class diagram shows a collection of classes, interfaces, associations, collaborations, and constraints.

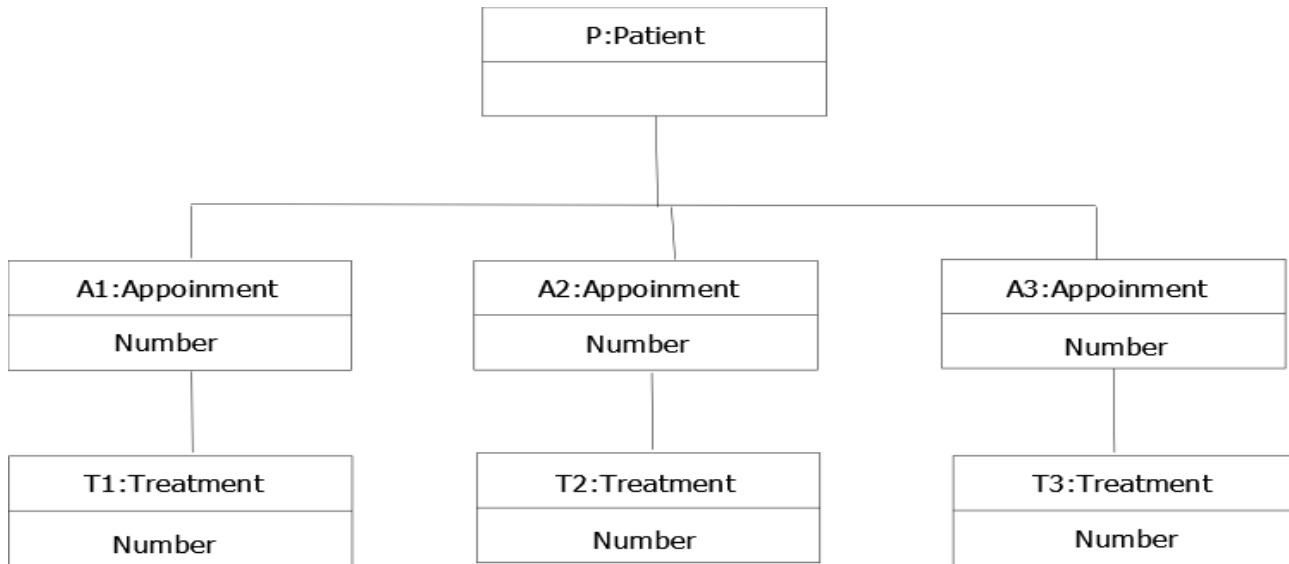


7.4.4 UML Object Diagram

Object diagrams are derived from class diagrams so object diagrams are dependent upon class diagrams.

Object diagrams represent an instance of a class diagram. The basic concepts are similar for class diagrams and object diagrams. Object diagrams also represent the static view of a system but this static view is a snapshot of the system at a particular moment.

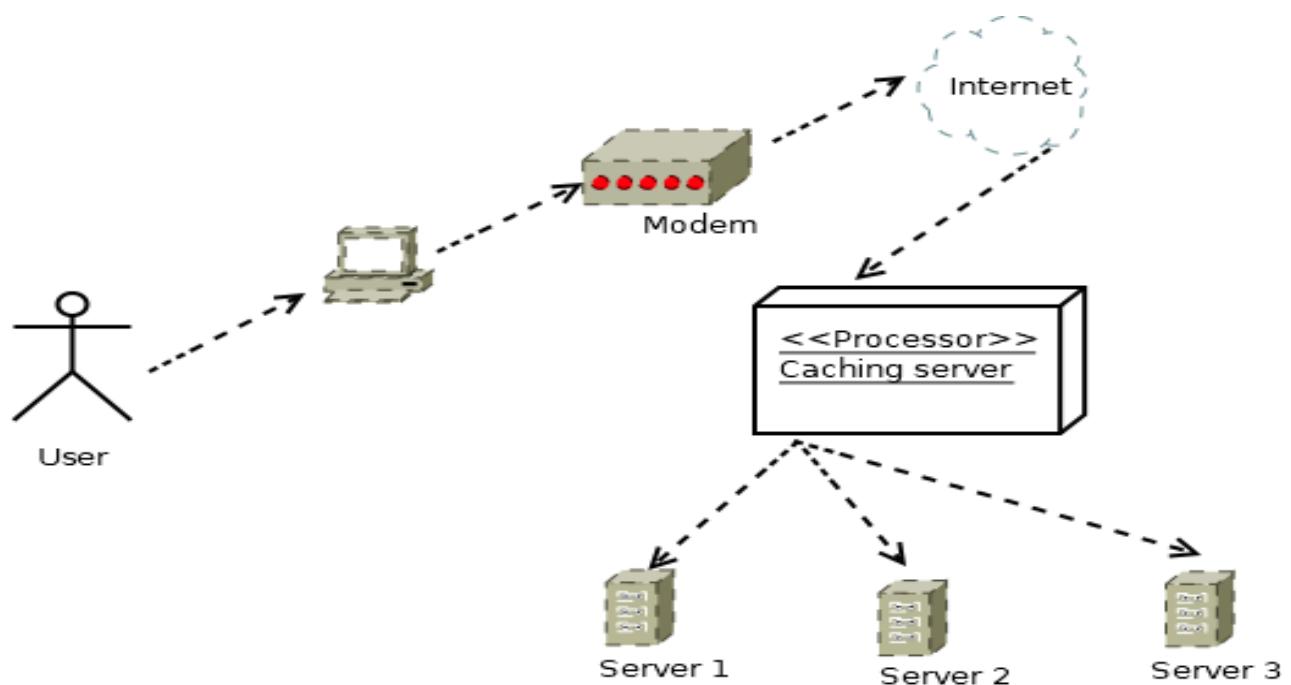
Object diagrams are used to render a set of objects and their relationships as an instance.



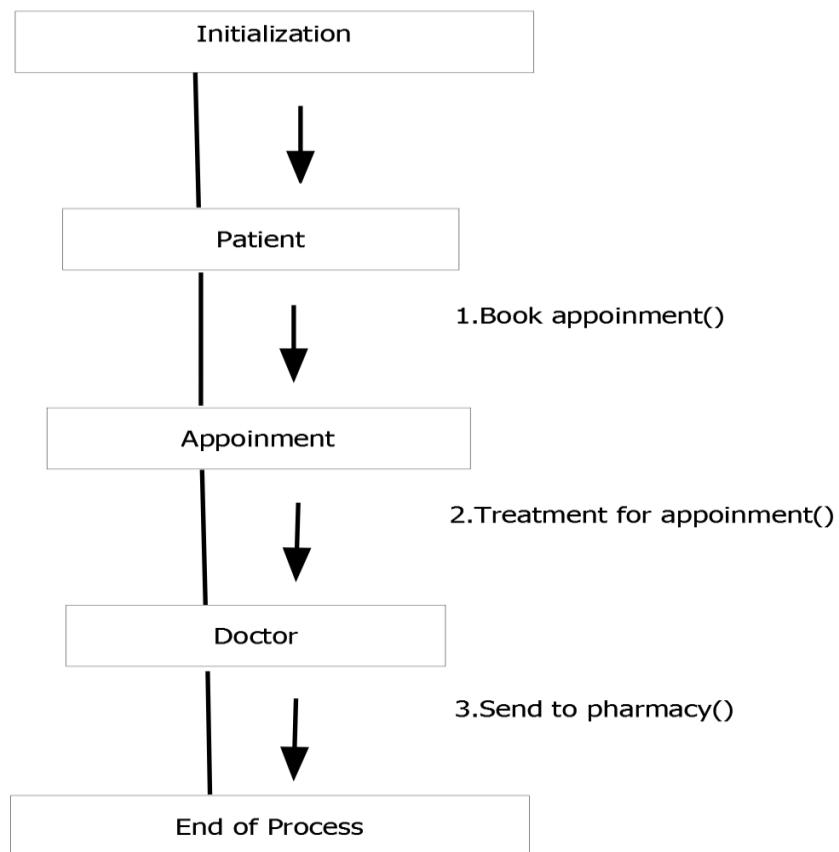
7.4.5 UML Deployment Diagram

Deployment diagrams are used to visualize the topology of the physical components of a system, where the software components are deployed.

Deployment diagrams are used to describe the static deployment view of a system. Deployment diagrams consist of nodes and their relationships.



7.4.6 UML Collaboration Diagram

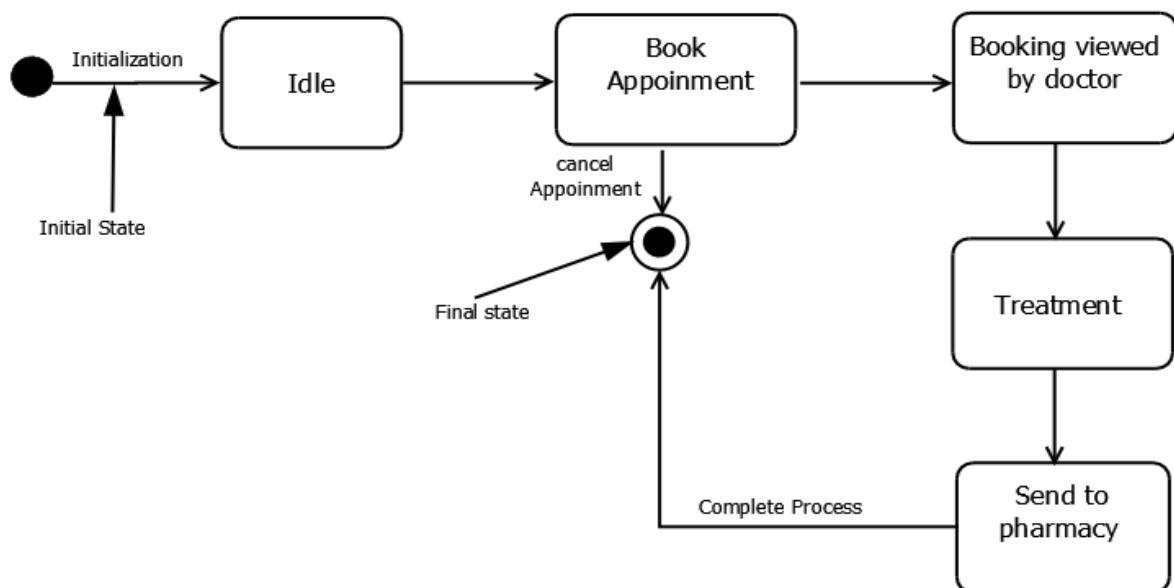


7.4.7 UML State chart Diagram

The name of the diagram itself clarifies the purpose of the diagram and other details. It describes different states of a component in a system. The states are specific to a component/object of a system.

A State chart diagram describes a state machine. State machine can be defined as a machine which defines different states of an object and these states are controlled by external or internal events.

Activity diagram explained in the next chapter, is a special kind of a State chart diagram. As State chart diagram defines the states, it is used to model the lifetime of an object.

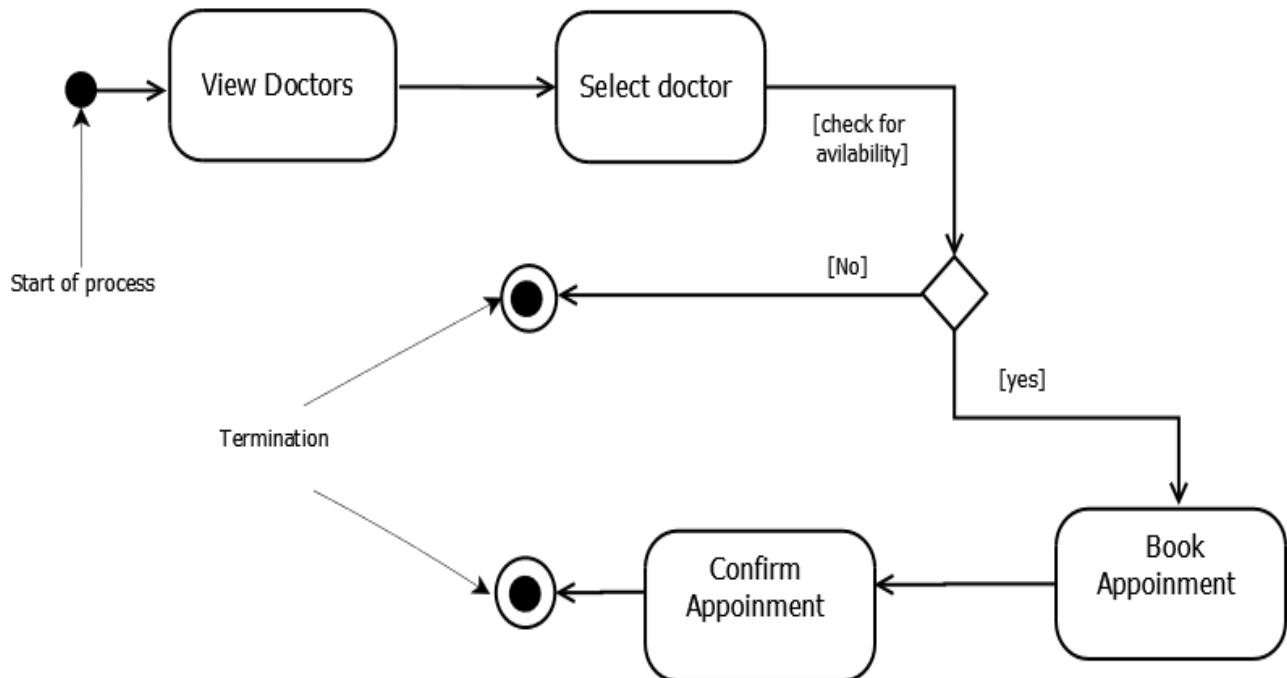


7.4.8 UML Activity Diagram

Activity diagram is another important diagram in UML to describe the dynamic aspects of the system.

Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent. Activity diagrams deal with all type of flow control by using different elements such as fork, join, etc.



7.5 SYSTEM SPECIFICATION

2.5.1 HARDWARE SPECIFICATION

Processor	- Pentium IV/AMD Dual core
RAM	- 2 GB
Hard disk	- 500 GB

7.5.2 SOFTWARE SPECIFICATION

Front End	- PHP
Backend	- MYSQL
Client on PC	- Windows 10
Technologies used	- Laravel, JS, HTML5, AJAX, PHP, CSS

7.6 SOFTWARE DESCRIPTION

7.6.1 PHP

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by Rasmus Ledorf in 1995, the reference implementation of PHP is now produced by the PHP group. While PHP originally stood for personal Home page, it now stands for PHP: Hypertext Preprocessor, a recursive acronym code is interpreted by a web server with a PHP processor module which generates the resulting web page commands can be embedded directly into a HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be used in standalone incompatible with the GNU General Public License (GPL) due to restrictions on the usage of the term PHP. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

7.6.2 MySQL

MySQL, the most popular Open Source SQL database management system, is developed, distributed, and supported by Oracle Corporation.

The MySQL Web site provides the latest information about MySQL software.

- **MySQL is a database management system.**

A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or the vast amounts of information in a corporate network. To add, access, and process data stored in a computer database, you need a database management system such as MySQL Server. Since computers are very good at handling large amounts of data, database management systems play a central role in computing, as standalone utilities, or as parts of other applications

- **MySQL databases are relational.**

A relational database stores data in separate tables rather than putting all the data in one big storeroom. The database structures are organized into physical files optimized for speed. The logical model, with objects such as databases, tables, views, rows, and columns, offers a flexible programming environment. You set up rules governing the relationships between different data fields, such as one-to-one, one-to-many, unique, required or optional, and “pointers” between

different tables. The database enforces these rules, so that with a well-designed database, your application never sees inconsistent, duplicate, orphan, out-of-date, or missing data.

The SQL part of “MySQL” stands for “Structured Query Language”. SQL is the most common standardized language used to access databases. Depending on your programming environment, you might enter SQL directly (for example, to generate reports), embed SQL statements into code written in another language, or use a language-specific API that hides the SQL syntax. SQL is defined by the ANSI/ISO SQL Standard. The SQL standard has been evolving since 1986 and several versions exist. In this manual, “SQL92” refers to the standard released in 1992, “SQL:1999” refers to the standard released in 1999, and “SQL:2003” refers to the current version of the standard. We use the phrase “the SQL standard” to mean the current version of the SQL Standard at any time.

- **MySQL software is Open Source.**

Open Source means that it is possible for anyone to use and modify the software. Anybody can download the MySQL software from the Internet and use it without paying anything. If you wish, you may study the source code and change it to suit your needs. The MySQL software uses the GPL (GNU General Public License), to define what you may and may not do with the software in different situations. If you feel uncomfortable with the GPL or need to embed MySQL code into a commercial application, you can buy a commercially licensed version from us. See the MySQL Licensing Overview for more information.

- **The MySQL Database Server is very fast, reliable, scalable, and easy to use.**

If that is what you are looking for, you should give it a try. MySQL Server can run comfortably on a desktop or laptop, alongside your other applications, web servers, and so on, requiring little or no attention. If you dedicate an entire machine to MySQL, you can adjust the settings to take advantage of all the memory, CPU power, and I/O capacity available. MySQL can also scale up to clusters of machines, networked together.

MySQL Server was originally developed to handle large databases much faster than existing solutions and has been successfully used in highly demanding production environments for several years. Although under constant development, MySQL Server today offers a rich and useful set of functions. Its connectivity, speed, and security make MySQL Server highly suited for accessing databases on the Internet.

- **MySQL Server works in client/server or embedded systems.**

The MySQL Database Software is a client/server system that consists of a multi-threaded SQL server that supports different backends, several different client programs and libraries, administrative tools, and a wide range of application programming interfaces (APIs).

We also provide MySQL Server as an embedded multi-threaded library that you can link into your application to get a smaller, faster, easier-to-manage standalone product.

- **A large amount of contributed MySQL software is available.**

MySQL Server has a practical set of features developed in close cooperation with our users. It is very likely that your favorite application or language supports the MySQL Database Server.

7.6.3 Laravel

Laravel is a free, open-source PHP web framework, created by Taylor Otwell and intended for the development of web applications following the model–view–controller (MVC) architectural pattern and based on Symphony. Some of the features of Laravel are a modular packaging system with a dedicated dependency manager, different ways for accessing relational databases, utilities that aid in application deployment and maintenance, and its orientation toward syntactic sugar.

Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality. Laravel is accessible, yet powerful, providing powerful tools needed for large, robust applications. A superb inversion of control container, expressive migration system, and tightly integrated unit testing support give you the tools you need to build any application with which you are tasked.

Laravel offers you the following advantages, when you are designing a web application based on it –

- The web application becomes more scalable, owing to the Laravel framework.
- Considerable time is saved in designing the web application, since Laravel reuses the components from another framework in developing web application.
- It includes namespaces and interfaces, thus helps to organize and manage resources.

Composer

Composer is a tool which includes all the dependencies and libraries. It allows a user to create a project with respect to the mentioned framework (for example, those used in Laravel installation).

Third party libraries can be installed easily with help of composer. All the dependencies are noted in composer.json file which is placed in the source folder.

Artisan

Command line interface used in Laravel is called Artisan. It includes a set of commands which assists in building a web application. These commands are incorporated from Symphony framework.

Laravel offers the following key features which makes it an ideal choice for designing web applications –

Modularity

Laravel provides 20 built in libraries and modules which helps in enhancement of the application. Every module is integrated with Composer dependency manager which eases updates.

Testability

Laravel includes features and helpers which helps in testing through various test cases. This feature helps in maintaining the code as per the requirements.

Routing

Laravel provides a flexible approach to the user to define routes in the web application. Routing helps to scale the application in a better way and increases its performance.

Configuration Management

A web application designed in Laravel will be running on different environments, which means that there will be a constant change in its configuration. Laravel provides a consistent approach to handle the configuration in an efficient way.

Query Builder and ORM

Laravel incorporates a query builder which helps in querying databases using various simple chain methods. It provides ORM (Object Relational Mapper) and Active Record implementation called Eloquent.

Schema Builder

Schema Builder maintains the database definitions and schema in PHP code. It also maintains a track of changes with respect to database migrations.

Template Engine

Laravel uses the Blade Template engine, a lightweight template language used to design hierarchical blocks and layouts with predefined blocks that include dynamic content.

E-mail

Laravel includes a mail class which helps in sending mail with rich content and attachments from the web application.

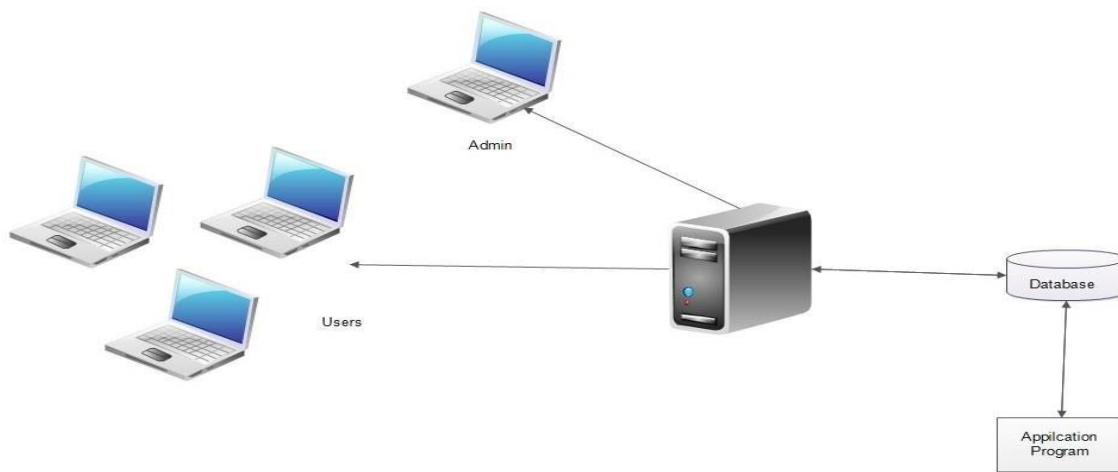
Authentication

User authentication is a common feature in web applications. Laravel eases designing authentication as it includes features such as register, forgot password and send password reminders.

7.7 SYSTEM DESIGN

Design is the first step into the development phase for any engineered product or system. Design is a creative process. A good design is the key to effective system. The term “design” is defined as “the process of applying various techniques and principles for the purpose of defining a process or a system in sufficient detail to permit its physical realization”. It may be defined as a process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization. Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm that is used. The system design develops the architectural detail required to build a system or product. As in the case of any systematic approach, this software too has undergone the best possible design phase fine tuning all efficiency, performance and accuracy levels. The design phase is a transition from a user-oriented document to a document to the programmers or database personnel. System design goes through two phases of development: Logical and Physical Design

7.7.1 ARCHITECTURAL DESIGN



The registered user, admin, service provider can access the e-workshop through internet using their Laptop, Smart Phone, Tablet or Desktop Computer. The System's application program processes the user's request and provides the required services by taking data from the system database

7.7.2 MODULE DESIGN

Admin Module

The system is under super vision of admin who manages doctor. Admin can view the appointment details, approve doctor's leave and also add specialization and doctors.

Manage Doctors	View Appointments
Approve Leave	Add Specialization

Patients Module

These users have to first register themselves to login into the system and users can book appointments for their required date and available time and also cancel their bookings. Patients can purchase medicine through online.

User registration, login	Book Appointment
Download Prescriptions	Purchase Medicines

Doctor Module

Doctors can view their appointments and view a particular person's history and add their treatment. Apply leave.

registration, login	View Appointments
Apply for Leave	Pay online

Pharmacy Module

They get medical details of each patient's directly from doctors. Pharmacy can deliver medicines to the particular users who are applying for online medicines.

login	Add Products
Approve Product Request	View online Booking

7.7.3 DATA FLOW DIAGRAM

UML is an acronym that stands for Unified Modeling Language. Simply put, UML is a modern approach to modeling and documenting software. In fact, it's one of the most popular business process modeling techniques.

It is based on diagrammatic representations of software components. By using visual representations, we are able to better understand possible flaws or errors in software or business processes.

UML was created as a result of the chaos revolving around software development and documentation. In the 1990s, there were several different ways to represent and document software systems. The need arose for a more unified way to visually represent those systems and as a result, in 1994-1996, the UML was developed by three software engineers working at Rational Software. It was later adopted as the standard in 1997 and has remained the standard ever since.

Mainly, UML has been used as a general-purpose modeling language in the field of software engineering. However, it has now found its way into the documentation of several business processes or workflows.

There are several types of UML diagrams and each one of them serves a different purpose regardless of whether it is being designed before the implementation or after (as part of documentation).

The two most broad categories that encompass all other types are Behavioral UML diagram and Structural UML diagram. As the name suggests, some UML diagrams try to analyze and depict the structure of a system or process, whereas others describe the behavior of the system, its actors, and its building components. The different types are broken down as follows:

7.7.4 DATABASE DESIGN

A database is an organized mechanism that has the capability of storing information through which a user can retrieve stored information in an effective and efficient manner. The data is the purpose of any database and must be protected.

The database design is a two-level process. In the first step, user requirements are gathered together and a database is designed which will meet these requirements as clearly as possible. This step is called Information Level Design and it is taken independent of any individual DBMS.

In the second step, this Information level design is transferred into a design for the specific DBMS that will be used to implement the system in question. This step is called Physical Level Design, concerned with the characteristics of the specific DBMS that will be used. A database design runs

parallel with the system design. The organization of the data in the database is aimed to achieve the following two major objectives.

- Data Integrity
- Data independence

Relational Database Management System (RDBMS)

A relational model represents the database as a collection of relations. Each relation resembles a table of values or file of records. In formal relational model terminology, a row is called a tuple, a column header is called an attribute and the table is called a relation. A relational database consists of a collection of tables, each of which is assigned a unique name. A row in a tale represents a set of related values.

Relations, Domains & Attributes

A table is a relation. The rows in a table are called tuples. A tuple is an ordered set of n elements. Columns are referred to as attributes. Relationships have been set between every table in the database. This ensures both Referential and Entity Relationship Integrity. A domain D is a set of atomic values. A common method of specifying a domain is to specify a data type from which the data values forming the domain are drawn. It is also useful to specify a name for the domain to help in interpreting its values.

Every value in a relation is atomic, that is not decomposable.

Relationships

- Table relationships are established using Key. The two main keys of prime importance are Primary Key & Foreign Key. Entity Integrity and Referential Integrity Relationships can be established with these keys.
- Entity Integrity enforces that no Primary Key can have null values.
- Referential Integrity enforces that no Primary Key can have null values.
- Referential Integrity for each distinct Foreign Key value, there must exist a matching Primary Key value in the same domain. Other key is Super Key and Candidate Keys.

Normalization

Data are grouped together in the simplest way so that later changes can be made with minimum impact on data structures. Normalization is formal process of data structures in manners that eliminates redundancy and promotes integrity. Normalization is a technique of separating redundant fields and breaking up a large table into a smaller one. It is also used to avoid insertion, deletion, and updating anomalies. Normal form in data modelling use two concepts, keys and relationships. A key uniquely identifies a row in a table. There are two types of keys, primary key and foreign key. A primary key is an element or a combination of elements in a table whose purpose is to identify records from the same table. A foreign key is a column in a table that uniquely identifies record from a different table. All the tables have been normalized up to the third normal form.

As the name implies, it denotes putting things in the normal form. The application developer via normalization tries to achieve a sensible organization of data into proper tables and columns and where names can be easily correlated to the data by the user. Normalization eliminates repeating groups at data and thereby avoids data redundancy which proves to be a great burden on the computer resources. These include:

- ✓ Normalize the data.
- ✓ Choose proper names for the tables and columns.
- ✓ Choose the proper name for the data.

First Normal Form

The First Normal Form states that the domain of an attribute must include only atomic values and that the value of any attribute in a tuple must be a single value from the domain of that attribute. In other words, 1NF disallows “relations within relations” or “relations as attribute values within tuples”. The only attribute values permitted by 1NF are single atomic or indivisible values. The first step is to put the data into First Normal Form. This can be done by moving data into separate tables where the data is of similar type in each table. Each table is given a Primary Key or Foreign Key as per requirement of the project. In this we form new relations for each non-atomic attribute or nested relation. This eliminated repeating groups of data. A relation is said to be in first normal form if only if it satisfies the constraints that contain the primary key only.

Second Normal Form

According to Second Normal Form, for relations where primary key contains multiple attributes, no non-key attribute should be functionally dependent on a part of the primary key. In this we decompose and setup a new relation for each partial key with its dependent attributes. Make sure to keep a relation with the original primary key and any attributes that are fully functionally dependent on it. This step helps in taking out data that is only dependent on a part of the key. A relation is said to be in second normal form if and only if it satisfies all the first normal form conditions for the primary key and every non-primary key attributes of the relation is fully dependent on its primary key alone.

Third Normal Form

According to Third Normal Form, Relation should not have a non-key attribute functionally determined by another non-key attribute or by a set of non-key attributes. That is, there should be no transitive dependency on the primary key. In this we decompose and set up relation that includes the non-key attributes that functionally determines other non-key attributes. This step is taken to get rid of anything that does not depend entirely on the Primary Key. A relation is said to be in third normal form if only if it is in second normal form and more over the non key attributes of the relation should not be depend on another non-key attribute.

TABLES**Table structure for table tbl_register**

Column	Type	Key	Description
reg_id	int(10)	Primary key	Id of user
p_name	varchar(25)		Name of Patient
email	varchar(25)		E-mail of user
gender	varchar(25)		Gender
dob	int(10)		Date of Birth
phone	int(11)		Phone number
h_name	varchar(25)		House name
street	varchar(25)		Street of user
dist_id	int(11)	Foreign key in tbl_district	District id
city_id	int(11)	Foreign key in tbl_city	City id
pin	int(10)		Pincode
role	varchar(25)		Role
status	varchar(10)		status

Table structure for table tbl_login

Column	Type	Default	Description
login_id	int(10)	Primary key	Login id of user
email	varchar(25)		Email of user
password	varchar(25)		Password of user
role	varchar(25)		Role of user
status	int(1)		status

Table structure for table tbl_city

Column	Type	Key	Description
city_id	int(10)	Primary key	city id
cname	varchar(25)		City name
status	varchar(10)	status	status

Table structure for table tbl_district

Column	Type	Key	Description
dist_id	int(10)	Primary key	District id
dname	varchar(25)		District name
city_id	int(10)	Foreign key in tbl_City	City id
status	varcahar(1)		status

Table structure for table tbl_doctor

Column	Type	Key	Description
d_id	int(10)	Primary key	Id of user
sid	Int(10)	Foreign key in tbl_Specialization	Id of Specialization
d_name	varchar(25)		Name of Doctor
surname	varchar(25)		Surname
email	varchar(25)		E-mail of Doctor
gender	varchar(10)		Gender
dob	varchar(10)		Date of Birth
phone	varchar(25)		Phone number
h_name	varchar25)		House name
street	varchar(25)		Street
dist_id	int(11)	Foreign key in tbl_district	District id

City_id	int(11)	Foreign key in tbl_city	City id
pin	varchar(10)		Pincode
qualification	varchar(20)		Year of experience
emp_history	varchar(25)		History of employee
fee	int(10)		Doctor fee
photo	varchar(20)		Photo

Table structure for table tbl_appointment

Column	Type	Key	Description
a_id	int(10)	Primary key	Appointment Id
d_id	int(10)	Foreign key in tbl_doctor	Doctor Id
p_id	int(10)	Foreign key in tbl_register	Patient id
time	varchar(10)		Appointment time
date	varchar(10)		Appointment date
status	varchar(10)		Status

Table structure for table tbl_specilization

Column	Type	Key	Description
s_id	int(10)	Primary key	Specialization id
specialization	varchar(191)		Specialization name
status	int(11)		status

Table structure for table tbl_pharmacy

Column	Type	Key	Description
mid	int(10)	Primary key	Medicine id
b_id	int(10)	Foreign key in tbl_brand	Brand id
c_id	int(10)	Foreign key in tbl_category	Category id
m_name	varchar(25)		Medicine name
gram	varchar(20)		Gram of Medicine
quantity	int(11)		Quantity of Medicine
price	varchar(10)		Price of item
description	varchar(25)		Description of item
type	varchar(25)		Type of medicine
status	varchar(1)		status

Table structure for table tbl_brands

Column	Type	Key	Description
b_id	int(10)	Primary key	Id of Brand
brand_name	varchar(25)		Brand name
status	int(1)		status

Table structure for table tbl_category

Column	Type	Key	Description
c_id	int(10)	Primary key	Id of Category
category	varchar(191)		Category name
status	tinyint(1)		status

Table structure for table tbl_leaves

Column	Type	Default	Description
l_id	int(10)	Primary key	Id of Leave
d_id	int(10)	Foreign key in tbl_doctor	Doctor's id
date	varchar(25)		Leave date
session	varchar(25)		session
reason	varchar(25)		Leave reason
status	varchar(25)		status

Table structure for table tbl_images

Column	Type	Key	Description
img_id	int(10)	Primary key	Image Id
mid	int(10)	Foreign key in tbl_pharmacy	Medicine id
image	varchar(25)		image
status	varchar(1)		status

Table Structure for table tbl_card

Column	Type	Key	Description
c_id	int(10)	Primary key	Card Id
c_name	varchar(25)		Card id
c_number	varchar(20)		Card number
cvv	varchar(10)		CVV
exp	varchar(25)		Expiry date
status	varchar(10)		Status

Table Structure for table tbl_doctor_histories

Column	Type	Key	Description
dh_id	int(20)	Primary key	Id of Doctor history
d_id	varchar(25)	Foreign key in tbl_doctor	Id of doctor
history	varchar(25)		History of Doctor
status	varchar(10)		Status

Table structure for table tbl_requires

Column	Type	Key	Description
r_id	int(20)	Primary key	Id of required medicine
p_id	varchar(10)	Foreign key in tbl_register	Id of Patient
date	varchar(10)		Date of request
status	varchar(10)		Status

Table structure for table tbl_medicine_requests

Column	Type	Key	Description
mr_id	bigint(20)	Primary key	Id of medicine request
r_id	varchar(10)	Foreign key in tbl_requires	Id of required medicine
mid	varchar(10)	Foreign key in tbl_requires	Id of medicine
status	varchar(10)		Status

Table structure for table tbl_prescriptions

Column	Type	Key	Description
pr_id	bigint(20)	Primary key	Id of medicine request
r_id	varchar(10)	Foreign key in tbl_requires	Id of required medicine
prescription	varchar(25)		Added Prescription
status	varchar(10)		Status

Table structure for table tbl_treatments

Column	Type	Key	Description
trt_id	int(11)	Primary key	Id of treatment
p_id	varchar(10)	Foreign key in tbl_register	Id of patient
d_id	varchar(10)	Foreign key in tbl_doctor	Id of doctor
date	varchar(10)		Date of treatment
diseases	varchar(25)		Disease of Patient
status	varchar(10)		Status

Table structure for table tbl_trt_details

Column	Type	Key	Description
td_id	bigint(10)	Primary key	Id of treatment details
trt_id	varchar(10)	Foreign key in tbl_treatments	Id of treatment
treatment	varchar(25)		Treatment List
time	varchar(10)		Time for Medicine
section	varchar(25)		Section for medicines
status	varchar(10)		Status

Table structure for table tbl_amounts

Column	Type	Key	Description
amt_id	bigint(20)	Primary key	Id of amount
p_id	varchar(10)	Foreign key in tbl_register	Id of patient
amount	int(10)		Amount
status	varchar(10)		Status

Table structure for table tbl__orders

Column	Type	Key	Description
o_id	bigint(20)	Primary key	Id of order
amt_id	varchar(191)	Foreign key in tbl_amout	Id of Amount
p_id	varchar(191)	Foreign key in tbl_register	Id of Patient
mid	varchar(10)	Foreign key in tbl_pharmacy	Id of medicine
quantity	int(10)		Quantity of product
price	int(11)		Price of product
status	varchar(10)		status

Table structure for table tbl__delievry_addresses

Column	Type	Key	Description
dl_id	bigint(10)	Primary key	Id of delivery address
p_id	varchar(10)	Foreign key in tbl_register	Id of Patient
name	varchar(25)		Name of user
address	varchar(25)		Address
city	varchar(15)		City of user
district	varchar(10)		District of user
pin	varchar(10)		Pin number
phone	varchar(12)		Phone number
status	varchar(10)		status

7.8 SYSTEM TESTING

7.8.1 INTRODUCTION

Software Testing is the process of executing software in a controlled manner, in order to answer the question - Does the software behave as specified? Software testing is often used in association with the term's verification and validation. Validation is the checking or testing of items, includes software, for conformance and consistency with an associated specification. Software testing is just one kind of verification, which also uses techniques such as reviews, analysis, inspections, and walkthroughs. Validation is the process of checking that what has been specified is what the user actually wanted.

Validation: Are we doing the right job? Verification: Are we doing the job right?

Software testing should not be confused with debugging. Debugging is the process of analyzing and localizing bugs when software does not behave as expected. Although the identification of some bugs will be obvious from playing with the software, a methodical approach to software testing is a much more thorough means for identifying bugs. Debugging is therefore an activity which supports testing, but cannot replace testing.

Other activities which are often associated with software testing are static analysis and dynamic analysis. Static analysis investigates the source code of software, looking for problems and gathering metrics without actually executing the code. Dynamic analysis looks at the behavior of software while it is executing, to provide information such as execution traces, timing profiles, and test coverage information.

Testing is a set of activity that can be planned in advanced and conducted systematically. Testing begins at the module level and work towards the integration of entire computers-based system. Nothing is complete without testing, as it vital success of the system testing objectives, there are several rules that can serve as testing objectives. They are:

Testing is a process of executing a program with the intent of finding an error.

- A good test case is one that has high possibility of finding an undiscovered error.
- A successful test is one that uncovers an undiscovered error.

If a testing is conducted successfully according to the objectives as stated above, it would uncover errors in the software. Also testing demonstrate that the software function appear to be working according to the specification, that performance requirement appear to have been met.

There are three ways to test program.

- For correctness
- For implementation efficiency
- For computational complexity

Test for correctness are supposed to verify that a program does exactly what it was designed to do. This is much more difficult than it may at first appear, especially for large programs.

7.8.2 TEST PLAN

A test plan implies a series of desired course of action to be followed in accomplishing various testing methods. The Test Plan acts as a blue print for the action that is to be followed. The software engineers create a computer program, its documentation and related data structures. The software developers is always responsible for testing the individual units of the programs, ensuring that each performs the function for which it was designed. There is an independent test group (ITG) which is to remove the inherent problems associated with letting the builder to test the thing that has been built. The specific objectives of testing should be stated in measurable terms. So that the mean time to failure, the cost to find and fix the defects, remaining defect density or frequency of occurrence and test work-hours per regression test all should be stated within the test plan.

The levels of testing include:

- ❖ Unit testing
- ❖ Integration Testing
- ❖ Data validation Testing
- ❖ Output Testing

7.8.2.1 Unit Testing

Unit testing focuses verification effort on the smallest unit of software design – the software component or module. Using the component level design description as a guide, important control paths are tested to uncover errors within the boundary of the module.

The relative complexity of tests and uncovered scope established for unit testing. The unit testing is white-box oriented, and step can be conducted in parallel for multiple components. The modular interface is tested to ensure that information properly flows into and out of the program unit under test. The local data structure is examined to ensure that data stored temporarily maintains its integrity during all steps in an algorithm's execution. Boundary conditions are tested to ensure that all statements in a module have been executed at least once. Finally, all error handling paths are tested.

Tests of data flow across a module interface are required before any other test is initiated. If data do not enter and exit properly, all other tests are moot. Selective testing of execution paths is an essential task during the unit test. Good design dictates that error conditions be anticipated and error handling paths set up to reroute or cleanly terminate processing when an error does occur. Boundary testing is the last task of unit testing step. Software often fails at its boundaries.

Unit testing was done by treating each module as separate entity and testing each one of them with a wide spectrum of test inputs. Some flaws in the internal logic of the modules were found and were rectified. After coding each module is tested and run individually. All unnecessary code were removed and ensured that all modules are working, and gives the expected result.

7.8.2.2 Integration Testing

Integration testing is systematic technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing. The objective is to take unit tested components and build a program structure that has been dictated by design. The entire program is tested as whole. Correction is difficult because isolation of causes is complicated by vast expanse of entire program. Once these errors are corrected, new ones appear and the process continues in a seemingly endless loop.

After performing unit testing in the System all the modules were integrated to test for any inconsistencies in the interfaces. Moreover, differences in program structures were removed and a unique program structure was evolved.

7.8.2.3 Validation Testing

This is the final step in testing. In this the entire system was tested as a whole with all forms, code, modules and class modules. This form of testing is popularly known as Black Box testing or System tests.

Black Box testing method focuses on the functional requirements of the software. That is, Black Box testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program.

Black Box testing attempts to find errors in the following categories; incorrect or missing functions, interface errors, errors in data structures or external data access, performance errors and initialization errors and termination errors.

7.8.2.4 User Acceptance Testing

The system considered is tested for user acceptance; here it should satisfy the firm's need. The software should keep in touch with perspective system; user at the time of developing and making changes whenever required. This done with respect to the following points:

- Input Screen Designs,
- Output Screen Designs,

The above testing is done taking various kinds of test data. Preparation of test data plays a vital role in the system testing. After preparing the test data, the system under study is tested using that test data. While testing the system by which test data errors are again uncovered and corrected by using above testing steps and corrections are also noted for future use

7.9 IMPLEMENTATION

Implementation is the stage of the project where the theoretical design is turned into a working system. It can be considered to be the most crucial stage in achieving a successful new system gaining the users confidence that the new system will work and will be effective and accurate. It is primarily concerned with user training and documentation. Conversion usually takes place about the same time the user is being trained or later. Implementation simply means convening a new system design into operation, which is the process of converting a new revised system design into an operational one.

At this stage the main work load, the greatest upheaval and the major impact on the existing system shifts to the user department. If the implementation is not carefully planned or controlled, it can create chaos and confusion.

Implementation includes all those activities that take place to convert from the existing system to the new system. The new system may be a totally new, replacing an existing manual or automated system or it may be a modification to an existing system. Proper implementation is essential to provide a reliable system to meet organization requirements. The process of putting the developed system in actual use is called system implementation. This includes all those activities that take place to convert from the old system to the new system. The system can be implemented only after through testing is done and if it is found to be working according to the specifications. The system personnel check the feasibility of the system. The more complex the system being implemented, the more involved will be the system analysis and design effort required to implement the three main aspects: education and training, system testing and changeover.

The implementation state involves the following tasks:

- Careful planning.
- Investigation of system and constraints.
- Design of methods to achieve the changeover. Training of the staff in the changeover phase.

7.9.1 IMPLEMENTATION PROCEDURE

Implementation of software refers to the final installation of the package in its real environment, to the satisfaction of the intended uses and the operation of the system. In many organizations someone who will not be operating it, will commission the software development project. In the initial stage people doubt about the software but we have to ensure that the resistance does not build up, as one has to make sure that:

- The active user must be aware of the benefits of using the new system.
- Their confidence in the software is built up.
- Proper guidance is imparted to the user so that he is comfortable in using the application.

Before going ahead and viewing the system, the user must know that for viewing the result, the server program should be running in the server. If the server object is not up running on the server, the actual process won't take place

7.9.2 USER TRAINING

User training is designed to prepare the user for testing and converting the system. To achieve the objective and benefits expected from computer-based system, it is essential for the people who will be involved to be confident of their role in the new system. As system becomes more complex, the need for training is more important. By user training the user comes to know how to enter data, respond to error messages, interrogate the database and call up routine that will produce reports and perform other necessary functions. Training on the Application Software After providing the necessary basic training on computer awareness the user will have to be trained on the new application software. This will give the underlying philosophy of the use of the new system such as the screen flow, screen design type of help on the screen, type of errors while entering the data, the corresponding validation check at each entry and the ways to correct the date entered. It should then cover information needed by the specific user/ group to use the system or part of the system while imparting the training of the program on the application. This training may be different across different user groups and across different levels of hierarchy.

7.9.2 OPERATIONAL DOCUMENT

After providing the necessary basic training on computer awareness the user will have to be trained on the new application software. This will give the underlying philosophy of the use of the new system such as the screen flow, screen design type of help on the screen, type of errors while entering the data, the corresponding validation check at each entry and the ways to correct the date entered. It should then cover information needed by the specific user/ group to use the system or part of the system while imparting the training of the program on the application. This training may be different across different user groups and across different levels of hierarchy.

7.9.4 SYSTEM MAINTENANCE

Maintenance is the enigma of system development. The maintenance phase of the software cycle is the time in which a software product performs useful work. After a system is successfully implemented, it should be maintained in a proper manner. System maintenance is an important aspect in the software development life cycle. The need for system maintenance is for it to make adaptable to the changes in the system environment. Software maintenance is of course, far more than "Finding Mistakes".

7.10 CONCLUSION & FUTURE ENHANCEMENTS

7.10.1 FUTURE ENHANCEMENT

- Directly getting the images for CT Scan or X-Rays from connected device.
- Mapped with Insurance Companies for claim processing.
- Producing ECG using connected device.
- Video Conferencing facility for remote areas for treatments.

7.10.2 CONCLUSION

To conclude the description about the project: The project developed using PHP and MySQL is based on the requirement specification of the user and the analysis of the existing system, with flexibility for future enhancement.

The expanded functionality of today's software requires an appropriate approach towards software development. The whole systems activities are divided into four major parts like patients, doctors, admin and pharmacy. Each one has their own role to perform and system respond accordingly. managing system that helps doctors in their work and also patients to book doctor appointments and view medical progress. The system allows doctors to manage their booking slots online. Patients are allowed to book empty slots online and those slots are reserved in their name. This particular project deals with the problems on managing a hospital and avoids the problems which occur when carried manually.

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WEBSITES:

- www.w3schools.com
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- www.agilemodeling.com/artifacts/useCaseDiagram.html

7.12 APPENDIX

7.12.1 SAMPLE CODE

```
public function Login(Request $request)
{
    $name=$request->input('username');
    $pwd=$request->input('password');
    $user=DB::table('tbl_doctors')->where('email',$name)->first();
    $check1=DB::table('Logins')->where(['email'=>$name,'password'=>$pwd,'role']==0])->get();
    $check2=DB::table('Logins')->where(['email'=>$name,'password'=>$pwd,'role']==1])->get();
    $check3=DB::table('Logins')->where(['email'=>$name,'password'=>$pwd,'role']==2])->get();
    $check4=DB::table('Logins')->where(['email'=>$name,'password'=>$pwd,'role']==3])->get();
    if(count($check1)>0)
    {
        session_start();
        $request->session()->put('email',$name);
        return view("AdminHome");
    }
    elseif(count($check2)>0)
    {
        $request->session()->put('email',$name);
        return view("PatientHome");
    }
    elseif(count($check3)>0)
    {
        if($user->status==0)
        {
            $request->session()->put('email',$name);
            return view("Doctor.Detail");
        }
        else
    }
}
```

```
$request->session()->put('email',$name);
    return view("DoctorHome");
}

}

elseif(count($check4)>0)
{
    $request->session()->put('email',$name);
    return view("PharmacyHome");
}

else
{
    echo "not sucess";
}

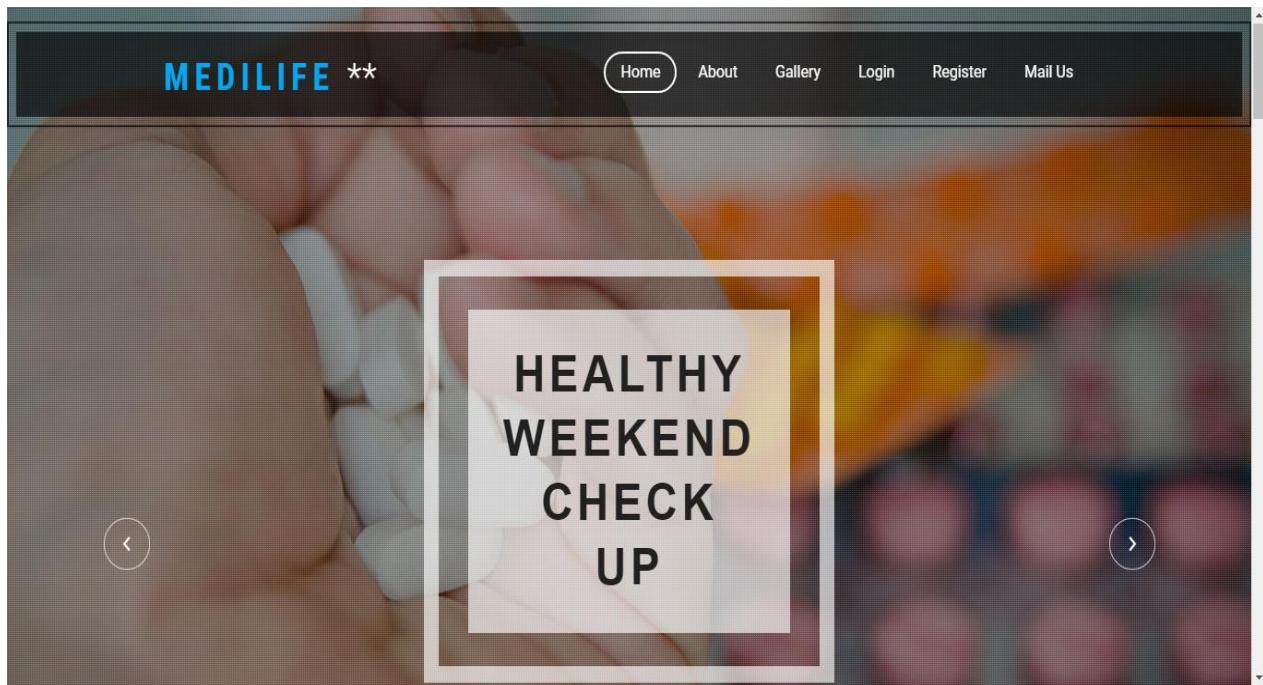
//}

}

public function logout(Request $request)
{
    session_start();
    session_destroy();
    session()->flush();
    return redirect('/Login');
}
```

7.12.2 SCREENSHOTS

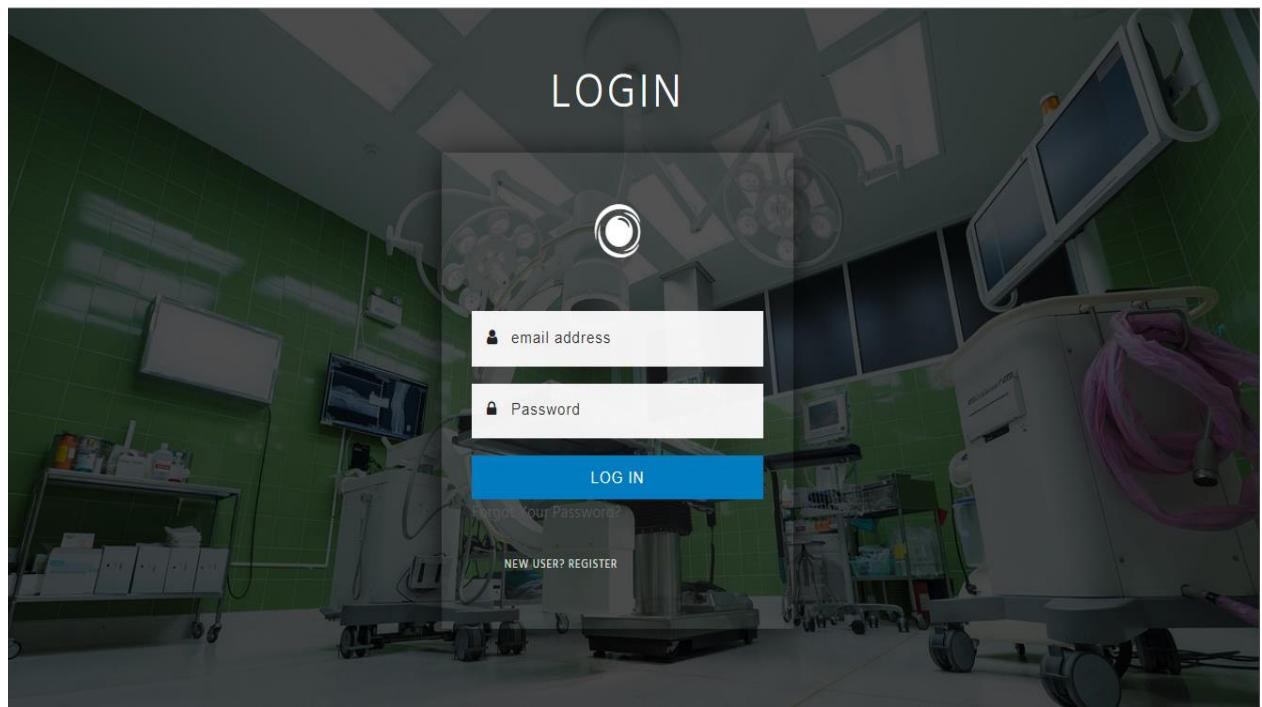
Index Page



Patient Registration

A screenshot of a "REGISTER" page. The background is a blue-toned photograph of a person's face. The form consists of several input fields arranged in a grid. Row 1: "Patient Name", "email", "Gender". Row 2: "Password", "Confirm-Password", "dd-mm-yyyy". Row 3: "Phone Number", "House Name", "Street". Row 4: A dropdown menu with "—SELECT—" and a dropdown menu with "—SELECT—", followed by a "Zip-code" field. At the bottom center is a "Register" button.

Login



Admin Home

A screenshot of the Admin Home dashboard for MEDILIFE. The left sidebar contains navigation links: Home, View, Add Doctor, Leave Request, Specialization, and Pharmacy. The main area has four colored boxes: red for Doctors (16), green for Patients (6), blue for Pharmacy (1), and black for Orders (0). Below these is a section titled 'VISITOR STATISTICS' showing a hallway image. The top right corner shows a user profile for 'admin@gmail.com'.

View Doctor

DOCTORS VIEW

photo	Name	Email	Gender	specialization	phone	Date of Birth	Qualification	Action
	nnnn jjj	ass@gmail.com	Male	Gynacology	9876567897	2019-03-20	nnnn	
	mariii jjj	amnb@gmail.com	Male	Radiology	9877678987	2019-02-28	jjjj	
	mariya Mathew	mariya@gmail.com	Male	Cadiology	987654323	2019-03-15	ggh	
	Tina Jose	tinajose1996@gmail.com	Female	Cadiology	9207064521	1996-11-15	MD	
	Sobia Shajihhhjj	sobia@gmail.com	Female	Gynacology	98765433	2019-03-20	nnnn	
	lal malhothra	lal@gmail.com	Male	Radiology	9888990098		mbbs	
	avilash Mathew	avi@gmail.com	Male	Radiology	9888984599	2019-05-23	mdnn	

List Doctor

SEARCH SPECIALIZATION

- HOSPITAL SERVICES
 - » X ray services
 - » Laboratory services
 - » Prescription services
 - » Nutritional counseling
 - » Ambulance Services

SEARCH

Dr. mariii jjj

Radiology

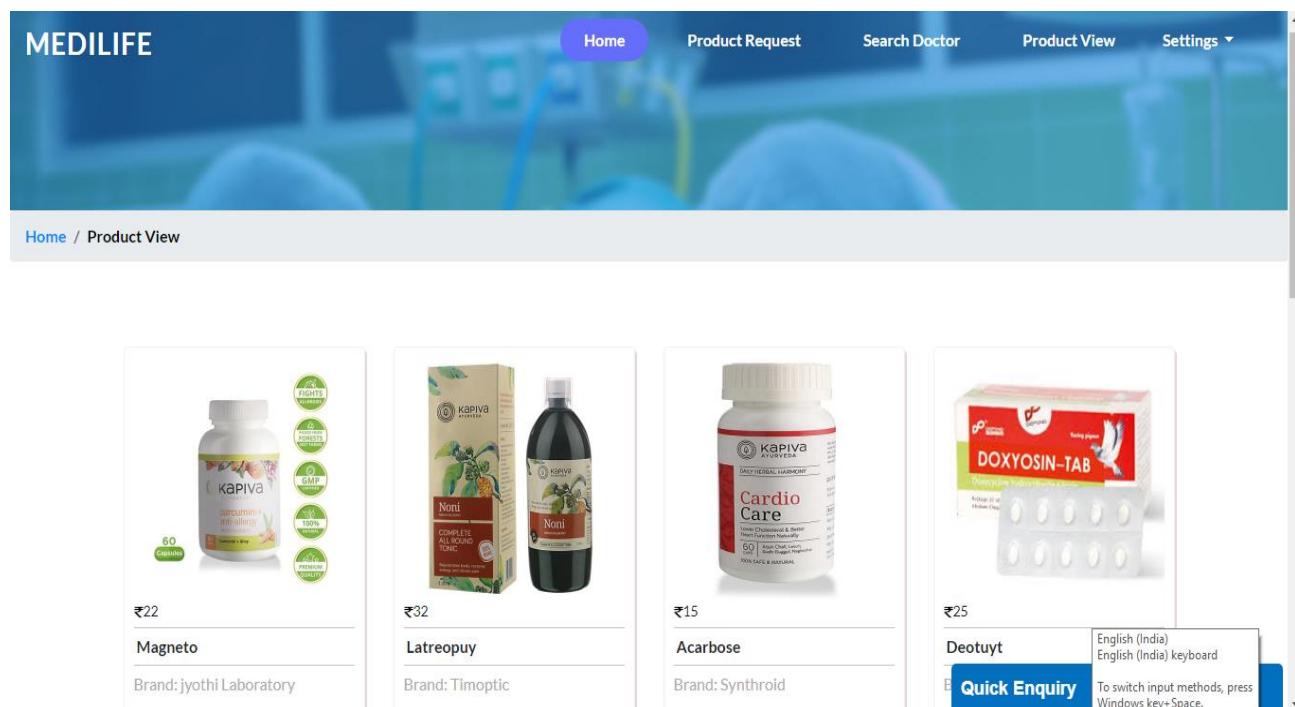
9877678987
amnb@gmail.com
₹ 677

VIEW PROFILE

Dr. lal malhothra

Quick Enquiry

Product View

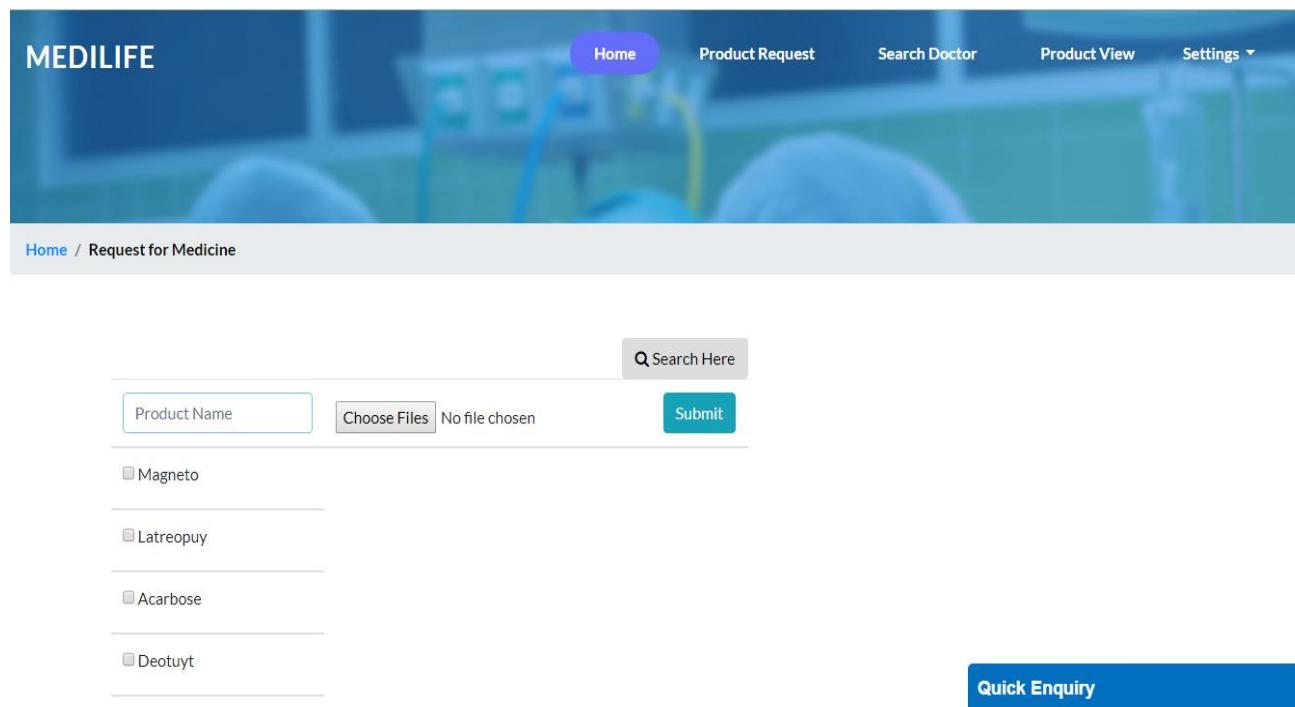


The screenshot shows the Medilife Product View page. At the top, there's a navigation bar with links for Home, Product Request, Search Doctor, Product View, and Settings. Below the navigation is a banner featuring a product image. Underneath the banner, the breadcrumb navigation shows 'Home / Product View'. The main content area displays four product cards:

- Magneto**: Price ₹22. Brand: jyothi Laboratory. Image: A white bottle of KAPIVA Curcumin + Anthology.
- Latreopuy**: Price ₹32. Brand: Timoptic. Image: A box and a bottle of KAPIVA Noni Complete All Round Tonic.
- Acarbose**: Price ₹15. Brand: Synthroid. Image: A white bottle of KAPIVA Cardio Care.
- Deotuyt**: Price ₹25. Brand: English (India). Image: A blister pack of DOXYOSIN-TAB tablets.

Each product card includes a 'Quick Enquiry' button at the bottom right. A tooltip for the 'Quick Enquiry' button indicates: 'To switch input methods, press Windows key+Space.'

Medicine Request



The screenshot shows the Medilife Medicine Request page. At the top, there's a navigation bar with links for Home, Product Request, Search Doctor, Product View, and Settings. Below the navigation is a banner featuring a product image. Underneath the banner, the breadcrumb navigation shows 'Home / Request for Medicine'. The main content area includes a search bar labeled 'Search Here' and several input fields:

- Product Name**: An input field with placeholder text 'Product Name'.
- Choose Files**: A button with the text 'Choose Files' and a message 'No file chosen'.
- Submit**: A blue 'Submit' button.
- Checklist Options**: A list of items with checkboxes:
 - Magneto
 - Latreopuy
 - Acarbose
 - Deotuyt
- Quick Enquiry**: A blue 'Quick Enquiry' button located at the bottom right of the form area.

Leave Apply

Date Selected
05/23/2019, 05/22/2019

Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

View Appointments

SI.No	Patient Name	Date	Time	Action
1	Meenu	05/18/2019	10:00-10:30	<button>View</button>
2	Meenu	04/18/2019	11:00-11:30	<button>View</button>

Add Medicines

ADD MEDICINES

Type	Select*
Medicine Name	<input type="text"/>
Brand	Select*
Category	Select*
Grams	<input type="text"/>
Quantity	<input type="text"/>
Price	<input type="text"/>
Product Description	<input type="text"/>
Image	<input type="file"/> Choose Files No file chosen
Save	

14 May 2019
Tuesday

View Medical Request

USER REQUEST FOR MEDICINE

Sl.No	Date	Candidate Name	Prescription	Medicine Name	Action
1	2019-05-01	Meenu	Doctor Patient Portal.pptx FORM DESIGN.docx	Acarbose Magneto	
2	2019-05-01	naya	Output.odt	Magneto Latropuy	 Rejected
3	2019-05-01	Arun	FORM DESIGN.docx		
4	2019-05-06	Meenu	FORM DESIGN.docx	Deotuyt	Approved