

KAITHANGHU

Project Report Submitted by

Ancel Treasa Jose

Reg. No: AJC17MCA-D005

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

AMAL JYOTHI COLLEGE OF ENGINEERING

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

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS



CERTIFICATE

This is to certify that the project entitled "**Kaithanghu**" is a bonafide record of the work done by **Ancel Treasa Jose AJC17MCA-D005**, 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.

Fr. Rubin Thottupuram

Head of the Department

Ms. Ginumol Joseph

Project Coordinator

Ms. Sruthimol Kurian

Project Supervisor

Expert from dept. of Computer Science and Engineering

Amal Jyothi College of Engineering

External Expert appointed by the university

DECLARATION

I hereby declare that the project report “**Kaithanghu**” 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.....

Ancel Treasa Jose

KANJIRAPPALLY

Reg. No: AJC17MCA-D005

ACKNOWLEDGEMENT

First and foremost, I thank Almighty God for his gracious guidance through the project. I take this opportunity to express my gratitude to all those who have helped me in completing the project successfully.

It has been said that gratitude is the memory of the heart. I acknowledge my deep sense of gratitude to our manager **Rev. Fr. Dr. Mathew Paikatt** for providing all the infrastructural facilities for us, our Principal **Dr. Z V Lakaparampil** for providing good faculty for guidance.

I take the immense pleasure in expressing my thanks to Head of the Department of Master of Computer Applications, **Fr. Rubin Thottupuram**, for his kind patronages in making this project a successful one. I would like to extend my sincere thanks to our coordinator **Ms. Ginumol Joseph** and my project guide **Ms. Sruthimol Kurian** for their guidance and cooperation, without which this would not have been a success.

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.

Ancel Treasa Jose

ABSTRACT

The project entitled “**Kaithanghu**” is a web-based application. The main objective of developing the project Kaithanghu is find home nurses for registered users. This provides the user with information regarding home nurses and their specializations. Users can sort home nurses according to category and availability. The users add patients by filling a form by details about the patients. There after users can book those home nurses who are available and who can take care of patient who is in need. After booking the users get the confirmation from the home nurse itself. Then the user can make the payment by online. There will be variations in the pre-assigned salary when home nurses take leaves.

CONTENT

Sl. No	Topic	Page No
	Introduction	1-2
Part 1	Deployment of the application in various cloud Platforms	3
P1.1	Google Cloud Platform (GCP)	4
P1.1.1	Introduction to Google Cloud Platform	4-5
P1.1.2	Compute Engine for the implementation of Kaithanghu	6-28
P1.1.3	Web Host Management Tools	28
P1.1.3.1	Web Host Manager(WHM)	28-29
P1.1.3.2	Control Panel (cPanel)	29-30
P1.1.3.3	Plesk Panel	31-34
P1.2	Amazon Web Services Cloud (AWS)	35
P1.2.1	Introduction Amazon Web Services Cloud	35
P1.2.2	Amazon Elastic Compute Cloud (Amazon EC2)	35
P1.2.3	Amazon Simple Storage Service (S3)	40
P1.2.4	AWS DB Products	41
P1.2.5	Devops in AWS	42
P1.3	Microsoft Azure Cloud	42
P1.3.1	Introduction to Microsoft Azure Cloud	42-49
P1.3.2	Devops in Azure	50-51
Part 2	Using Git as a Version Control System	52
P2.1	Introduction to GitHub	53
P2.2	Working With Git	54-55

Part 3	Data Design in Novel Technologies	56
P3.1	MongoDB	57
P3.1.1	Introduction to MongoDB	57
P3.1.2	Implementation of MongoDB	57-61
P3.2	Bigtable in GCP	62
P3.2.1	Introduction to Bigtable	62
P3.2.2	Implementation of Bigtable	63-64
Part 4	Search Engine Optimization	65
P4.1	Google AdWords	66
P4.1.1	Introduction to Google AdWords	66
P4.1.2	Implementation of Google AdWords	67-71
P4.2	Google AdSense	71
P4.2.1	Introduction to Google AdSense	71
P4.2.2	Implementation of AdSense	72-74
P4.3	Google Webmasters	75
P4.3.1	Introduction to Google Webmasters	75
P4.3.2	Implementation of Sitemap	75-77
P4.3.3	Implementation of Robots.txt	78
P4.4	Bing Webmaster Tool	79
P4.4.1	Introduction to Bing Webmaster Tool	79
P4.4.2	Implementation of Bing Webmaster Tool	79-82
Part 5	Site Security	83
P5.1	SiteLock Security	84
Part 6	Server Security and Penetration Testing	85
P6.1	Data Security	86
P6.2	HTTPS using .htaccess file	86-87
P6.3	ModSecurity Tools	87-95
P6.4	OWASP	95-96
P6.5	Kali linux	96-98
P6.6	Server Hardening	99-100

Part 7	Technology Frameworks	101
P7.1	ASP.NET MVC	102-104
P7.2	Angular	105-112
P7.3	Android	112-120
P7.4	Java Spring	121-126
P7.5	Laravel	127-131
Part 8	Project Documentation	132
P8.1	Introduction	133
P8.1.1	Project Overview	133
P8.1.2	Project Specification	133
P8.2	System Study	134
P8.2.1	Introduction	134
P8.2.2	Proposed system	134-136
P8.3	Requirement Analysis	136
P8.3.1	Feasibility Study	136
P8.3.1.1	Economical Feasibility	136-137
P8.3.1.2	Technical Feasibility	137
P8.3.1.3	Behavioral Feasibility	137
P8.4	Requirement Modeling	138
P8.4.1	UML Use Case Diagram	138-139
P8.4.2	UML Sequence Diagram	140
P8.4.3	Class Diagram	141
P8.4.4	Object Diagram	142
P8.4.5	Collaboration diagram	143
P8.4.6	Activity Diagram	144
P8.4.7	State chart Diagram	144-145
P8.5	System Specification	145
P8.5.1	Hardware Specification	145
P8.5.2	Software Specification	145
P8.6	Software Description	146
P8.6.1	MySQL	146-147
P8.7	System Design	148
P8.7.1	Architectural Design	148
P8.7.2	Data Base Design	149-155

P8.8	System Testing	156
P8.8.1	Introduction	156-157
P8.8.2	Test Plan	157
P8.8.2.1	Unit Testing	158
P8.8.2.2	Integration Testing	158-159
P8.8.2.3	Validation Testing	159
P8.8.3	Test Case	160-161
P8.9	Implementation	162
P8.9.1	Implementation Procedure	163
P8.9.2	Operational Document	163
P8.9.4	System Maintenance	163
P8.10	Conclusion & Future Enhancements	164
P8.10.1	Future Enhancement	164
P8.10.2	Conclusion	164
P8.11	Bibliography	164-165
P8.12	Appendix	165
P8.12.1	Sample Code	165-167
P8.12.2	Screen Shots	167-171

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

The project entitled “**Kaithanghu**” is a web-based application. The main objective of developing the project Kaithanghu is find home nurses for registered users. This provides the user with information regarding home nurses and their specializations. Users can sort home nurses according to category and availability. The users add patients by filling a form by details about the patients. There after users can book those home nurses who are available and who can take care of patient who is in need. After booking the users get the confirmation from the home nurse itself. Then the user can make the payment by online. There will be variations in the pre-assigned salary when home nurses take leaves.

The project after development was hosted in various cloud platforms like Google, Amazon and Azure. Google Cloud Platform, offered by Google, is a suite of cloud computing services that runs on the same infrastructure that Google uses internally for its end-user products. Amazon Web Services offers reliable, scalable, and inexpensive cloud computing services which is free to join, pay only for what you use. Microsoft Azure is an open, flexible, enterprise-grade cloud computing platform.

The project has also been tested using the kali Linux tools. Kali Linux is a Debian-based Linux distribution aimed at advanced Penetration Testing and Security Auditing. The version control System used during the development time was Git. Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

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

P1.1 Google Cloud Platform

P1.1.1 Introduction To Google Cloud Platform

With Google Cloud Platform (GCP), you can build, test, and deploy applications on Google's highly-scalable and reliable infrastructure for your web, mobile, and backend solutions.

Overview

This overview is designed to help you understand the overall landscape of Google Cloud Platform (GCP). Here, you'll take a brief look at some of the commonly used features and get pointers to documentation that can help you go deeper. Knowing what's available and how the parts work together can help you make decisions about how to proceed. You'll also get pointers to some tutorials that you can use to try out GCP in various scenarios. And GCE allows administrators to select the region and zone where certain data resources will be stored and used. Currently, GCE has three regions: United States, Europe and Asia. Each region has two availability zones and each zone supports either Ivy Bridge or Sandy Bridge processors. GCE also offers a suite of tools for administrators to create advanced networks on the regional level.

GCP resources

GCP consists of a set of physical assets, such as computers and hard disk drives, and virtual resources, such as virtual machines (VMs), that are contained in Google's data centers around the globe. Each data center location is in a global *region*. Regions include Central US, Western Europe, and East Asia. Each region is a collection of *zones*, which are isolated from each other within the region. Each zone is identified by a name that combines a letter identifier with the name of the region. For example, zone an in the East Asia region is named asia-east1-a.

Accessing resources through services

In cloud computing, what you might be used to thinking of as software and hardware products, become *services*. These services provide access to the underlying resources. The list of available GCP services is long, and it keeps growing. When you develop your website or application on GCP, you mix and match these services into combinations that provide the infrastructure you need, and then add your code to enable the scenarios you want to build.

Global, regional, and zonal resources

Some resources can be accessed by any other resource, across regions and zones. These global resources include preconfigured disk images, disk snapshots, and networks. Some resources can be accessed only by resources that are located in the same region.

Persistent disk

Every Google Compute Engine instance starts with a disk resource called persistent disk. Persistent disk provides the disk space for instances and contains the root filesystem from which the instance boots. Persistent disks can be used as raw block devices. By default, Google Compute Engine uses SCSI for attaching persistent disks. Persistent Disks provide straightforward, consistent and reliable storage at a consistent and reliable price, removing the need for a separate local ephemeral disk. Persistent disks need to be created before launching an instance.

Projects

Any GCP resources that you allocate and use must belong to a project. You can think of a project as the organizing entity for what you're building. A project is made up of the settings, permissions, and other metadata that describe your applications. Resources within a single project can work together easily, for example by communicating through an internal network, subject to the regions-and-zones rules. The resources that each project contains remain separate across project boundaries; you can only interconnect them through an external network connection.

Each GCP project has:

- A project name, which you provide.
- A project ID, which you can provide or GCP can provide for you.
- A project number, which GCP provides.

P1.1.2 Compute Engine for the implementation of Application

Step 1 - Log on to google cloud platform account

The screenshot shows the Google Cloud Platform homepage. At the top, there's a navigation bar with links for Why Google, Products, Solutions, Launcher, Pricing, Customers, Documentation, Support, and Partners. On the right side of the navigation bar are 'CONSOLE' and 'CONTACT SALES' buttons. Below the navigation bar, there's a large banner with the text 'Build What's Next' and 'Better software. Faster.' followed by three bullet points: '✓ Use Google's core infrastructure, data analytics and machine learning.', '✓ Secure and fully featured for all enterprises.', and '✓ Committed to open source and industry leading price-performance.' Below the banner are two buttons: 'GO TO CONSOLE' (in a dark blue box) and 'CONTACT SALES' (in a white box). Further down, there are three sections: 'Forrester Research' (Google Cloud is named the Insight PaaS Leader by Forrester), 'GCP Region Expansion' (Run workloads in even more locations around the world, Our newest regions: Montreal and Netherlands.), and 'Response to CPU Vulnerabilities' (Information and steps you may take to protect your organization from Spectre and Meltdown.).

Step 2- Creating a new project

The screenshot shows the Google Cloud Platform dashboard for a project named 'myproject'. At the top, there's a message about credit and a trial period, along with 'DISMISS' and 'UPGRADE' buttons. The dashboard has tabs for 'DASHBOARD' and 'ACTIVITY'. On the left, there's a sidebar with 'Project info' (Project name: myproject, Project ID: zippu-ace-194003, Project number: 1090196698157) and 'Resources' (Compute Engine: 3 instances, Cloud Storage: 5 buckets, Cloud SQL: 3 instances). The main area features a 'Compute Engine' chart showing CPU utilization over time, with a link to 'Go to the Compute Engine dashboard'. To the right, there are several status boxes: 'Google Cloud Platform status' (All services normal), 'Billing' (Estimated charges: INR ₹0.00 for the period Feb 1 – 6, 2018), and 'Error Reporting' (No sign of any errors). There's also a 'CUSTOMIZE' button at the top right.

Step 3-Creating a new virtual machine instance in compute Engine

To create a VM instance, select one of the options:

- New VM Instance** Create a single VM instance from scratch
- New VM instance from template** Create a single VM instance from an existing template
- Marketplace** Deploy a ready-to-go solution onto a VM instance

Name: instance-1

Region: asia-south1 (Mumbai) **Zone**: asia-south1-c

Machine type: 1 vCPU 3.75 GB memory **Customize**

You have ₹15,657.095216 free trial credits remaining
\$29.61 monthly estimate
That's about \$0.041 hourly
Pay for what you use: No upfront costs and per second billing

Container: Deploy a container image to this VM instance. [Learn more](#)

Boot disk: New 10 GB standard persistent disk
Image: CentOS 7 [Change](#)

Identity and API access

Service account: Compute Engine default service account

Access scopes:

- Allow default access
- Allow full access to all Cloud APIs
- Set access for each API

To create a VM instance, select one of the options:

- New VM Instance** Create a single VM instance from scratch
- New VM instance from template** Create a single VM instance from an existing template
- Marketplace** Deploy a ready-to-go solution onto a VM instance

Identity and API access

Service account: Compute Engine default service account

Access scopes:

- Allow default access
- Allow full access to all Cloud APIs
- Set access for each API

Firewall: Add tags and firewall rules to allow specific network traffic from the Internet

- Allow HTTP traffic
- Allow HTTPS traffic

Management **Security** **Disks** **Networking** **Sole Tenancy**

Description (Optional):

Labels (Optional): [+ Add label](#)

Deletion protection: Enable deletion protection

Step 4- Connecting to cloud Secure shell

sudo -s

yum update -y

yum install -y perl

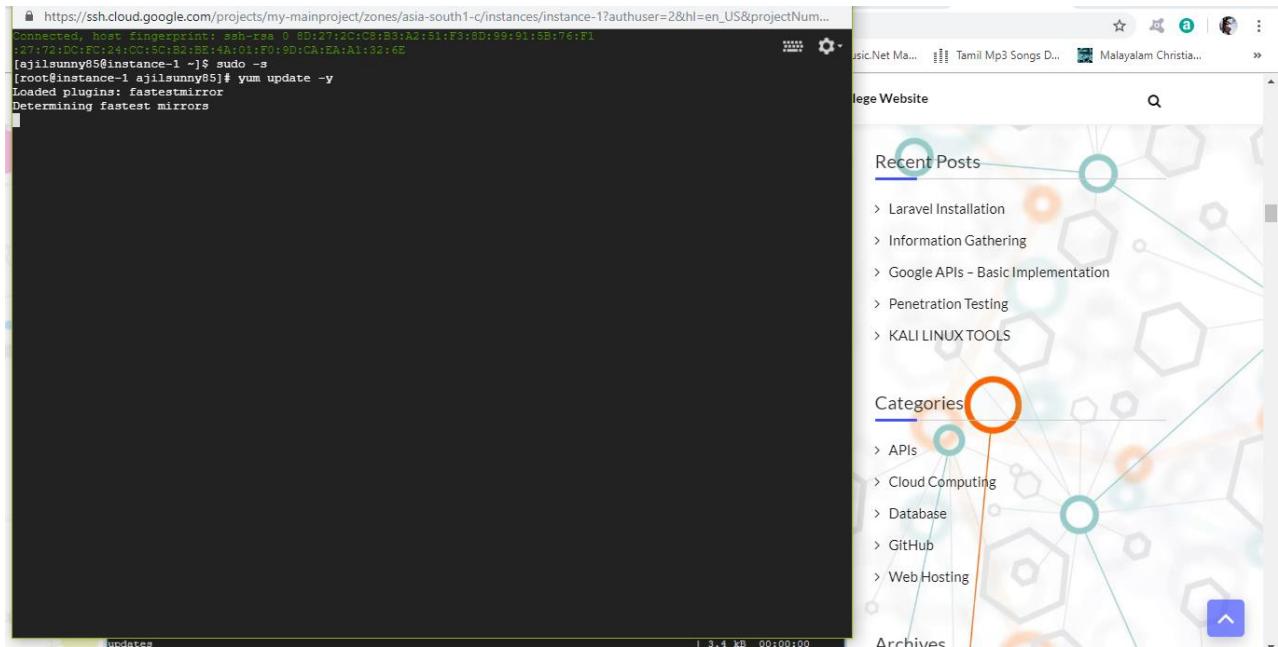
yum install -y wget

The screenshot shows the Google Cloud Platform Compute Engine interface. The left sidebar is collapsed. The main area displays a table of VM instances. One instance, named 'Instance-1', is listed. The table columns include Name, Zone, Recommendation, In use by, Internal IP, External IP, and Connect. The 'Connect' column for 'Instance-1' has a dropdown menu set to 'SSH'. A tooltip is visible over this dropdown, listing options: 'Open in browser window', 'Open in browser window on custom port', 'Open in browser window using provided private SSH key', 'View gcloud command', and 'Use another SSH client'.

Open shell terminal

This screenshot is identical to the one above, but the 'SSH' option in the 'Connect' dropdown is now highlighted. The tooltip is still visible, showing the same five connection options.

Type sudo -s to get admin permission



Type yum update -y for Package updatation

```
root@instance-1:/home/ajilsunny85 - Google Chrome
https://ssh.cloud.google.com/projects/my-mainproject/zones/asia-south1-c/instances/instance-1?authuser=2&hl=en_US&projectNumber=787433356739

Transaction Summary
Upgrade 4 Packages

Total download size: 33 M
Downloading packages:
Delta RPMs disabled because /usr/bin/applydeltarpm not installed.
1/4): 72f6893235e4ad070c383113633f84d8fe5bfabf98e9c65c8c101f0521bcde97-google-compute-engine-oslogin-1.5.3-1.el7.x86_64.rpm | 96 kB 00:00:00
2/4): 9de3dd214072d650526d568fa5fcfa955f49bae212694e5d7-google-compute-engine-2.8.16-1.el7.noarch.rpm | 14 kB 00:00:00
3/4): 100e3c5800ebfffd6be7eaa577ce448f25158aeef2198d887f623ee05bb9ee975-python-google-compute-engine-2.8.16-1.el7.noarch.rpm | 104 kB 00:00:00
4/4): db9aa31a9780a4b3add61d699a3dbe08726cf5b0a938edd2e83c5678540add-google-cloud-sdk-248.0.0-1.el7.noarch.rpm | 32 MB 00:00:02

Total
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Updating : python-google-compute-engine-2.8.16-1.el7.noarch 1/8
  Updating : google-compute-engine-oslogin-1.5.3-1.el7.x86_64 2/8
  Installing SELinux module for OS Login.
  Updating : google-compute-engine-2.8.16-1.el7.noarch 3/8
  Warning: google-accounts-daemon.service changed on disk. Run 'systemctl daemon-reload' to reload units.
  Warning: google-clock-skew-daemon.service changed on disk. Run 'systemctl daemon-reload' to reload units.
  Warning: google-network-daemon.service changed on disk. Run 'systemctl daemon-reload' to reload units.
    Updating : google-cloud-sdk-248.0.0-1.el7.noarch 4/8
    Cleanup : google-compute-engine-2.8.14-1.el7.noarch 5/8
    Cleanup : python-google-compute-engine-2.8.14-1.el7.noarch 6/8
    Cleanup : google-cloud-sdk-246.0.0-1.el7.noarch 7/8
    Cleanup : google-compute-engine-oslogin-1.5.2-1.el7.x86_64 8/8
  Verifying : google-compute-engine-oslogin-1.5.3-1.el7.x86_64 1/8
  Verifying : google-cloud-sdk-248.0.0-1.el7.noarch 2/8
  Verifying : python-google-compute-engine-2.8.16-1.el7.noarch 3/8
  Verifying : google-compute-engine-2.8.16-1.el7.noarch 4/8
  Verifying : google-compute-engine-2.8.14-1.el7.noarch 5/8
  Verifying : google-compute-engine-oslogin-1.5.2-1.el7.x86_64 6/8
  Verifying : python-google-compute-engine-2.8.14-1.el7.noarch 7/8
  Verifying : google-cloud-sdk-246.0.0-1.el7.noarch 8/8

Updated:
  google-cloud-sdk.noarch 0:248.0.0-1.el7
  python-google-compute-engine.noarch 0:2.8.16-1.el7
  google-compute-engine.noarch 0:2.8.16-1.el7
  google-compute-engine-oslogin.x86_64 0:1.5.3-1.el7

Complete!
root@instance-1 ajilsunny85#
```

Installing

Packages Yum

install -y perl

```
root@instance-1:/home/ajilsunny85 - Google Chrome
https://ssh.cloud.google.com/projects/my-mainproject/zones/asia-south1-c/instances/instance-1?authuser=2&hl=en_US&projectNumber=787433356739
(2/4) : 9de3dd21407dd450526d69fadfa37850b578e45fcfa955f49bae212694e5d7-google-compute-engine-2.8.16-1.el7.noarch.rpm | 14 kB 00:00:00
(3/4) : 100e3c5800ebffdb8e7eaa577c448f25158ae2198a887f623ae05bb8e2975-python-google-compute-engine-2.8.16-1.el7.noarch.rpm | 104 kB 00:00:00
(4/4) : db9aa31a9780a4b3add61d699a3db0a838edd2e83c5e6785f04add-google-cloud-sdk-248.0.0-1.el7.noarch.rpm | 32 MB 00:00:02
Total 13 MB/s | 33 MB 00:00:02
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Updating : python-google-compute-engine-2.8.16-1.el7.noarch 1/8
  Updating : google-compute-engine-oslogin-1.5.3-1.el7.x86_64 2/8
  Installing SELinux module for OS Login.
  Updating : google-compute-engine-2.8.16-1.el7.noarch 3/8
Warning: google-accounts-daemon.service changed on disk. Run 'systemctl daemon-reload' to reload units.
Warning: google-clock-skew-daemon.service changed on disk. Run 'systemctl daemon-reload' to reload units.
Warning: google-network-daemon.service changed on disk. Run 'systemctl daemon-reload' to reload units.
  Updating : google-cloud-sdk-248.0.0-1.el7.noarch 4/8
  Cleanup : google-compute-engine-2.8.14-1.el7.noarch 5/8
  Cleanup : python-google-compute-engine-2.8.14-1.el7.noarch 6/8
  Cleanup : google-cloud-sdk-246.0.0-1.el7.noarch 7/8
  Verifying : google-compute-engine-oslogin-1.5.2-1.el7.x86_64 8/8
  Verifying : google-cloud-sdk-248.0.0-1.el7.noarch 1/8
  Verifying : python-google-compute-engine-2.8.14-1.el7.noarch 2/8
  Verifying : google-compute-engine-2.8.16-1.el7.noarch 3/8
  Verifying : google-compute-engine-2.8.14-1.el7.noarch 4/8
  Verifying : google-compute-engine-2.8.16-1.el7.noarch 5/8
  Verifying : google-compute-engine-oslogin-1.5.2-1.el7.x86_64 6/8
  Verifying : python-google-compute-engine-2.8.14-1.el7.noarch 7/8
  Verifying : google-cloud-sdk-246.0.0-1.el7.noarch 8/8
Updated:
  google-cloud-sdk.noarch 0:248.0.0-1.el7           google-compute-engine.noarch 0:2.8.16-1.el7           google-compute-engine-oslogin.x86_64 0:1.5.3-1.el7
  python-google-compute-engine.noarch 0:2.8.16-1.el7
Complete!
[root@instance-1 ajilsunny85]# yum install -y perl
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: mirrors.thzhost.com
 * epel: download.nus.edu.sg
 * extras: tyl.mirror.newmediaexpress.com
 * updates: mirrors.nhanhoa.com
Package perl-5.16.3-294.el7_6.x86_64 already installed and latest version
Nothing to do
[root@instance-1 ajilsunny85]#
```

yum install -y wget

```
https://ssh.cloud.google.com/projects/my-mainproject/zones/asia-south1-c/instances/instance-1?authuser=2&hl=en_US&projectNumber=787433356739
* epel: download.nus.edu.sg
* extras: tyl.mirror.newmediaexpress.com
* updates: mirrors.nhanhoa.com
Package perl-5.16.3-294.el7_6.x86_64 already installed and latest version
Nothing to do
[root@instance-1 ajilsunny85]# yum install -y wget
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: mirrors.thzhost.com
 * epel: download.nus.edu.sg
 * extras: tyl.mirror.newmediaexpress.com
 * updates: mirrors.nhanhoa.com
Resolving Dependencies
--> Running transaction check
--> Package wget.x86_64 0:1.14-18.el7_6.1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

Transaction Summary
Install  1 Package

  Package          Arch      Version       Repository      Size
Install:  wget        x86_64    1.14-18.el7_6.1   updates       547 k

Transaction Summary
Install  1 Package

Total download size: 547 k
Installed size: 2.0 M
Downloading packages:
wget-1.14-18.el7_6.1.x86_64.rpm | 547 kB 00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : wget-1.14-18.el7_6.1.x86_64 1/1
  Verifying  : wget-1.14-18.el7_6.1.x86_64 1/1

Installed:
  wget.x86_64 0:1.14-18.el7_6.1

Complete!
[root@instance-1 ajilsunny85]#
```

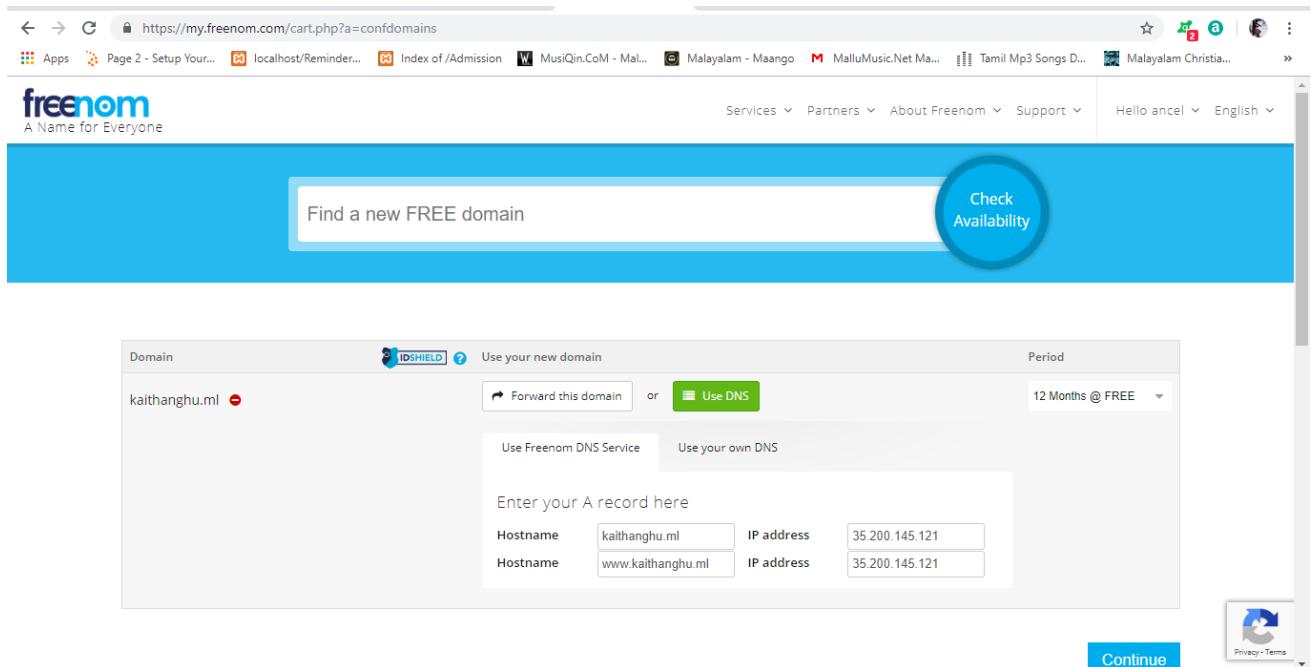
Step 5- Purchase Domain From freenom

The screenshot shows the freenom website at <https://my.freenom.com/cart.php?a=confdomains>. The main heading is "Find a new FREE domain". A prominent blue button on the right says "Check Availability". Below the search bar, there's a form with fields for "Domain" (containing "kaithanghu.ml"), "IDSHIELD" (with a question mark icon), "Use your new domain", and "Period" (set to "3 Months @ FREE"). Buttons for "Forward this domain" and "Use DNS" are also present. A "Continue" button is located at the bottom right. The top navigation bar includes links for "Services", "Partners", "About Freenom", "Support", "Hello ancel", and "English".

Copying External IP from VM instance

The screenshot shows the Google Cloud Platform Compute Engine VM instances page at <https://console.cloud.google.com/compute/instances?project=my-mainproject&authuser=2&instancesize=50>. The left sidebar shows options like "Compute Engine", "VM instances", "Instance groups", "Instance templates", etc. The main area displays a table of VM instances. One row is selected, showing details for "instance-1" in the "asia-south1-c" zone. The "Internal IP" is listed as "staticinternalip (10.160.0.2) (nic0)". The "External IP" is listed as "35.200.145.121". A "Connect" button is also visible.

Step 6-Enter host name and IP address in freenom



Step 7>Create cloud DNS Zone

Create a zone by providing the zone name.

A DNS zone is a container of DNS records for the same DNS name suffix. In Cloud DNS, all records in a managed zone are hosted on the same set of Google-operated authoritative name servers. [Learn more](#)

If you don't have a domain yet, purchase one through [Google Domains](#).

Zone type Public

Zone name project

DNS name kaithanghu.ml

DNSSEC On

Description (Optional)

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

Create **Cancel**

Equivalent REST or command line

Step 8: In the Newly Created zone, add two record sets A and CNAME. Provide the External IP address our virtual machine in the IPV4 address field. Also provide the registered domain names.

project

DNS name: kaithanghu.ml. Type: Public

DNS peering: Disabled

Record sets

Add record set Delete record sets

Filter record sets

DNS name	Type	TTL (seconds)	Data
kaithanghu.ml.	NS	21600	ns-cloud-c1.google domains.com. ns-cloud-c2.google domains.com. ns-cloud-c3.google domains.com. ns-cloud-c4.google domains.com.
kaithanghu.ml.	SOA	21600	ns-cloud-c1.google domains.com. cloud-dns-hostmaster.google.com. 1 21600 3600 259200 300

Equivalent REST

We Get our Domain from freenom - kaithanghu.ml

The screenshot shows a web browser window for freenom.com. The URL in the address bar is https://my.freenom.com/cart.php?a=view. The page title is "Review & Checkout". The main content is a table showing the following items:

Description	Price
Domain Registration - kaithanghu.ml	\$0.00USD
Subtotal:	\$0.00USD
Total Due Today:	\$0.00USD

Below the table, there is a section titled "Your Details" with a checkbox labeled "Lock profile. Updates to your details will affect your profile information." A "First Name" field contains "ancel". To the right of the form is a "Privacy + Terms" link.

The screenshot shows a web browser window for freenom.com. The URL in the address bar is https://my.freenom.com/cart.php?a=complete. The page title is "Order Confirmation". The main content includes a message: "Thank you for your order. You will receive a confirmation email shortly." Below this is a box containing "Your Order Number is: 9029480669". Further down, there is a message: "If you have any questions about your order, please open a support ticket from your client area and quote your order number." At the bottom, there is a blue button with the text "Click here to go to your Client Area".

Step 9-Add Record set in that DNS Zone. Create a record set as Type A and CNAME

The screenshot shows the 'Create record set' interface for a Type A record. The 'DNS Name' field contains '.kaithanghu.ml.'. The 'Resource Record Type' is set to 'A', with 'TTL' at 5 and 'TTL Unit' at 'minutes'. The 'IPv4 Address' field contains '35.200.145.121'. There is a 'Create' button at the bottom.

The screenshot shows the 'Create record set' interface for a CNAME record. The 'DNS Name' field contains 'www.kaithanghu.ml.'. The 'Resource Record Type' is set to 'CNAME', with 'TTL' at 5 and 'TTL Unit' at 'minutes'. The 'Canonical name' field contains 'kaithanghu.ml'. There is a 'Create' button at the bottom.

The screenshot shows the Google Cloud Platform Network services - Cloud DNS interface. On the left sidebar, 'Cloud DNS' is selected under 'Network services'. The main pane displays 'Zone details' for 'kaithanghu.ml.' with a DNS name of 'kaithanghu.ml.' and type 'Public'. The 'DNS peering' status is 'Disabled'. Under 'Record sets', there are four entries:

- A record for 'kaithanghu.ml.' with type 'A' and TTL 300, pointing to IP 35.200.145.121.
- An NS record for 'kaithanghu.ml.' with TTL 21600, pointing to ns-cloud-1.google domains, ns-cloud-2.google domains, ns-cloud-3.google domains, and ns-cloud-4.google domains.
- An SOA record for 'kaithanghu.ml.' with TTL 21600, pointing to ns-cloud-1.google domains, cloud-dns-hostmaster.google.com, 1 21600 3600 259200 300.
- A CNAME record for 'www.kaithanghu.ml.' with TTL 300, pointing to 'kaithanghu.ml.'

At the bottom, there's an 'Equivalent REST' section.

Step 10- Installation of WHM and cPanel

```

root@instance-1:/home - Google Chrome
https://ssh.cloud.google.com/projects/my-mainproject/zones/asia-south1-c/instances/instance-1?authuser=2&hl=en_US&projectNumber=787433356739
2019-05-29 05:04:01 819 [DEBUG]: 2019-05-29T05:04:01.631064Z 0 [Note] /usr/sbin/mysqld: ready for connections.
2019-05-29 05:04:01 819 [DEBUG]:
2019-05-29 05:04:01 819 [DEBUG]: mysql started successfully.
2019-05-29 05:04:01 819 [DEBUG]: Checking the log file "/var/log/mysqld.log" for the initial password
2019-05-29 05:04:01 819 [DEBUG]: Populating .my.cnf with the initial password.
2019-05-29 05:04:01 1572 [INFO]: Waiting for background processes to complete.
2019-05-29 05:04:01 819 [DEBUG]: Setting the root password to a strong password.
2019-05-29 05:04:01 819 [DEBUG]: Populating .my.cnf with the new strong password.
2019-05-29 05:04:01 819 [DEBUG]: Running /usr/local/cpanel/scripts/mysqlconnectioncheck.
2019-05-29 05:04:02 819 [DEBUG]: Checking PHP linkage.
2019-05-29 05:04:02 819 [DEBUG]: Running /usr/local/cpanel/scripts/securesmysql.
2019-05-29 05:04:02 1572 [INFO]: Waiting for background processes to complete.
2019-05-29 05:04:02 819 [DEBUG]: Working around common mysql problems.
2019-05-29 05:04:02 819 [DEBUG]: Disabled validate_password Plugin
2019-05-29 05:04:02 819 [DEBUG]: - system [END]
2019-05-29 05:04:02 819 [INFO]: Completed execution of "/usr/local/cpanel/bin/build_mysql_conf --no-upgrade --no-selinux" in 11.823269367218 second(s)
2019-05-29 05:04:02 434 [INFO]: Enabling one-time shutdown hook
2019-05-29 05:04:02 435 [DEBUG]: - system [BEGIN]: /usr/bin/systemctl start cpccleartaskqueue
2019-05-29 05:04:02 435 [DEBUG]: - system [END]
2019-05-29 05:04:02 435 [INFO]: Completed execution of "/usr/bin/systemctl start cpccleartaskqueue" in 0.104400396347046 second(s)
2019-05-29 05:04:02 438 [INFO]: Flushing the task queue
2019-05-29 05:04:02 447 [INFO]: cPanel install finished in 7 minutes and 38 seconds!
2019-05-29 05:04:02 1392 [INFO]: Congratulations! Your installation of cPanel & WHM 11.80 is now complete. The next step is to configure your server.
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: Before you configure your server, ensure that your firewall allows access on port 2087.
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: After ensuring that your firewall allows access on port 2087, you can configure your server.
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: 1. Open your preferred browser
2019-05-29 05:04:02 1392 [INFO]: 2. Navigate to the following url using the address bar and enter this one-time autologin url:
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: https://35.200.145.121:2087/cpsess4339345659/login/?session=root%3aWlF0Dj3wTZ2eVXd%3acreate_user_session%2cfca0a45b61fef8ffe954223f9e26ea7a
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: After the login url expires you generate a new one using the 'whmlogin' command or manually login at:
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: https://35.200.145.121:2087
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: Visit https://go.cpanel.net/whminit for more information about first-time configuration of your server.
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: Visit http://support.cpanel.net or https://go.cpanel.net/allfaq for additional support
2019-05-29 05:04:02 1392 [INFO]:
2019-05-29 05:04:02 1392 [INFO]: Thank you for installing cPanel & WHM 11.80!
Removing /root/installer.lock.
[root@instance-1 home]#

```

Step 11-Enable and restart services

Disable the Network Manager service

To disable the Network Manager service, perform the following steps:

Important:
Perform these steps from the server's console in order to prevent any interruption to network connectivity.

1. Disable Network Manager with the following commands:
 - > Disable NetworkManager on CentOS 6, CloudLinux 6, Red Hat Enterprise Linux 6 (RHEL), or Amazon Linux...
 - > Disable NetworkManager on CentOS 7, CloudLinux 7, or RHEL 7...

```
1 systemctl stop NetworkManager.service
2 systemctl disable NetworkManager.service
```
2. Change to the /etc/sysconfig/network-scripts directory.
3. Open each configuration file with your preferred text editor and set the following keys' values:


```
1 NM_CONTROLLED=no
2 ONBOOT=yes
```
4. Run the following commands to restart the network:
 - > Restart the network on CentOS 6, CloudLinux 6, RHEL 6, or Amazon Linux...
 - > Restart the network on CentOS 7, CloudLinux 7, or RHEL 7...

Important:
Perform these steps from the server's console in order to prevent any interruption to network connectivity.

1. Disable Network Manager with the following commands:
 - > Disable NetworkManager on CentOS 6, CloudLinux 6, Red Hat Enterprise Linux 6 (RHEL), or Amazon Linux...
 - > Disable NetworkManager on CentOS 7, CloudLinux 7, or RHEL 7...

```
1 systemctl stop NetworkManager.service
2 systemctl disable NetworkManager.service
```
2. Change to the /etc/sysconfig/network-scripts directory.
3. Open each configuration file with your preferred text editor and set the following keys' values:


```
1 NM_CONTROLLED=no
2 ONBOOT=yes
```
4. Run the following commands to restart the network:
 - > Restart the network on CentOS 6, CloudLinux 6, RHEL 6, or Amazon Linux...
 - > Restart the network on CentOS 7, CloudLinux 7, or RHEL 7...

```
1 systemctl enable network.service
2 systemctl start network.service
```

Additional documentation

Suggested documentation | For cPanel users | For WHM users | For developers

Step 12-Config: Firewall Rules-tcp: 2087 WHM

The screenshot shows the Google Cloud Platform Firewall rules list. On the left, there's a sidebar with options like VPC networks, External IP addresses, and Firewall rules. The Firewall rules section is selected. In the main area, there's a table of existing 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
whm	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:2087,2083	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

Creating firewall

The screenshot shows the 'Create a firewall rule' form in the Google Cloud Platform. The sidebar on the left is identical to the previous screenshot. The main form has the following fields filled out:

- Targets:** Specified target tags
- Source filter:** IP ranges
- Source IP ranges:** for example, 0.0.0.0/0, 192.168.2.0/24
- Protocols and ports:**
 - Specified protocols and ports
 - tcp: 2087,2083
 - udp: all
 - Other protocols: protocols, comma separated, e.g. ah, sctp

At the bottom, there are 'Create' and 'Cancel' buttons.

The screenshot shows the Google Cloud Platform interface for managing VPC networks. On the left, a sidebar lists options like VPC networks, External IP addresses, Firewall rules, Routes, VPC network peering, Shared VPC, and Serverless VPC access. The 'Firewall rules' option is selected. The main pane displays a table of existing 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 13: Login to WHM using Instance Ext.IP:2087

The screenshot shows the Web Host Manager (WHM) login interface. The URL in the browser is https://35.200.145.121:2087. The page features a large 'WHM®' logo at the top. Below it is a form with two input fields: 'Username' and 'Password'. Both fields have placeholder text: 'Enter your username.' and 'Enter your account password.' respectively. A blue 'Log in' button is positioned below the password field. At the bottom of the page, there is a horizontal menu bar with language links: English, العربية, Български, čeština, dansk, Deutsch, Ελληνικά, español, and ...

WHM Account Function select

The screenshot shows the WHM interface with a trial license notice. The left sidebar has 'add' selected under 'Server Configuration'. The main content area displays a 'Trial License' message and 'Important Next Steps' section with links to 'Provide Contact Information', 'Customize Nameservers', and 'Customize Ethernet Device'.

Once you access the WHM panel, you can Create a new cPanel Account

The screenshot shows the WHM interface with the 'Manage Your Accounts' section selected. It includes links for 'Create a New Account', 'List Accounts', 'Add a Package', 'Reseller Center', and 'Backup Restoration'.

cPanel Account creation with your registered Domain name

Domain Information

- Domain:
- Username:
- Password:
- Re-type Password:
- Strength (Why?): Very Strong (83/100) [Password Generator](#)
- Email:

Package

Quotas are currently disabled. Quotas defined in packages will not function until you enable them.

Nameservers: ns1.kaithanghu.ml
ns2.kaithanghu.ml

Mail Routing Settings

- Automatically Detect Configuration (recommended) [more »](#)
- Local Mail Exchanger [more »](#)
- Backup Mail Exchanger [more »](#)
- Remote Mail Exchanger [more »](#)

Create

The screenshot shows the WHM interface for creating a new account. A sidebar on the left lists various account-related functions. The main panel displays a 'Trial License' message, instructions for purchasing a license, and a 'Create a New Account' section. The status bar at the bottom indicates 'Account Creation Status: ok (Account Creation Ok)'.

Step 14-Set Firewall Rules tcp:2083 cPanel

The screenshot shows the Google Cloud Platform VPC network firewall rule configuration. The 'Firewall rules' tab is selected. A new rule is being created, targeting 'Specified target tags'. The 'Source filter' is set to 'IP ranges' with 'tcp' protocol and port range '2087,2083'. The 'Create' button is visible at the bottom.

Step 15-Select File Manager Upload Project In Public HTML

The screenshot shows the cPanel control panel. At the top, there's a banner stating "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, the "FILES" section contains several icons: File Manager, Images, Directory Privacy, Disk Usage, Web Disk, FTP Accounts, FTP Connections, Backup, Backup Wizard, Git™ Version Control, and File and Directory Restoration. To the right, there's a "GENERAL INFORMATION" sidebar with details like Current User (kaithanghu), Primary Domain (kaithanghu.ml), Shared IP Address (35.200.145.121), Home Directory (/home/kaithanghu), Last Login IP Address (42.109.144.156), Theme (paper_lantern), and Server Information.

Step 16: Open Public_html folder to store your project files.

The screenshot shows the File Manager interface. The left sidebar shows a tree view of the directory structure: public_html, which contains .cpanel, .cphorde, .htpasswd, .spamassassin, .trash, app, bootstrap, config, database, etc, logs, mail, public, and public_ftp. The main area displays a list of files and folders within the public_html folder. The table includes columns for Name, Size, Last Modified, Type, and Permissions. Key entries include homenurse (57 bytes, httpd/unix-directory, 0755), images (4 KB, httpd/unix-directory, 0755), js (4 KB, httpd/unix-directory, 0755), kaihanghu (6 bytes, httpd/unix-directory, 0755), medicalshop (49 bytes, httpd/unix-directory, 0755), storage (38 bytes, httpd/unix-directory, 0755), user (57 bytes, httpd/unix-directory, 0755), .htaccess (593 bytes, text/x-generic, 0644), BingSiteAuth.xml (85 bytes, text/x-generic, 0644), favicon.ico (0 bytes, image/x-generic, 0644), index.php (1.78 KB, application/x-httpd-php, 0644), kaihanghu.zip (42.9 MB, package/x-generic, 0644), and robots.txt (24 bytes, text/plain, 0644).

Step 17: Connect Database go to mysql database

The screenshot shows the cPanel interface for a user named 'kaithanghu'. The top navigation bar includes links for 'Page 2 - Setup Your...', 'localhost/Reminder...', 'Index of /Admission', 'MusiQin.CoM - Mal...', 'Malayalam - Maango', 'MalluMusic.Net Ma...', 'Tamil Mp3 Songs D...', 'Malayalam Christia...', and a 'Logout' button. A yellow banner at the top left states '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 contains icons for File Manager, Images, Directory Privacy, Disk Usage, Web Disk, FTP Accounts, FTP Connections, Backup, Backup Wizard, Git™ Version Control, and File and Directory Restoration. The 'DATABASES' section contains icons for phpMyAdmin, MySQL® Databases, MySQL® Database Wizard, and Remote MySQL. On the right side, there is a 'GENERAL INFORMATION' panel displaying details about the current user, primary domain, shared IP address, home directory, last login IP address, theme, and server information.

Step 18: Create New Database

The screenshot shows the 'MySQL® Databases' page within the cPanel interface. The top navigation bar and license banner are identical to the previous screenshot. The main content area displays the heading 'MySQL® Databases' with a blue circular icon. Below it, a green success message box contains the text 'Added the database "kaithang_kaithanghu".' At the bottom of the page, there is a 'Go Back' link and the cPanel logo with the text '80.0.9'. Navigation links for 'Home', 'Trademarks', 'Privacy Policy', and 'Documentation' are located at the bottom right.

Step 19 :Create New User and Password

MySQL Users

Add New User

Username: kaithang_ancel

Password: *****

Password (Again): *****

Strength: Very Strong (83/100)

Create User

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.

MySQL® Databases

You have successfully created a MySQL user named "kaithang_ancel".

Go Back

cPanel 80.0.9 Home Trademarks Privacy Policy Documentation

Set Connection Page

```

1 APP_NAME=Laravel
2 APP_ENV=local
3 APP_KEY=base64:prYYjCw7RxmVocBxpYBSCzN1WvWt5qEd+uCxgHEMTA=
4 APP_DEBUG=true
5 APP_URL=http://localhost
6
7 LOG_CHANNEL=stack
8
9 DB_CONNECTION=mysql
10 DB_HOST=127.0.0.1
11 DB_PORT=3306
12 DB_DATABASE=ayurcare_ayurcare
13 DB_USERNAME=mariyamariya
14 DB_PASSWORD=mariyamariya1$
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=2525
29 MAIL_USERNAME=mariyamariuel96@gmail.com
30 MAIL_PASSWORD=Mariyai$
31 MAIL_ENCRYPTION=tls
32
33 AWS_ACCESS_KEY_ID=
34 AWS_SECRET_ACCESS_KEY=
35 AWS_DEFAULT_REGION=us-east-1
36 AWS_BUCKET=
37
38 PUSHER_APP_ID=
39 PUSHER_APP_KEY=
40 PUSHER_APP_SECRET=

```

Step 20 : Upload Database File in PhpMyadmin

Import has been successfully finished. 110 queries executed. (ayurcare (6).sql)

Step 18: Successfully Hosted Project

P1.1.3 Web Host Management Tools

P1.1.3.1 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 WHM), which has features that require root access to the server enabled. Resellers cannot have WHM. 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.

P1.1.3.2 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. 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's numerous tools within cPanel to handle a wide variety of tasks. It contains a full help menu that is easy to use.

P1.1.3.3 Plesk Panel

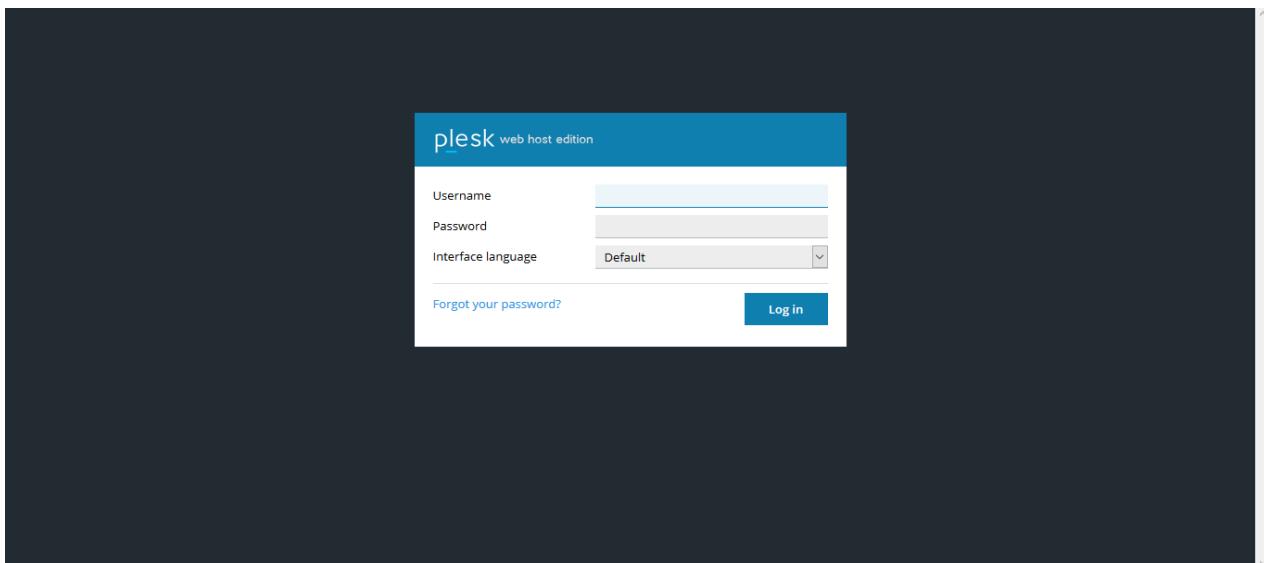
Plesk is the leading WebOps hosting platform to run, automate and grow applications, websites and hosting businesses. Being the only OS-agnostic platform, Plesk is running on more than 380,000 servers, automating 11M+ websites and 19M mailboxes. Available in more than 32 languages across 140 countries, 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.

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)

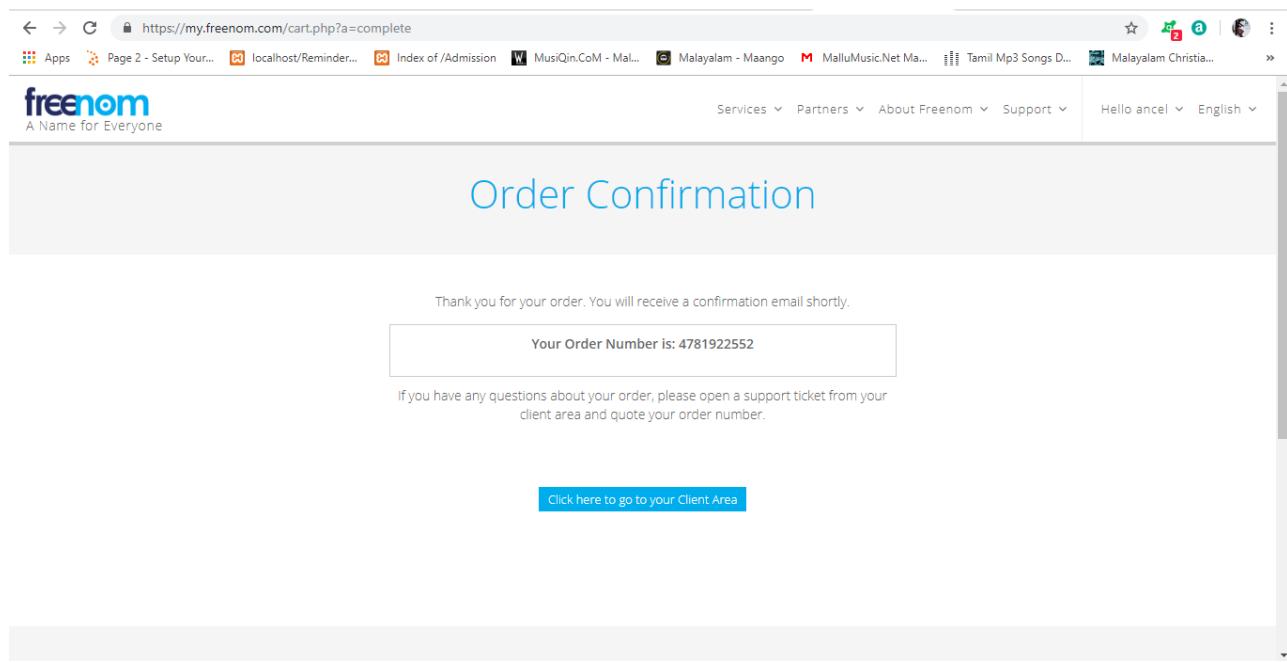


Create a new domain for hosting

The screenshot shows the freenom.com domain search interface. The URL is https://my.freenom.com/cart.php?a=confdomains. The search bar contains 'Find a new FREE domain' and the user input 'kaithanghuu.ga'. To the right of the input is a large blue button labeled 'Check Availability' with a circular highlight around it. Below the search bar, there's a table for selecting domain options:

Domain	IDSHIELD	Use your new domain	Period
kaithanghuu.ga	*	<input type="button" value="Forward this domain"/> or <input type="button" value="Use DNS"/>	3 months

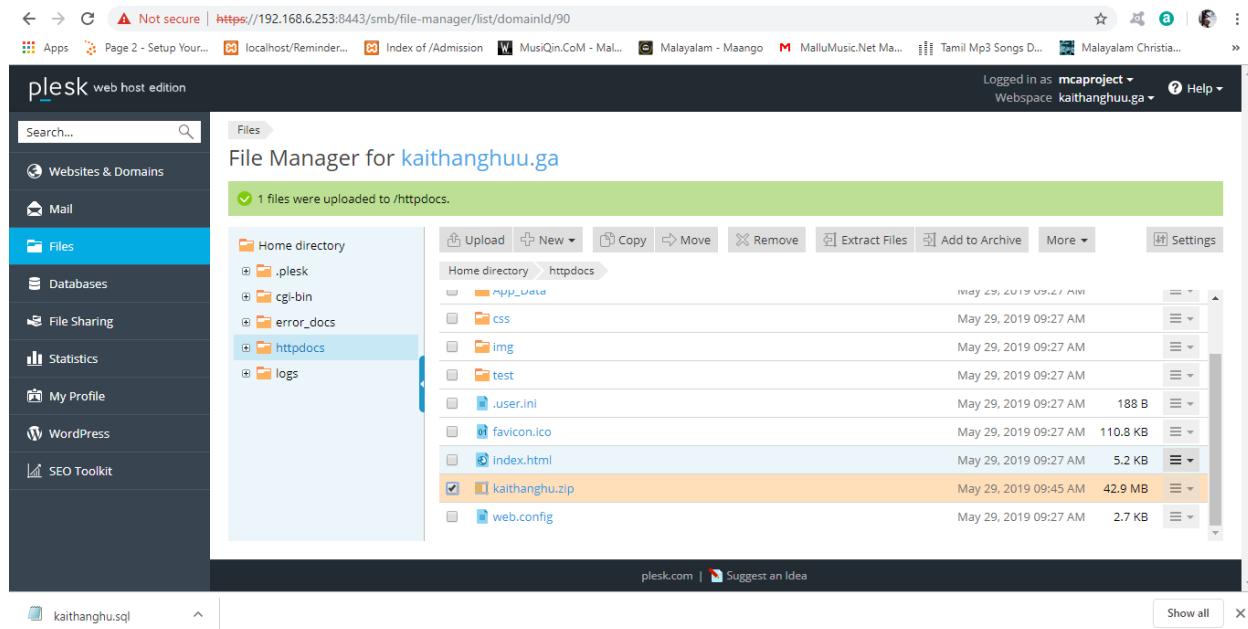
A 'Continue' button is located at the bottom right of the form.



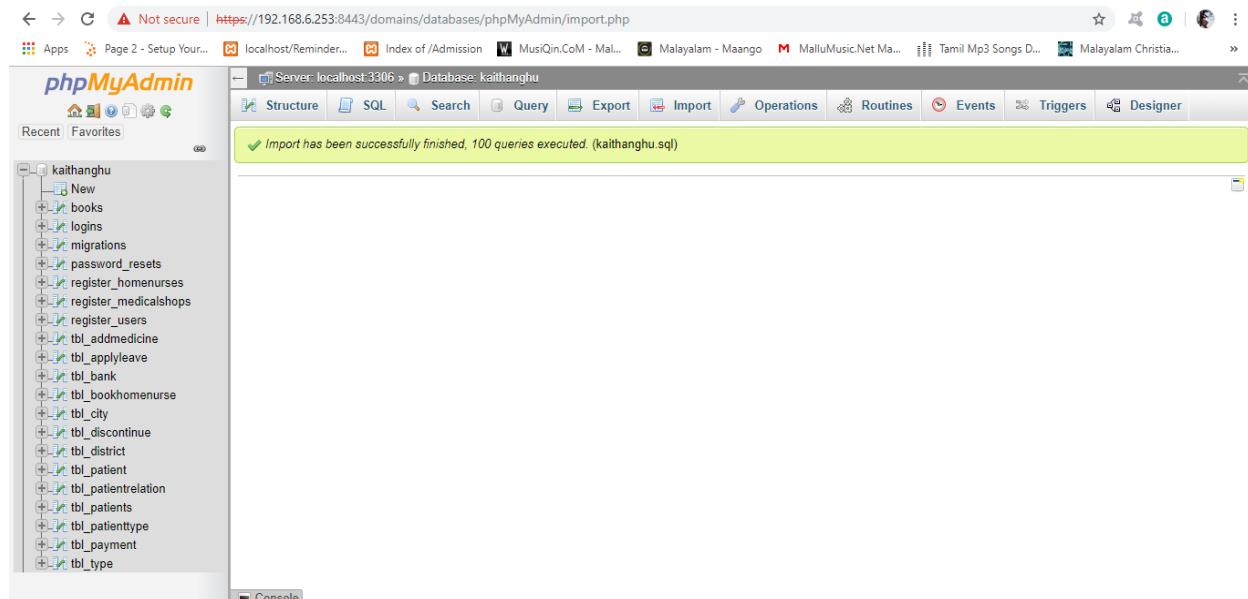
Create web space

The screenshot shows the Plesk web host edition interface with the URL <http://192.168.6.253:8443/smb/web/add-domain>. The page title is "Adding New Domain Name". The form fields include "Domain name" (www. kaithanghuu.ga), "Location of the website's files" (Create a new webspace), "IP address" (192.168.6.253 (shared)), "Username" (kaithanghu), "Password" (Strong), and "Repeat password". A note about SSL/TLS certificates is present at the bottom.

Upload project file



Add Database to the project



P1.2 Amazon Web Services Cloud (AWS)

P1.2.1 Introduction Amazon Web Services Cloud

Amazon Web Services (AWS) is a secure cloud service platform, offering compute power, database storage, content delivery and other functionality to help businesses scale and grow. Amazon Web Services (AWS) is a comprehensive, evolving cloud computing platform provided by Amazon. It provides a mix of infrastructure as a service(IaaS), Platform as a Service (PaaS) and packaged software as a service (SaaS) offerings. Amazon Web Services provides services from dozens of data centers spread across availability zones (AZs) in region across the worlds.

P1.2.2 Amazon Elastic Compute Cloud (Amazon EC2)

EC2 is a virtual computing environment, that enables customers to use Web service interface to launch instances with a variety of operating systems, load them with your custom applications, manage your network's access permissions, and run your image using as many or few systems as you need. It provides scalable computing capacity in the Amazon Web Services (AWS) cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage.

P1.2.3 Amazon Simple Storage Service (S3)

Amazon Simple Storage Service is a scalable, high-speed, low-cost, web-based cloud storage service designed for online backup and archiving of data and application programs. Amazon S3 (Simple Storage Service) is a web service offered by Amazon Web Services.S3 provides scalable object storage for data backup, archival and analytics. An IT professionals stored data and files as S3 buckets to keep them organized. A bucket is a logical unit of storage in Amazon Web Services (AWS) object storage service, Simple Storage Solutions. Buckets are used to store objects, which consist of data and metadata that describes the data.

Step 1-Create a Amazon web service account

The screenshot shows the official AWS website homepage. At the top, there's a navigation bar with links for 'Menu', 'Contact Sales', 'Products', 'Solutions', 'Pricing', 'Getting Started', 'More', 'English', 'My Account', and a prominent yellow 'Create an AWS Account' button.

The main content area features a large banner for the 'AWS INNOVATE ONLINE CONFERENCE 2018 SPECIAL EDITION - MACHINE LEARNING' held on 22 February 2018. Below the banner, there are several promotional cards:

- MACHINE LEARNING ON AWS**: Download the whitepapers and gain insights on using Machine Learning to help personalize customer experiences.
- INTRODUCING AMAZON TRANSCRIBE**: Learn more about the automatic speech recognition service and join the preview.
- AMAZON AURORA**: Get started with Amazon Aurora using these online resources.
- AWS TECHCHAT**: Get on the go updates and insights from AWS experts! Tune into AWS TechChat.

On the right side, there's a callout for 'Get Started with AWS for Free' with a 'Create a Free Account' button, information about 'Amazon S3 5GB storage, 20k Get requests and 2k Put requests', and a link to 'View AWS Free Tier Details'.

Step 2-Creating an AWS account

This screenshot shows the 'Create an AWS account' page. The top navigation bar includes the AWS logo and a language selection dropdown set to 'English'.

The main heading is 'Create an AWS account'. Below it, there's a section titled 'AWS Accounts Include 12 Months of Free Tier Access' with a note about including EC2, S3, and DynamoDB usage. It also mentions visiting aws.amazon.com/free for full offer terms.

The central part of the page contains a form with the following fields:

- Email address (with validation message: *Email is a required field)
- Password
- Confirm password
- AWS account name (with validation message: *AWS account name is required)

At the bottom of the form is a yellow 'Continue' button. Below the form, there's a link to 'Sign in to an existing AWS account' and small fine print at the very bottom.

Step 3-Selecting basic plan

Select a Support Plan

AWS offers a selection of support plans to meet your needs. Choose the support plan that best aligns with your AWS usage. [Learn more](#)

Basic Plan	Developer Plan	Business Plan
Free	From \$29/month	From \$100/month
<ul style="list-style-type: none"> Included with all accounts 24/7 self-service access to forums and resources Best practice checks to help improve security and performance Access to health status and notifications 	<ul style="list-style-type: none"> For early adoption, testing and development Email access to AWS Support during business hours 1 primary contact can open an unlimited number of support cases 12-hour response time for nonproduction systems 	<ul style="list-style-type: none"> For production workloads & business-critical dependencies 24/7 chat, phone, and email access to AWS Support Unlimited contacts can open an unlimited number of support cases 1-hour response time for production systems

Step 4-Log on to the AWS account

Secure | <https://aws.amazon.com/aispl/registration-confirmation/>

Menu **aws** Contact Sales Products Solutions Pricing Getting Started More English My Account Complete Sign Up

My role is: Student

I am interested in: Websites and Web Apps

Submit

Try AWS with a 10-Minute Tutorial

Launch a Linux Virtual Machine Store Your Files in the Cloud Launch a WordPress Website Launch a Web Application

[View all tutorials >>](#)



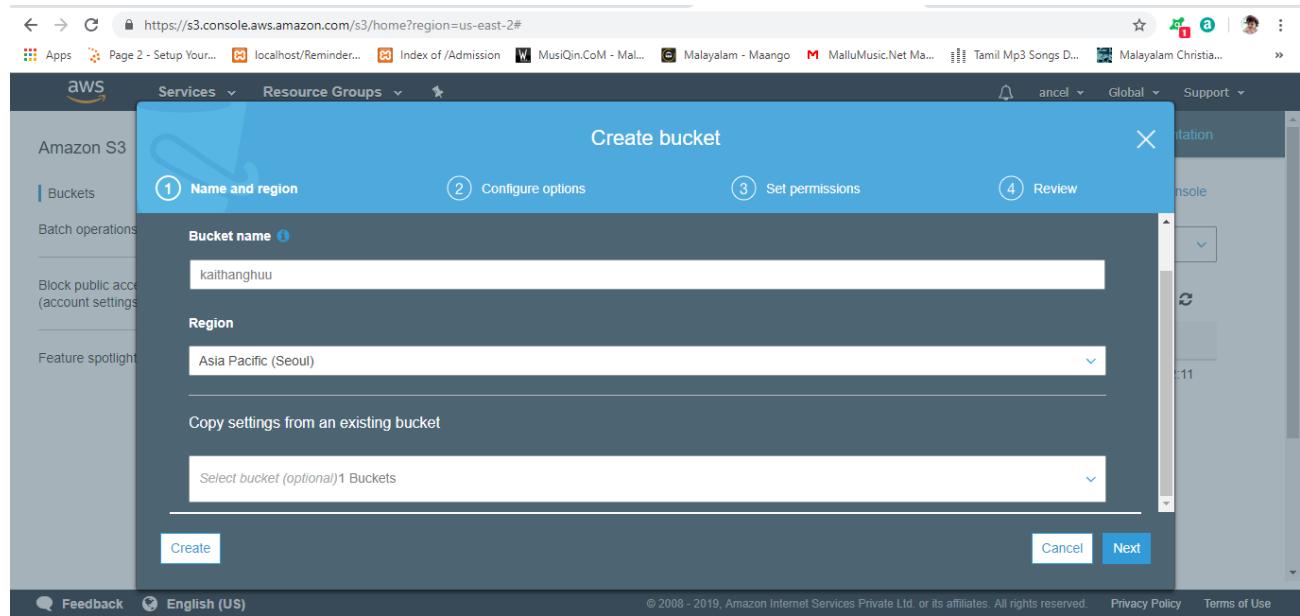
Step 5-Selecting S3 from storage

The screenshot shows the AWS Services console with the 'Storage' category selected. The left sidebar lists 'History', 'Console Home', 'S3', 'EC2', and 'Billing'. The main area displays various AWS services under different categories: Compute (EC2, Lightsail, ECR, ECS, EKS, Lambda, Batch, Elastic Beanstalk, Serverless Application Repository), Robotics (AWS RoboMaker), Blockchain (Amazon Managed Blockchain), Analytics (Athena, EMR, CloudSearch, Elasticsearch Service, Kinesis, QuickSight), Business Applications (Alexa for Business, Amazon Chime, WorkMail), End User Computing (WorkSpaces, AppStream 2.0, WorkDocs, WorkLink), Storage (EFS, FSx), Management & Governance (AWS Organizations, CloudWatch, AWS Auto Scaling), Security, Identity, & Compliance (IAM, Resource Access Manager), and Internet Of Things (IoT Core, Amazon FreeRTOS). A search bar at the top says 'Find a service by name or feature (example, EC2, S3 or VM, storage.)' and a 'Group A-Z' button is visible.

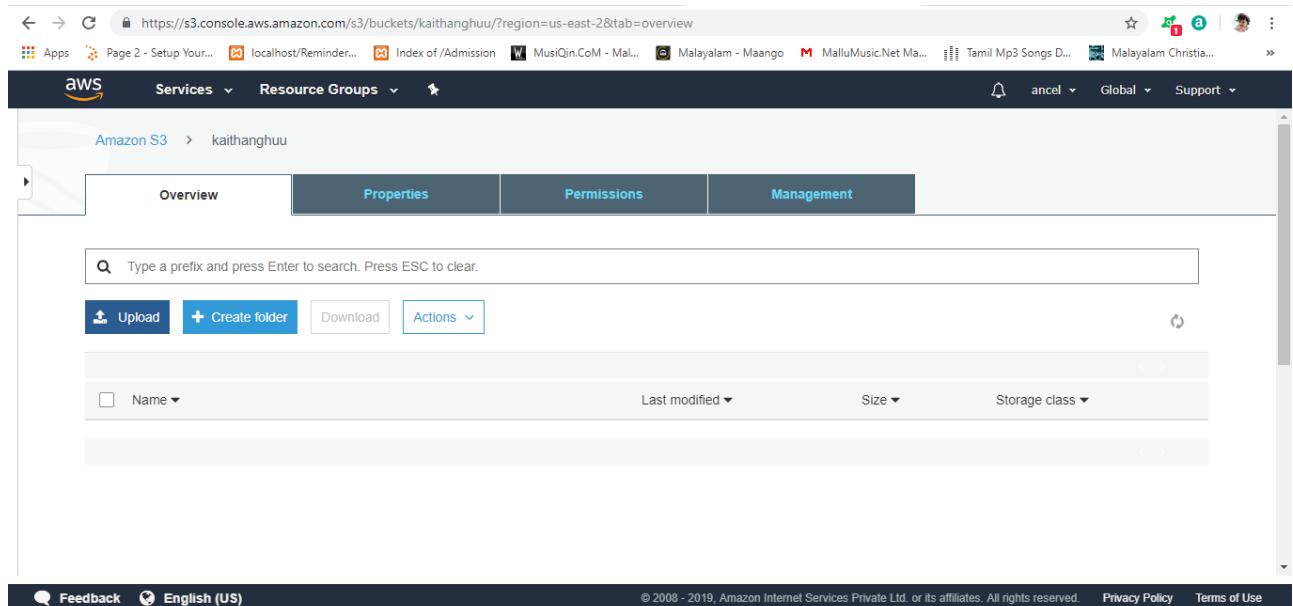
Step 6-Creating a bucket

The screenshot shows the AWS S3 console. The left sidebar has 'Buckets' selected. The main area displays 'S3 buckets' with a search bar and a 'Create bucket' button. It shows one bucket named 'kaithanghu' with the following details: Bucket name - kaithanghu, Access - Objects can be public, Region - Asia Pacific (Mumbai), Date created - May 2, 2019 2:52:11 PM GMT+0530. A banner at the top says 'Prevent S3 objects from being deleted for a predefined retention period with S3 Object Lock.' with a 'Learn more' link. The bottom of the page includes links for 'Feedback', 'English (US)', 'Privacy Policy', and 'Terms of Use'.

Step 7- Provide Bucket name



Step 8: Upload files in Bucket



Step 9: Our Bucket has been created

The screenshot shows the AWS S3 console interface. At the top, there's a navigation bar with links like 'AWS', 'Services', 'Resource Groups', and various browser tabs for different websites. Below the navigation bar, the main title is 'Amazon S3 > kaithanghuu'. A tab bar at the top of the content area includes 'Overview' (which is selected), 'Properties', 'Permissions', and 'Management'. A search bar below the tab bar contains the placeholder text 'Type a prefix and press Enter to search. Press ESC to clear.' Underneath the search bar are several buttons: 'Upload', '+ Create folder', 'Download', and 'Actions'. To the right of these buttons, it says 'Asia Pacific (Seoul)' with a refresh icon. Below this, a table lists the file 'IMG-20180115-WA0001.jpg'. The table columns are 'Name', 'Last modified', 'Size', and 'Storage class'. The file details are: Name - IMG-20180115-WA0001.jpg, Last modified - Jun 1, 2019 6:22:18 PM GMT+0530, Size - 57.2 KB, Storage class - Standard. There are also 'Viewing 1 to 1' and 'Viewing 1 to 1' buttons. At the bottom of the page, there are sections for 'Operations' (0 In progress, 1 Success, 0 Error) and footer links for 'Feedback', 'English (US)', 'Privacy Policy', and 'Terms of Use'.

Step 10: We have to set the permissions. Otherwise it will not be publicly available.

The screenshot shows the AWS S3 object details for 'IMG-20180115-WA0001.jpg'. At the top, there's a navigation bar with links like 'AWS', 'Services', 'Resource Groups', and various browser tabs for different websites. Below the navigation bar, the main title is 'Object Details'. A row of buttons includes 'Open', 'Download', 'Download as', 'Make public' (which is highlighted in blue), and 'Copy path'. Below these buttons, the object details are listed: Owner (429139ddad96ec6cd0b3bd75e70ca94a40d3d751944061dbf069270d7a9e9a9d), Last modified (Jun 1, 2019 6:22:18 PM GMT+0530), Etag (4868bf049bcb4b88caa1aff669853cb0), Storage class (Standard), Server-side encryption (None), Size (57.2 KB), Key (IMG-20180115-WA0001.jpg), and Object URL (https://kaithanghuu.s3.ap-northeast-2.amazonaws.com/IMG-20180115-WA0001.jpg). At the bottom of the page, there are footer links for 'Feedback', 'English (US)', 'Privacy Policy', and 'Terms of Use'.

P1.2.4 AWS DB Products

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.

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.

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.

P1.2.5 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.

P1.3 Microsoft Azure Cloud

P1.3.1 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.

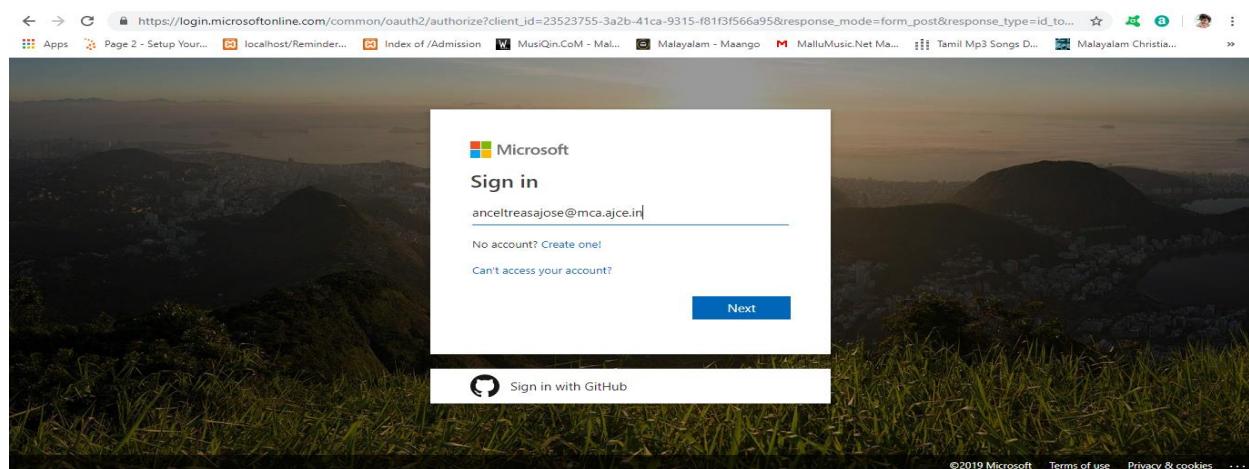
Windows Azure is designed to make IT management easier. The main purpose of developing Windows Azure was to minimize the overhead and personnel expenses associated with the creation, distribution, and upgrade of the Web applications. The Windows Azure platform is considered a platform as a service, which is an imperative component of a cloud computing platform.

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 – Login Microsoft Azure



Step 2 - Go to Microsoft Azure and sign into Microsoft Azure for Student starter

All Services Tools Training Operating Systems

Services	Training	Tools
Microsoft Azure for Students Starter Free cloud services Develop in the cloud at no cost with Azure App Services, Notification Hubs, SQL database, and more. Get Azure	Microsoft Virtual Academy Free online training A large collection of cross-platform learning delivered by Microsoft people and partners to help you build your technical skills and advance your career. Go to Microsoft Virtual Academy	Parallels Desktop for Mac Pro Edition Free 3-month trial Powerful virtualization solution for running Windows and Mac apps side-by-side, without rebooting. Download Parallels
Tools	Training	Tools
PHP Tools for Visual Studio Plug-in for Visual Studio Provides smart code completion, quick navigation, syntax error checking, debugging support, an integrated PHP editor, and much more.	Pluralsight Free developer training Rich collection of online training courses delivered by world-renowned industry developers	SQL Server 2017 Developer Edition SQL database solution Comprehensive datacenter capabilities for mission-critical database, business intelligence, and advanced analytics workloads

Secure | https://azure.microsoft.com/en-us/?v=18.01

Microsoft Azure

Why Azure Solutions Products Documentation Pricing Training Marketplace Partners Support Blog More FREE ACCOUNT >

Your vision. Your cloud.

Turn your ideas into solutions faster using a trusted cloud that is designed for you.
Azure. Cloud for all.

[Start free >](#)

The screenshot shows the Microsoft Azure homepage with a dark theme. At the top, there's a navigation bar with links for Sales, My Account, Portal, and a search bar. Below the navigation is a large banner with the text "Your vision. Your cloud." and a "Start free" button. To the right of the banner is a preview of the Azure dashboard, which displays various performance metrics and charts. At the bottom of the page, there are four sections: Productive, Hybrid, Intelligent, and Trusted, each with a brief description and a link to the pricing page.

Productive

Azure has more than 100 services with great end-to-end tools to make you successful.

<https://azure.microsoft.com/en-us/pricing/>

Hybrid

Develop and deploy where you want, with the only consistent hybrid cloud on the market. Extend Azure on-premises

e Stack.

Intelligent

Create intelligent apps using powerful data and artificial intelligence services.

Trusted

Join startups, governments, and 90% of Fortune 500 businesses who run on the Microsoft Cloud today.

Step 3 - Creating Resource Group of Azure

Basics **Tags** **Review + Create**

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

PROJECT DETAILS

- Subscription: Azure for Students
- Resource group: kaithanghu

RESOURCE DETAILS

- Region: (US) Central US

Create resource group

Step 4 -Creating Azure Web App(Docker Image)

Web App

Looking for the classic Web App create experience? [→](#)

INSTANCE DETAILS

- Name: homunurse
- Publish: Docker Image
- 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](#)

Plan: ASP-kaithanghu-9475 (P1v2)

Review and create **Next: Docker >**

Step 5 - Deployment Center of Kaithanghu WebApp

The screenshot shows the Microsoft Azure portal interface. On the left, the navigation bar includes 'Create a resource', 'Home', 'Dashboard', 'All services', and a 'FAVORITES' section with links to 'All resources', 'Resource groups', 'App Services', 'Function App', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', 'Virtual networks', 'Azure Active Directory', and 'Monitor'. The main content area is titled 'homenurse - Deployment Center' and shows a flow diagram with four numbered circles: 1. Source (Azure Repos), 2. Repository (GitHub), 3. Application (Deployment Center), and 4. Resources. Below the flow diagram, there is a section titled 'Select the code location' with two options: 'Azure Repos' (Unlimited free private repos) and 'GitHub' (Home to the world's largest community of developers). At the bottom right of the main area, there are 'Previous' and 'Next' buttons.

Step 6 - Create a new repository and write code for docker file in GitHub

The screenshot shows a GitHub repository page for 'anceltj/kaithanghuazuredocker'. The repository has 0 stars, 0 forks, and 0 issues. The 'Code' tab is selected, showing a single file named 'Dockerfile'. The file content is as follows:

```

Branch: master / kaithanghuazuredocker / Dockerfile
anceltj Create Dockerfile
9ae2c41 4 days ago
1 contributor

5 lines (4 sloc) | 148 Bytes
1 mkdir myproject && cd myproject
2 echo "Hello" > hello
3 echo -e "FROM busybox\nCOPY /hello /\nRUN cat /hello"> Dockerfile
4 docker build -t helloops:v1 .

```

Step 7 - Click on GitHub and a popup window is displayed to authorize your GitHub account with Microsoft Azure and click Next.

The screenshot shows the Microsoft Azure portal's Deployment Center for the 'homenurse' app service. On the left, the navigation menu includes 'Create a resource', 'Home', 'Dashboard', 'All services', 'FAVORITES' (with 'All resources' selected), 'Resource groups', 'App Services', 'Function App', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', 'Virtual networks', 'Azure Active Directory', and 'Monitor'. The main area shows the 'Deployment Center' blade with sections for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Security, Deployment (Quickstart, Deployment credentials, Deployment slots), and Settings (Configuration, Application settings (Classic)). A progress bar at the top shows four steps: Source (highlighted in blue), Repository, Application, and Resources. Below the progress bar, a 'Select the code location' section offers 'Azure Repos' and 'GitHub'. The 'GitHub' option is selected and highlighted with a blue border. A tooltip for GitHub says 'Home to the world's largest community of developers'. At the bottom right are 'Previous' and 'Next' buttons, with 'Next' being highlighted in blue.

Step 8- Select repository from Repository dropdown select the repository where your docker file is saved and select branch as Master.

The screenshot shows the Microsoft Azure portal's Deployment Center for the 'homenurse' app service. The navigation menu is identical to the previous screenshot. The main area shows the 'Deployment Center' blade with the 'Repository' step selected (indicated by a green checkmark and a blue border). Under 'Select a repository', the 'My repositories' radio button is selected. The 'Repository' dropdown is set to 'ancelj/kaithanghuazuredocker' and the 'Branch' dropdown is set to 'master'. A progress bar at the top shows steps 1 through 4: Source, Repository, Application, and Resources. Step 2 (Repository) is highlighted in blue. At the bottom right are 'Previous' and 'Next' buttons, with 'Next' being highlighted in blue.

Repository created

Microsoft Azure

homenurse - Deployment Center

Source → Repository → Application → Resources

Confirm application settings

Detected the following Dockerfile

```

1 mkdir myproject &
& cd myproject
2 echo "hello"
>hello
3 echo -e "FROM
busybox\nCOPY
/hello \"/RUN
cat /hello>
Dockerfile
4 docker build -t

```

We have detected the following

Previous Next

Create container registry name

Microsoft Azure

homenurse - Deployment Center

Azure DevOps Organization
 Create new Use existing

* Organization name

* Project name

Container Registry

* Container registry name
 Create new Use existing

* Container registry SKU

* Container registry location

Previous Finish

Successfully build

The screenshot shows the Microsoft Azure portal's Deployment Center for the 'homenurse' app service. The left sidebar lists various Azure services like Home, Dashboard, All services, and App Services. The main pane displays the 'Deployment Center' interface for the 'homenurse' app. It features a flow diagram with three stages: 'Code', 'Build', and 'Deploy'. Below the diagram, under 'Activity logs', there is a single entry from 5/28/2019: 'Successfully setup continuous delivery and triggered build' with a green checkmark. The status bar at the bottom right indicates 'Production'.

Output

The screenshot shows the deployed application at <https://homenurse.azurewebsites.net>. The page displays the standard 'Welcome to nginx!' message, indicating that the Nginx web server is successfully installed and working. The browser address bar at the top shows the URL, and the footer contains the 'nginx.org' logo.

P1.3.2 DevOps in Azure

In order to release quickly and have stable application environments with minimal errors, it is of vital importance that developers work well with IT operations people and vice versa. To do this, they need to communicate well and sometimes work on the same team.

Ideally, they work in the same environment. Makes sense, right? This is called DevOps. DevOps is a hyped-up term, but it comes down to implementing common sense by working better together.

One of the most important goals that DevOps helps to achieve is:

- Faster and more reliable releases of the application through Continuous Integration (CI)* and Continuous Deployment (CD)
Microsoft provides some awesome services and features that can help your team to achieve this goal. You'll learn about them in this article.
- Continuous Deployment of Azure App Services
- Azure DevOps Projects
- Visual Studio Team Services

Continuous deployment of Azure App Services

Azure App Services are services that you use to host your web application or API. When you have the source code of your application in source control somewhere, you can easily have it deployed automatically to the App Service, every time you push up a change.

You do this by configuring the Deployment Options feature in App Services. This is really simple to do.

1. In your App Service (like a Web App), go to the Deployment Options blade
2. Here, it asks you to choose a source. So, choose where your source code lives
3. When you've chosen your source code repository, you'll need to authenticate so that Azure can use those credentials to access the source code
4. Next, you can choose the details of your deployment, which can include setting up a performance test as part of the process. In my case, I have chosen GitHub as my source

5. Once this is done, the process starts to run and builds and deploys your source code into the App Service

Once this is configured, every time that you commit changes to the source code repository, it will get built and deployed to the App Service automatically.

You can see the deployments in the Deployment Options blade in the App Service. This is a pretty cool feature and very useful. Especially when you work with a team of developers that are all checking in code to the same repository. However, the Deployment Options feature in App Service is pretty restricted. It is easy to set up, but that also means that you do not have a lot of configuration choices if you need to do more.

Part 2

Using Git as a Version Control System

P2.1 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.

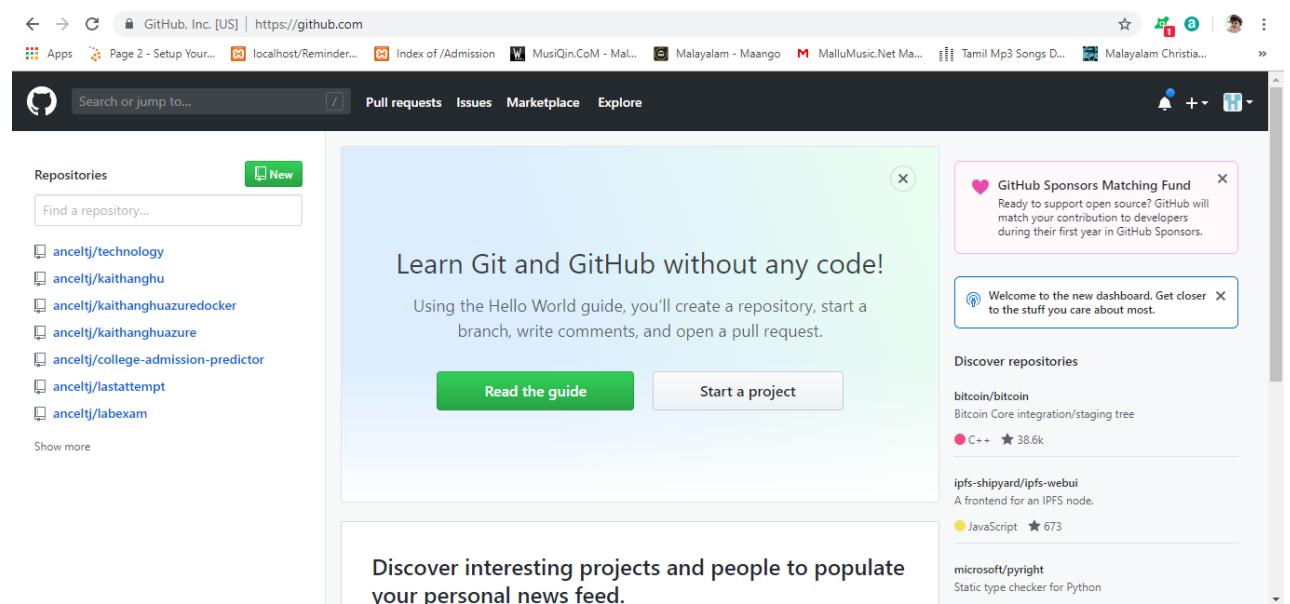
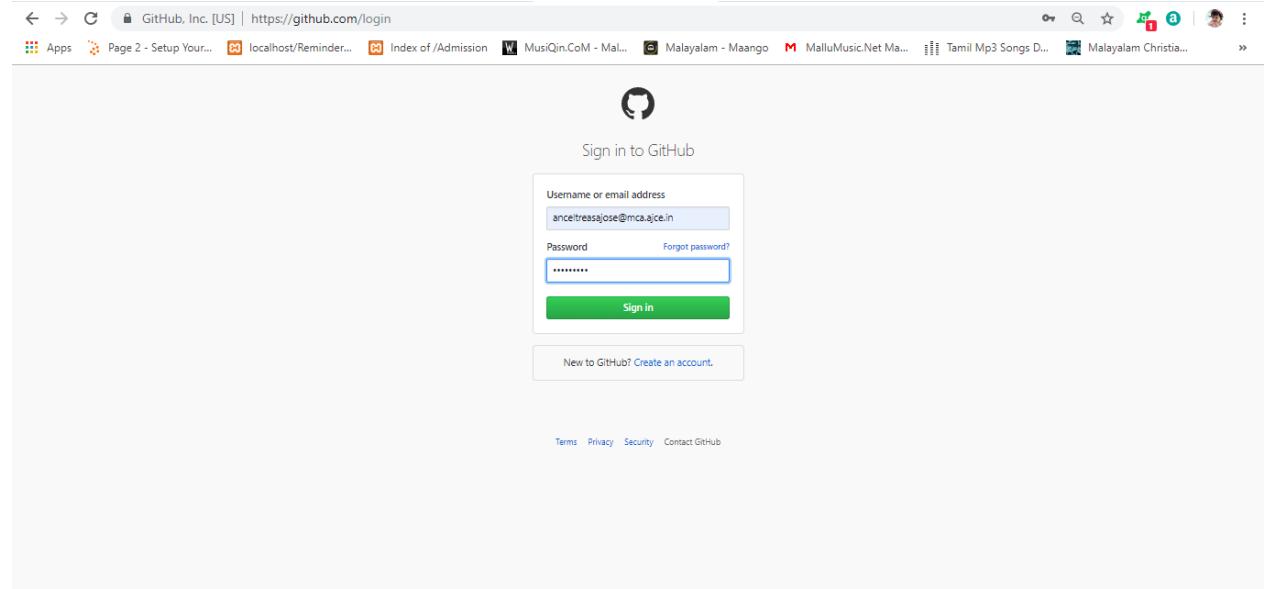
GitHub facilitates social coding by providing a web interface to the Git code repository and management tools for collaboration. GitHub can be thought of as a serious social networking site for software developers. Members can follow each other, rate each other's work, receive updates for specific projects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

P2.2 Working with Git

Step 1 - Sign in to GitHub



Step 2 - Create a repository in GitHub

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Owner: **anceltj** / Repository name: **newrepository**

Great repository names are short and memorable. Need inspiration? How about special-computing-machine?

Description (optional):

Public: Anyone can see this repository. You choose who can commit.

Private: You choose who can see and commit to this repository.

Initialize this repository with a README: This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None | Add a license: None | ⓘ

Create repository

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

anceltj / newrepository

Code Issues Pull requests Projects Wiki Security Insights Settings

Quick setup — if you've done this kind of thing before

Set up in Desktop or HTTPS <https://github.com/anceltj/newrepository.git>

Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

```
echo "# newrepository" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/anceltj/newrepository.git
git push -u origin master
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/anceltj/newrepository.git
git push -u origin master
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

Part 3

Data Design in Novel Technologies

P3.1 MongoDB

P3.1.1 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.

P3.1.2 Implementation of MongoDB

Download and Install MongoDB server for Windows.

https://www.mongodb.com/dr/fastdl.mongodb.org/win32/mongodb-win32-x86_64-2008plusssl-3.6.2-signed.msi/download

Download and extract MongoDB PHP driver

https://s3.amazonaws.com/drivers.mongodb.org/php/php_mongo-1.6.8.zip

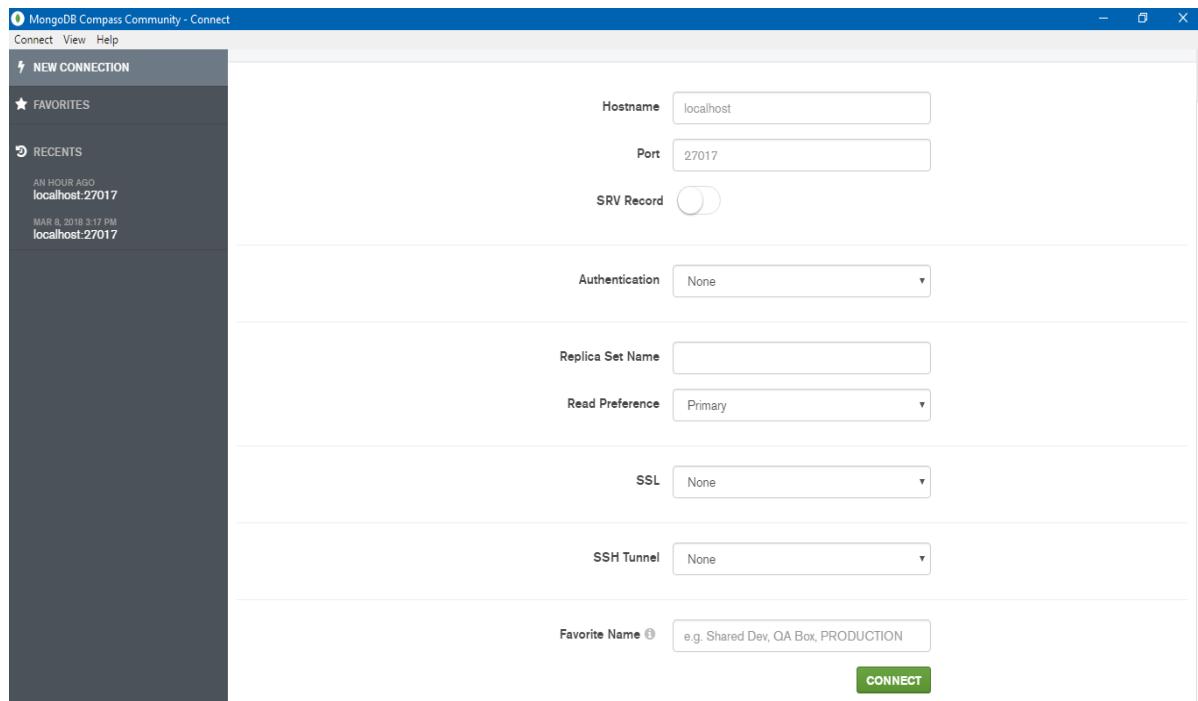
a. Rename any one file (Eg. php_mongo-1.6.8-5.6-vc11.dll) to php_mongo.dll and copy it to Extension directory known as ext directory. XAMPP: xampp\php\ext WAMPP: wamp\bin\php\php\ext

b. Add the following line to your php.ini extension=php_mongo.dll

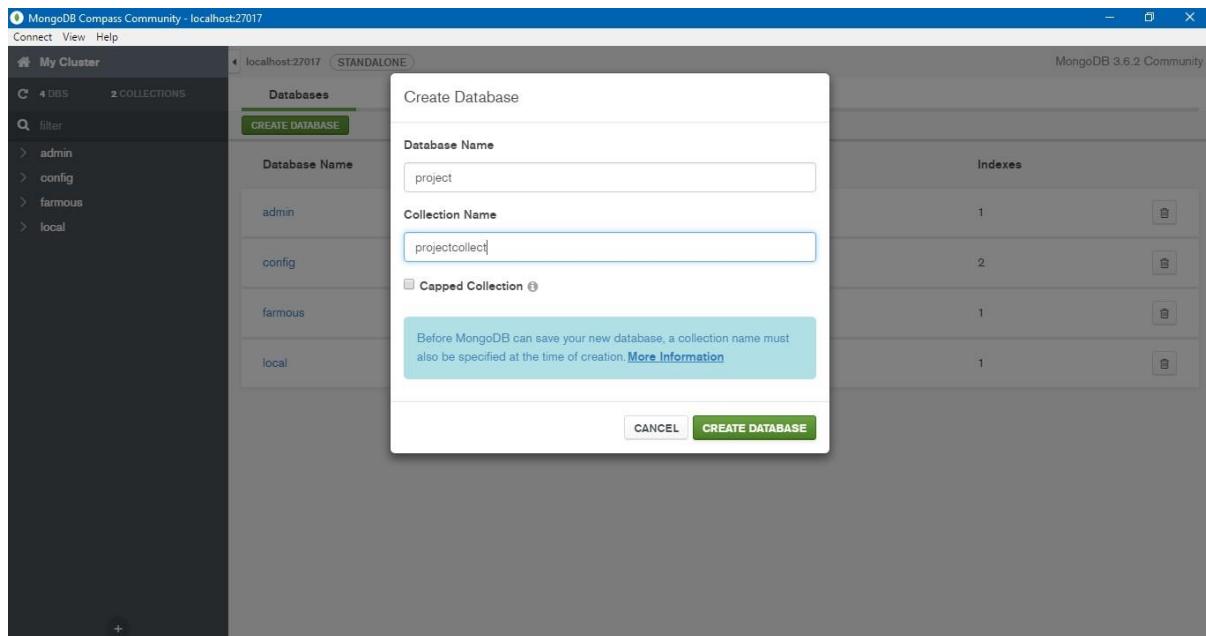
- c. Add Environment variable (Control Panel -> System and Security -> System -> Advanced system settings -> Environment variables) by editing PATH variable. C:\Program Files\MongoDB\Server\3.6\bin C:\xampp\php OR C:\wamp\bin\php
- d. Create directory C:\data\db
- e. Restart Apache server
- f. Open CMD and start MongoDB server by using command Mongod

Working with MongoDB Server

1. Open the MongoDB Server (MongoDB Compass community: localhost)
2. Connect to localhost



3. Once connected to the server, Create a database and collection as well. A collection in MongoDB is equivalent to RDBMS table



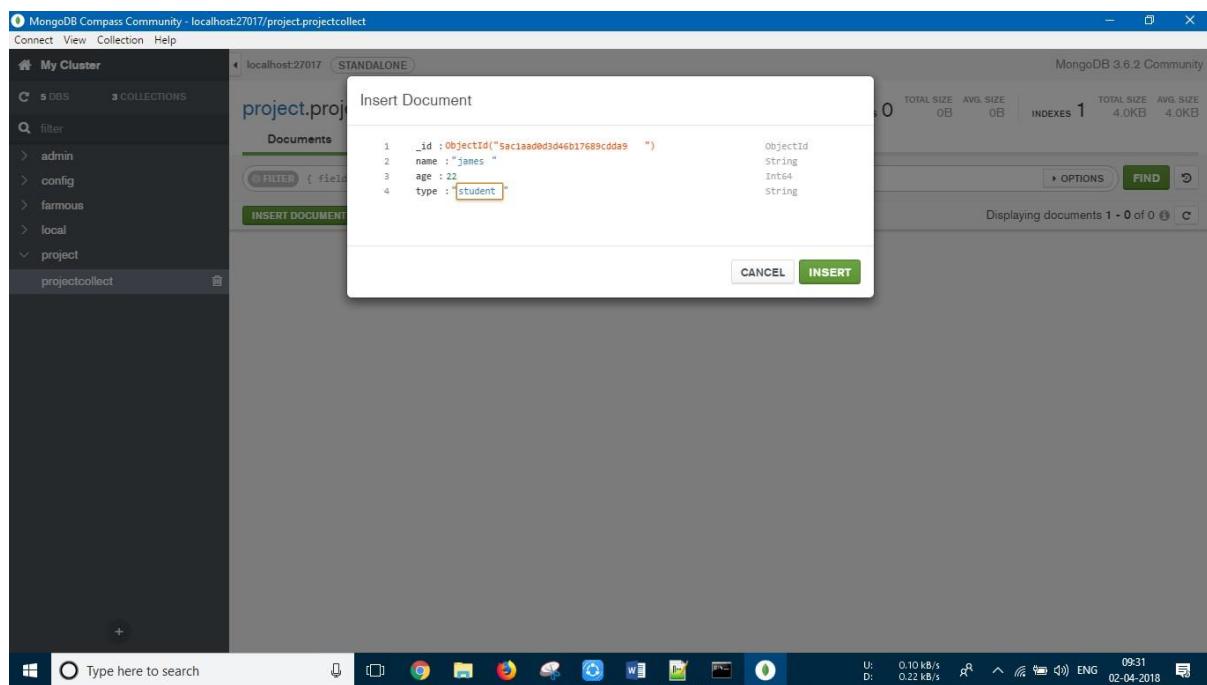
4. Once the database and collection are created, insert your documents into the collection. Documents in MongoDB is equivalent to the rows in RDBMS.

The screenshot shows the MongoDB Compass interface with the 'project' database selected. The sidebar shows 5 DBS and 3 COLLECTIONS. The main area displays a table for the 'project' collection:

Collection Name	Documents	Avg. Document Size	Total Document Size	Num. Indexes	Total Index Size
projectcollect	0	-	0.0 B	1	4.0 KB

At the bottom, the Windows taskbar shows the search bar, pinned icons for File Explorer, Edge, and File Manager, and system status indicators.

5. Document ID is the default and unique value provided by the MongoDB



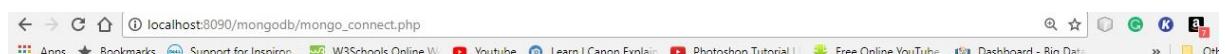
Basic queries to access your database

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

.php page to with basic queries access MongoDB

```
1 <?php
2     // connect to mongodb
3     $m = new MongoClient();
4
5     echo "Connection to database successfully<br>";
6     //$db = $m->mymongodb;
7     $db = $m->farmous; //Database
8     echo "Database mydb selected<br>";
9     //$collection = $db->mongo_collection;
10    $collection = $db->farmous_collection; //Collection
11    echo "collection ook<br>";
12
13    $cursor = $collection->find();
14    // iterate cursor to display title of documents
15
16    foreach ($cursor as $document) {
17        echo("Name: ".$document['name']." - Age: ".$document['age']."<br>");
18        //fields in the database
19    }
20 ?>
```

Output



Connection to database successfully

Database mydb selected

collection ook

Name: james - Age: 22

Name: subin - Age: 21

P3.2 Bigtable in GCP

P3.2.1 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 achieve 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 Hypertable, an open source technology that is marketed in a commercial version as an alternative to HBase.

P3.2.2 Implementation of Bigtable

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

The screenshot shows the 'Create an instance' page for Google Cloud Bigtable. The 'Instance name' field is set to 'bigtbinstance'. The 'Instance ID' field is also set to 'bigtbinstance'. Under 'Instance type', 'Production (recommended)' is selected. Under 'Storage type', 'SSD' is selected. On the right, a 'Cost estimate' table provides a breakdown of monthly resource costs:

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

Below the table, it notes: 'Node charges are for provisioned resources, regardless of node usage. The same node charges apply even if your instance is inactive.' Summary information states: 'Monthly charge: \$1,593.50 per month (1,000 GB data, 3 nodes) Effective hourly rate: \$2.18'.

Step 2 .Installing the Cloud SDK for Cloud Bigtable

```
gcloud components update beta
```

```
gcloud config set project
```

```
gcloud beta Bigtable instance --help # help for all command
gcloud beta bigtable instances create --help # help for the `create`
```

The screenshot shows the Google Cloud Platform IAM & admin settings page for project 'bigtb'. The left sidebar lists options like IAM, Identity & Organisation, Organisation policies, Quotas, Service accounts, and Labels. The main area shows the Project name as 'bigtb', Project ID as 'bigtb-241909', and Project number as '872681501880'. A 'SAVE' button is visible. Below this is a 'Location' section and an 'Access Transparency' section. At the bottom is a terminal window showing a Cloud Shell session for project 'premium-summit-241504'. The terminal output includes commands for setting the project, updating components, and running a survey.

```

Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to premium-summit-241504.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
mariymanuel01@cloudshell:~ (premium-summit-241504)$ gcloud components update
All components are up to date.

To take a quick anonymous survey, run:
$ gcloud alpha survey

mariymanuel01@cloudshell:~ (premium-summit-241504)$ gcloud components install cbt
All components are up to date.
mariymanuel01@cloudshell:~ (premium-summit-241504)$

```

The screenshot shows the Google Cloud Platform Compute Engine VM instances settings page for project 'bigtb'. The left sidebar lists options like VM instances, Instance groups, Instance templates, Sole tenant nodes, Disks, Snapshots, and Images. The main area shows a summary of Compute Engine features and a 'Compute Engine' card. At the bottom is a terminal window showing a Cloud Shell session for project 'premium-summit-241504'. The terminal output includes commands for setting the project, updating components, and running a survey.

```

Use "gcloud config set project [PROJECT_ID]" to change to a different project.
mariymanuel01@cloudshell:~ (premium-summit-241504)$ gcloud components update
All components are up to date.

To take a quick anonymous survey, run:
$ gcloud alpha survey

mariymanuel01@cloudshell:~ (premium-summit-241504)$ gcloud components install cbt
All components are up to date.
mariymanuel01@cloudshell:~ (premium-summit-241504)$ echo project=bigtb-241909 > ~/.cbtrc
mariymanuel01@cloudshell:~ (premium-summit-241504)$ echo instance=bigtbinstance >> ~/.cbtrc
mariymanuel01@cloudshell:~ (premium-summit-241504)$

```

PART 4

Search Engine Optimization

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.

P4.1 Google AdWords

P4.1.1 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.

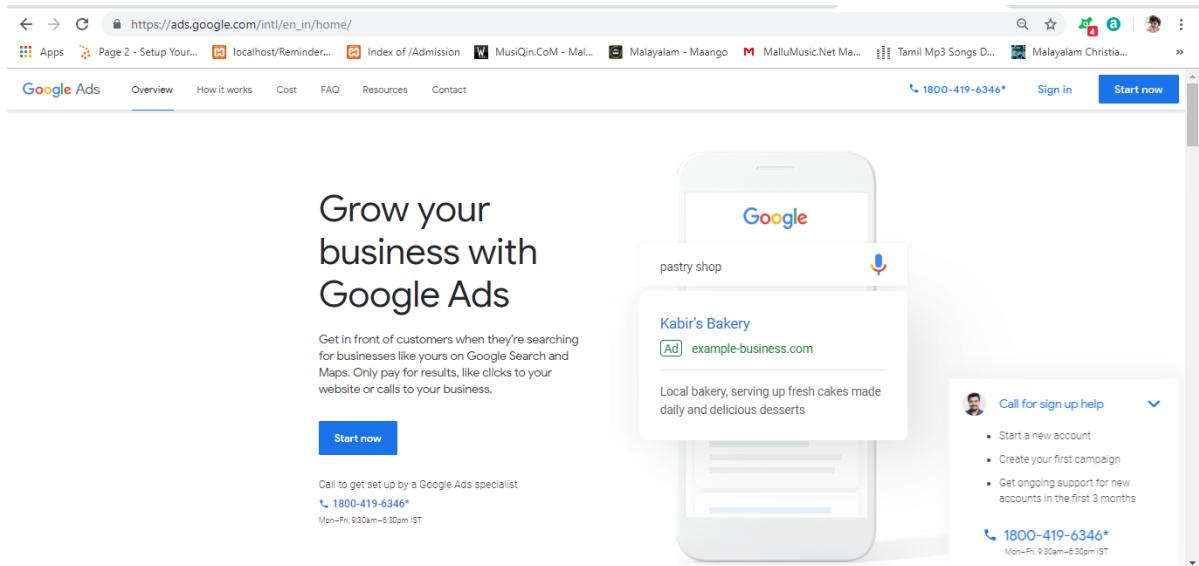
When choosing keywords for your AdWords campaigns different matching options are available. The two main keyword match options include the following:

- **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.

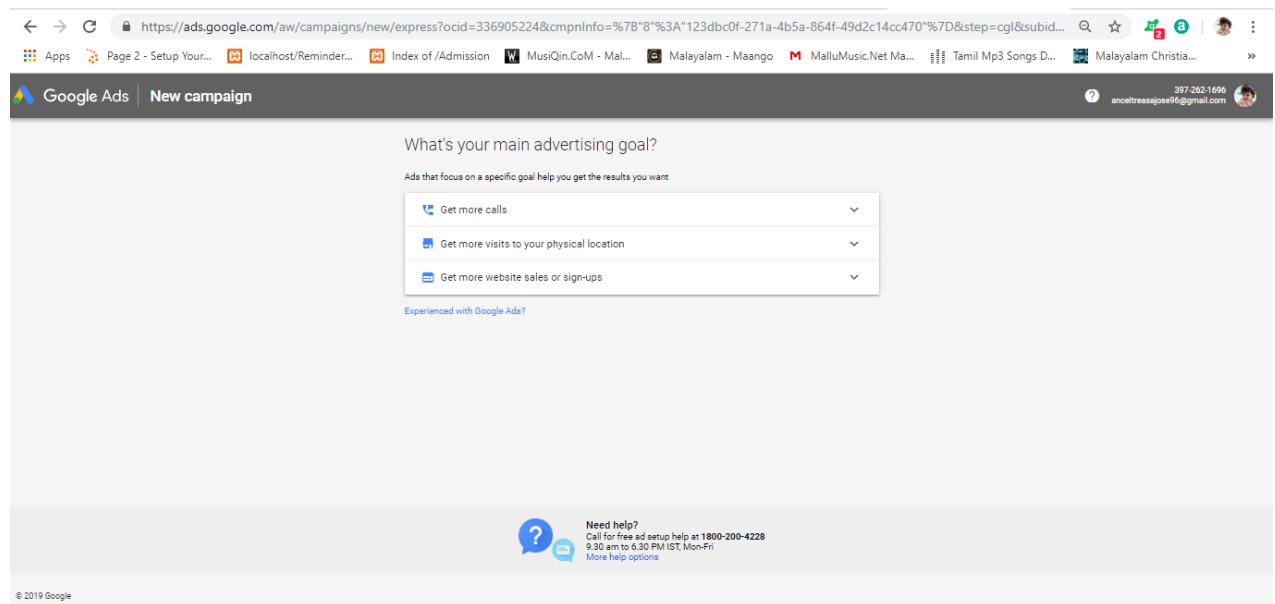
When using AdWords keywords are also used to determine your cost of advertising. Each keyword you choose will have a cost per click (CPC) bid amount. The bids specify the maximum amount you're willing to pay each time someone clicks your ad (the maximum cost-per-click). A higher CPC bid can allow your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

P4.1.2 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.

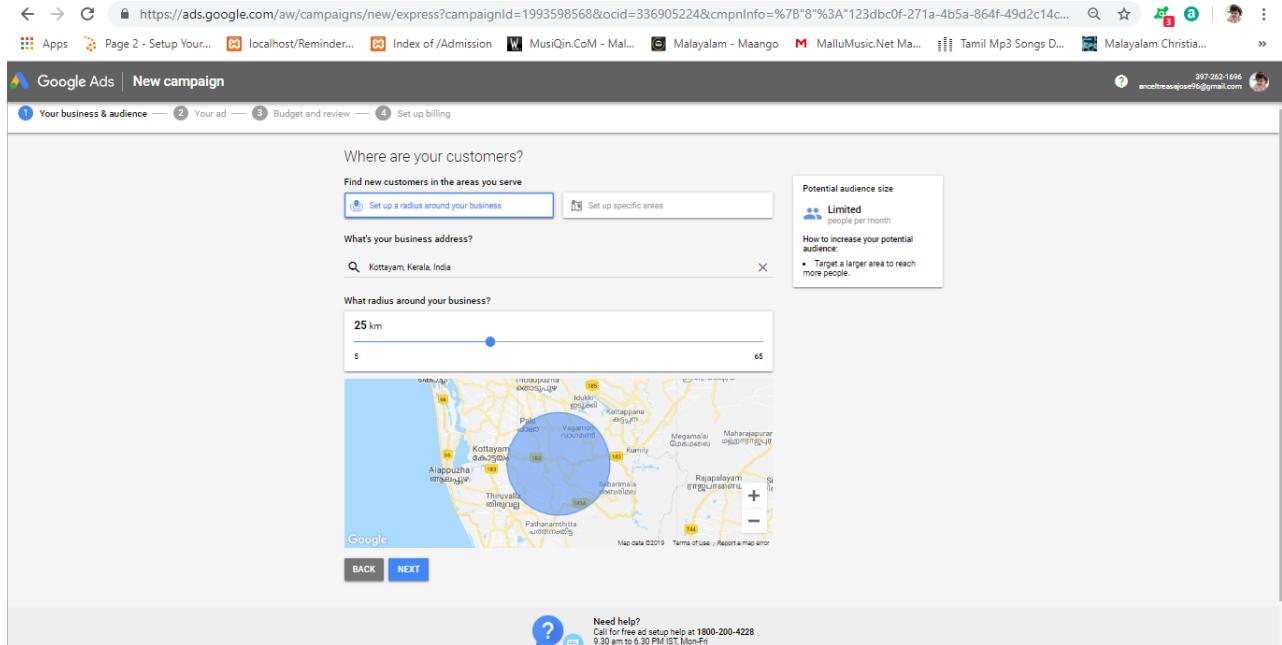


Step 3: Pick a goal for your ad, which means, what action do you most want customers to take?

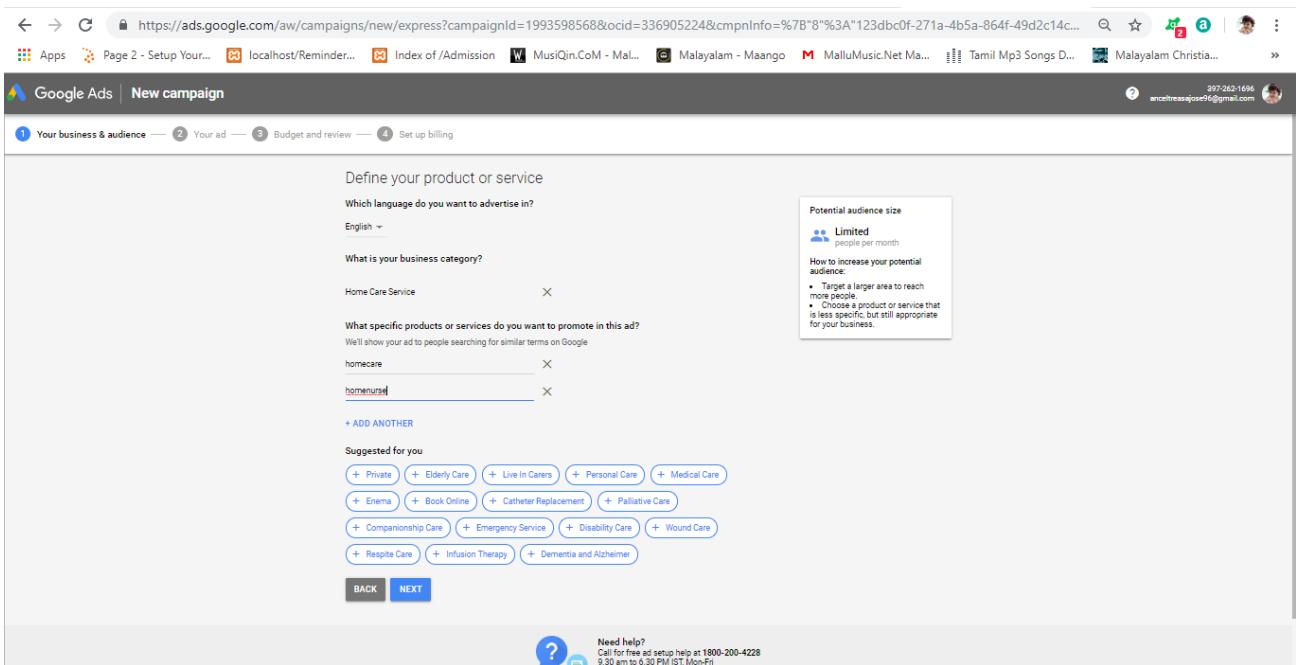
The screenshot shows the 'Google Ads | New campaign' interface. The main heading is 'What's your main advertising goal?'. Below it, a note says 'Ads that focus on a specific goal help you get the results you want.' A dropdown menu lists three options: 'Get more calls', 'Get more visits to your physical location', and 'Get more website sales or sign-ups'. The third option is currently selected. Underneath the dropdown, there's a section titled 'Choose this goal if:' with two checked boxes: '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 the dropdown is a 'PICK GOAL' button.

The screenshot shows the 'Google Ads | New campaign' interface, specifically the 'Describe your business' step. The top navigation bar shows the current step: '1 Your business & audience — 2 Your ad — 3 Budget and review — 4 Set up billing'. The main area has a heading 'Describe your business' with a note: 'This info will be used to create an ad that reaches the right customers'. It contains two input fields: 'Business name' (containing 'kaihanghu') and 'Business website' (containing 'www.kaihanghu.m'). Below these fields are 'BACK' and 'NEXT' buttons. A 'Need help?' icon is visible at the bottom right.

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.



Step 5: Define your products and services. Specifically, it aims for the business category.



Step 6: Create your Ad preview including Headline, Description, Ad URL.

Let's write your ad

Highlight the products and services you offer, and what makes your business unique

Get tips and view sample ads

Ad #1

Headline 1: kaithanghu

Headline 2: Kerala Healthcare

Description: We Provide Great Care for You in Your Home. Call kaithanghu.

Your ad preview

kaithanghu | Kerala Healthcare
http://www.kaithanghu.ml
We Provide Great Care for You in Your Home. Call kaithanghu.

SEE MORE AD LAYOUTS

WRITE ANOTHER AD

Clicks on your ad go to:
http://www.kaithanghu.ml

BACK **NEXT**

Need help? Call for free ad setup help at 1800-200-4228
9:30 am to 6:30 PM IST, Mon-Fri
More help options

Step 7: Review your Ad and settings.

Set your budget

Select the option that works best for your business and the results you want. You can make updates any time.

₹345 daily average • ₹10,488 monthly max

RECOMMENDED FOR YOU ₹461 daily average • ₹14,014 monthly max

₹614 daily average • ₹18,666 monthly max

How your budget works

What you pay for
You only pay for ad clicks or calls to your business.

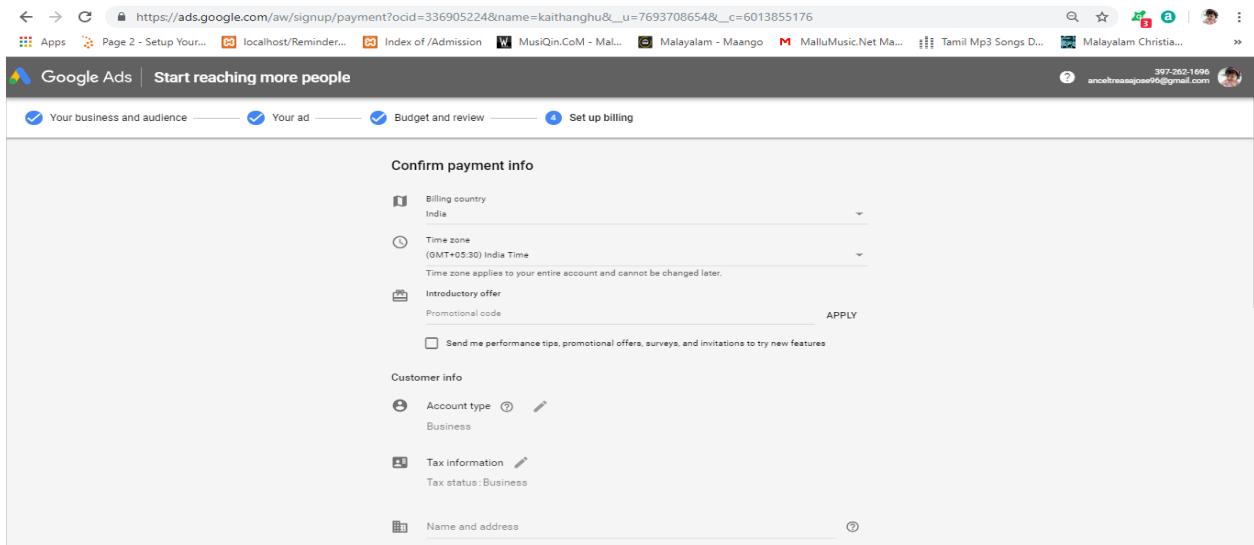
Your daily average
Some days you might spend less than your daily average, and on others you might spend up to 4 times as much. But over the month you won't pay more than your monthly max.

If you change your mind
Try running your ad, but no need to commit. Change your budget or cancel your ad at anytime.

ENTER YOUR OWN BUDGET Currency: Indian Rupee (₹) ▾

BACK **NEXT**

Need help? Call for free ad setup help at 1800-200-4228
9:30 am to 6:30 PM IST, Mon-Fri
More help options



P4.2 Google AdSense

P4.2.1 Introduction to Google AdSense

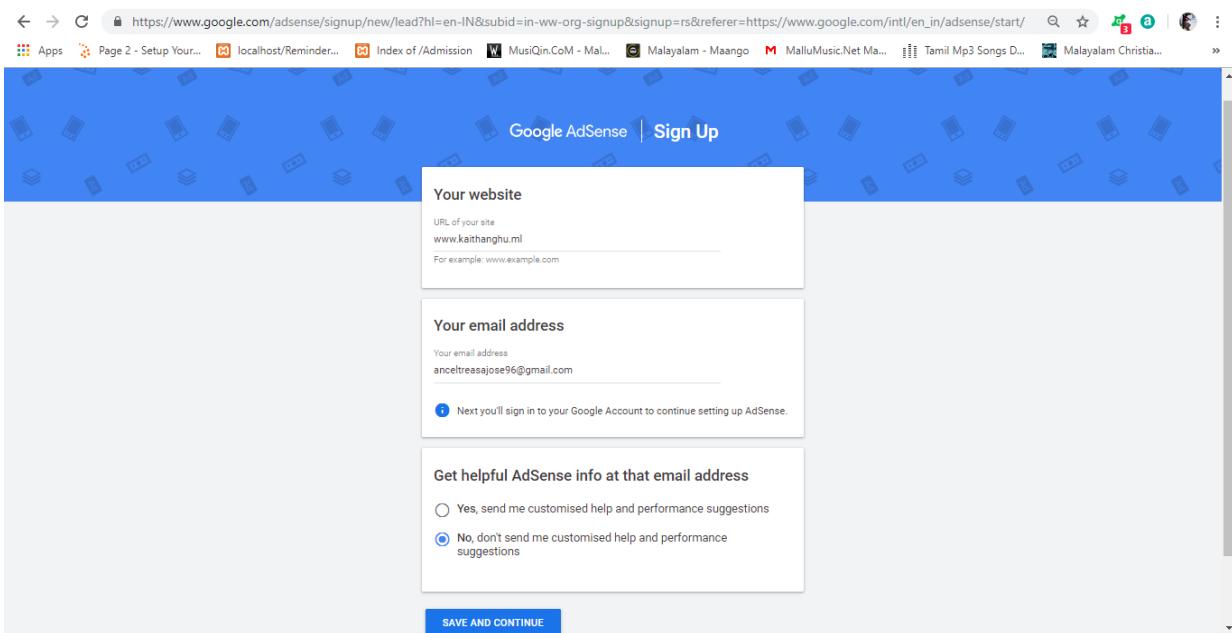
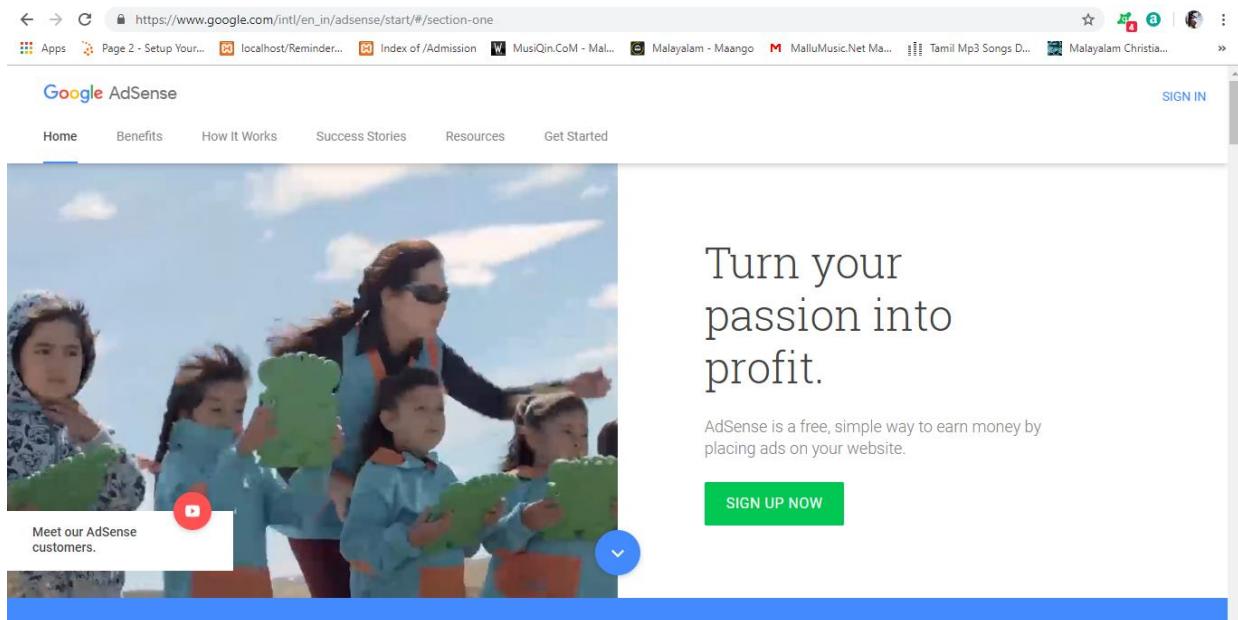
AdSense (Google AdSense) is an advertising placement service by Google. The program is designed for website publishers who want to display targeted text, video or image advertisements on website pages and earn money when site visitors view or click the ads. The advertisements are controlled and managed 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.

P4.2.2 Implementation of AdSense



Google AdSense | Sign Up

ancel jose
ancelthasanjose@gmail.com

URL of your site
<http://www.kaitanghu.ml>

You have indicated that you are not willing to receive occasional AdSense performance suggestions.

[CHANGE THIS INFO](#)

Select your country or territory

Country or territory
India

Please review and accept our Terms and Conditions

[Google AdSense Online Terms of Service](#)

1. Welcome to AdSense

Thanks for your interest in our search and advertising services (the "Services"). By using our Services, you agree to (i) these Terms of Service ("the [AdSense Program Policies](#), which include but are not limited to the Content Policy, the [Network Policy](#), the [Advertiser Policy](#), the [Advertiser Agreement](#), the [User Consent Policy](#) (containing the [Advertiser Policies](#)), and (ii) the [Google Privacy Policy](#). These [Program Policies](#) and [Privacy Policy](#) (collectively the "AdSense Policies") and (iii) the [Google AdSense Terms of Service](#) (the "Agreement"). Together, the [AdSense Policies](#) and the [AdSense Terms of Service](#) will take precedence over any agreement you may have with Google regarding the Services. Please read these [Terms of Service](#) and [Privacy Policy](#) carefully before you click "I agree". Please visit these [Terms of Service](#) and [Privacy Policy](#) from time to time for updates.

Yes, I have read and accept the agreement.

You represent that you are an administrator for this Account and that you are authorized to act on behalf of, and bind to this Agreement, the owner of this Account.

[CREATE ACCOUNT](#)

https://www.google.com/adsense/new/u/2/pub-4846684685630062/home

Connect your site to AdSense

Use the following ad code to activate your account and start showing ads.

- 1 Copy the code below
- 2 Paste it into the HTML of <http://kaithanghu.ml>, between the <head> and </head> tags
- 3 Check the box and click done when you finish

WordPress user? [Get help with adding AdSense code.](#)

URL of your site
<http://kaithanghu.ml>

```
(adsbygoogle = window.adsbygoogle || []).push({
  google_ad_client: "ca-pub-4846684685630062",
  enable_page_level_ads: true
});
```

[COPY](#)

Show ads as soon as account is ready. [Learn more](#)

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 consent policy. Once your account is approved, you'll have access to controls for serving ads to users in the EEA.

I've pasted the code into my site

[DONE](#)

Connect your site to AdSense
Use the following ad code to activate your account and start showing ads.

- ① Copy the code below
- ② Paste it into the HTML of <http://kaithanghu.ml>, between the <head> and </head> tags
Copy and paste the code on every page you want ads. The ads will appear after we've activated your account.
- ③ Check the box and click done when you finish

WordPress user? [Get help with adding AdSense code.](#)

URL of your site
<http://kaithanghu.ml>

```
<script async src="//pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></script>
<script>
  (adsbygoogle = window.adsbygoogle || []).push({
    google_ad_client: "ca-pub-4846684685630062",
    enable_page_level_ads: true
  });
</script>
```

COPY

Show ads as soon as possible. If you have visitors from outside the EU, make sure you're complying with Google's EU user consent policy. Once your account is activated, ads will appear on your site.

I've pasted the code in.

DONE

Activating your account
This usually takes less than a day, but in some cases can take longer. We'll notify you when everything's ready.

Remember: place the code on every page you want ads.
Click "Show code" if you need to copy and paste the code again.

Paste it into the HTML of <http://kaithanghu.ml>, between the <head> and </head> tags

```
<script async src="//pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></script>
<script>
  (adsbygoogle = window.adsbygoogle || []).push({
    google_ad_client: "ca-pub-4846684685630062",
    enable_page_level_ads: true
  });
</script>
```

COPY

Not sure what to do? [Visit our Help Centre.](#)

[^ Hide Code](#)

P4.3 Google Webmasters

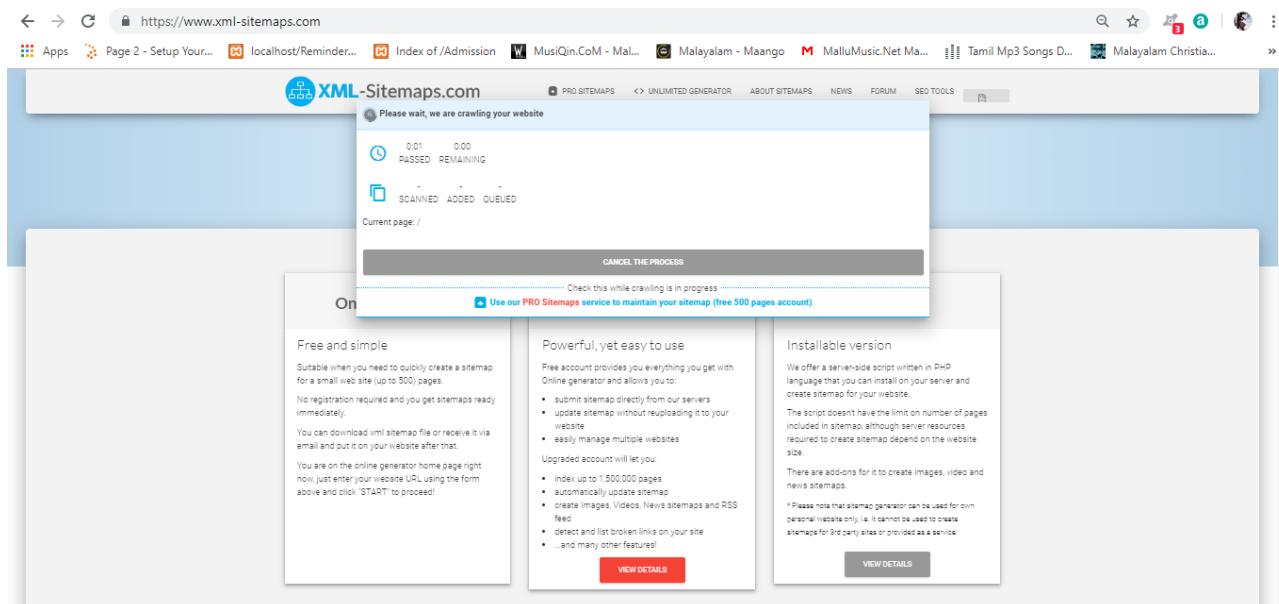
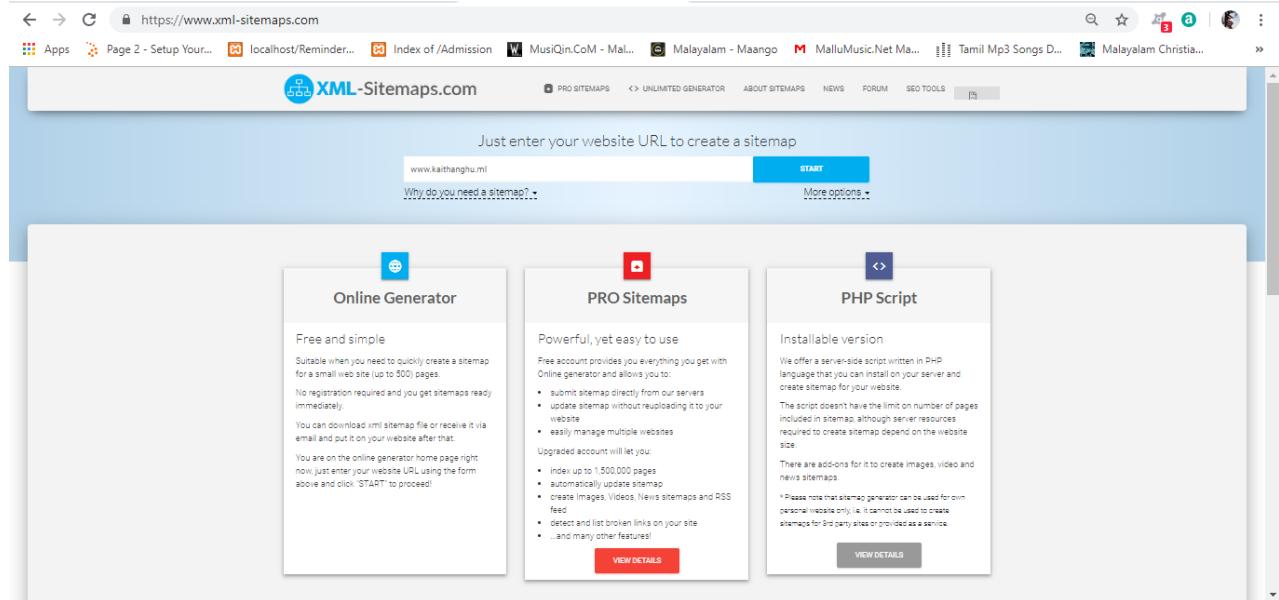
P4.3.1 Introduction to Google Webmasters

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.

P4.3.2 Implementation of Sitemap

A site map is a model of a website's content designed to help both users and search engines navigate the site. A sitemap can be a hierarchical list of pages (with links) organized by topic, an organization chart, or an XML document that provides instructions to search engine crawl bots. The Sitemaps protocol allows a webmaster to inform search engines about URLs on a website that are available for crawling.

Step 1- Generate your website sitemap using an online sitemap generator. Enter your website URL and Start the process



Step 2: Once the process is completed, it will generate a sitemap.xml file.

The screenshot shows the XML-Sitemaps.com interface. At the top, the URL <http://www.kaithanghu.ml/> is entered. The main area displays "Sitemap Details" for the URL. It includes a "What's next?" section with a "DOWNLOAD YOUR XML SITEMAP FILE" button, instructions to upload it to the domain root folder, and a note to open Google Search console. To the right is a "Sitemap Details" panel showing statistics: Created on: 2 June 2019, 09:20; Processing time: 0.000s; Pages indexed: 2 (crawled: 3); Pages size: 0.11Mb; Broken links: 1. Below these are sections for "Sitemap Preview" (listing URLs like <http://www.kaithanghu.ml/> and <http://www.kaithanghu.ml/about>), "Other Downloads" (buttons for "DOWNLOAD ALL SITEMAPS IN ZIP FILE" and "OR RECEIVE ALL GENERATED SITEMAP FILES VIA EMAIL"), and "Feedback" (a form to send testimonial via email).

Step 3: Upload the sitemap.xml file to your root directory and enter the path to submit the sitemap

This screenshot shows a browser window displaying the XML sitemap code for the website www.myknowhere.gq. The code is as follows:

```

<urlset xmlns="http://www.sitemaps.org/schemas/sitemap/0.9" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.sitemaps.org/schemas/sitemap/0.9 http://www.sitemaps.org/schemas/sitemap/0.9/sitemap.xsd">
  <!-- created with Free Online Sitemap Generator www.xml-sitemaps.com -->
  <url>
    <loc>http://www.myknowhere.gq/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>1.00</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/about/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.80</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/services/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.80</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/faqs/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.80</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/howitworks/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.80</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/contact/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.80</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/password/reset/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.80</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/addlisting/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.80</priority>
  </url>
  <url>
    <loc>http://www.myknowhere.gq/category/</loc>
    <lastmod>2019-05-30T07:15:57+00:00</lastmod>
    <priority>0.64</priority>
  </url>
</urlset>

```

P4.3.3 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/

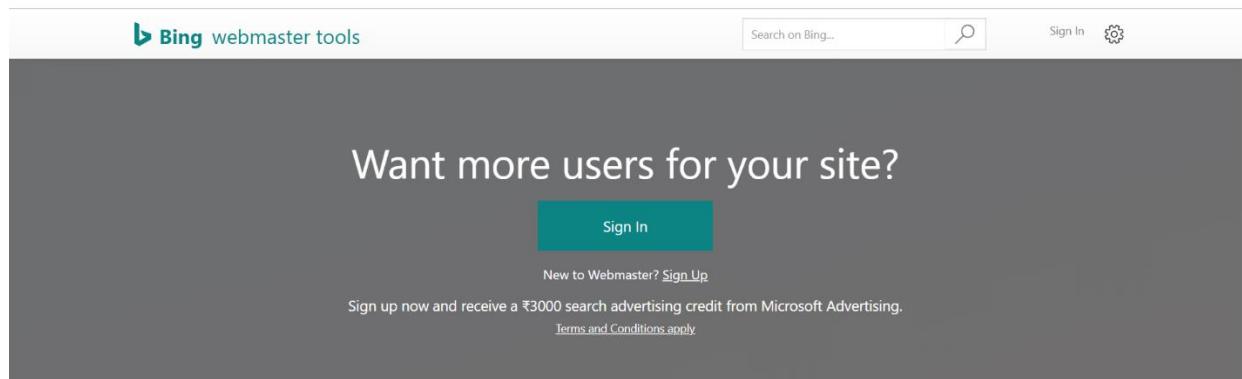
P4.4 Bing Webmaster Tool

P4.4.1 Introduction to Bing Webmaster Tool

Bing Webmaster Tools (previously the Bing Webmaster Centre) is a free service as part of Microsoft's Bing search engine which allows webmasters to add their websites to the Bing index crawler. The service also offers tools for webmasters to troubleshoot the crawling and indexing of their website, Sitemap creation, submission and ping tools, website statistics, consolidation of content submission, and new content and community resources. Bing has generally been great to SEOs and webmasters, and nowhere is this more apparent than with Bing Webmaster Tools. In many ways, Bing Webmaster Tools is actually more advanced — and caters more to SEO professionals than its Google counterpart, Google Search Console. For this, I give them a round of applause.

P4.4.2 Implementation of Bing Webmaster Tool

1. Sign in to Bing webmaster



The screenshot shows the Bing Webmaster interface. At the top, there's a navigation bar with links for Profile, Messages (0), Help, and a user account. Below that is a search bar and a 'Last 30 days' date range selector. The main area is titled 'My Sites' and has a section for 'Add a Site' with a 'Site URL' input field and an 'ADD' button. Below this are buttons for 'DELETE', 'EXPORT', 'Search', and 'Compact'. A timeline at the bottom shows activity from '27-04-2019' to '26-05-2019'. The dashboard also features links for 'Site Dashboards', 'Messages', 'Clicks from Search', 'Appeared in Search', 'Pages Crawled', and 'Pages Indexed'. A central message box says 'Want to control how your site appears in search?' with a 'ADD YOUR SITE' button. The 'Recent Blog Posts' section displays two entries: 'bingbot Series: Easy set-up guide for Bing's Adaptive URL submission API' by 'Bing Team' (27-05-2019) and 'bingbot Series: Get your content indexed fast by now submitting up to 10,000...' by 'Bing Team' (31-01-2019). To the right, there's a 'Search Blog' section with posts like 'Bing delivers text-to-speech and greater coverage of intelligent answers and...' by 'Bing Team' (20-03-2019) and 'Bing caps off an exciting football season with helpful features' by 'Bing Team' (01-02-2019). At the bottom of the dashboard are links for Privacy and Cookies, Legal, Advertise, Help, and Support.

Step 2: Add a website and Provide the details about the site.

The screenshot shows the 'Add a Site' form on the Bing Webmaster platform. The URL 'http://www.kaithanghu.ml/' is entered in the 'URL *' field. There's a placeholder 'Add a sitemap' with a link icon. The 'When do you receive the most traffic to this site for your local time of the day?' dropdown is set to '9AM - 5PM'. Under 'ABOUT ME', the 'First Name' is 'Ancel' and 'Last Name' is 'Jose'. The 'Email *' field contains 'anceltreasa@gmail.com'. The 'Job role' is listed as 'student'. In the 'Company or organization Name' field, 'Amaljyothi' is entered, and in the 'Company or organization size' field, 'Industry' is selected. The sidebar on the left shows a file tree with 'Doc', 'Word files', 'keep', and 'Av'.

Step 3: Verify ownership of your site.

- Download and Upload BingSiteAuth.xml the file to your root directory.
- Confirm successful upload by visiting your URL/BingSiteAuth.xml in your browser
- Copy and paste a <meta> tag in your default webpage

Option 1: Place an XML file on your web server

1. Download [BingSiteAuth.xml](#)
2. Upload the file to <http://www.kaithanghu.ml/BingSiteAuth.xml>
3. Confirm successful upload by visiting <http://www.kaithanghu.ml/BingSiteAuth.xml> in your browser
4. Click the verify button below

VERIFY CANCEL

Option 2: Copy and paste a <meta> tag in your default webpage

You can add a <meta> tag containing the authentication code to the <head> section of your default webpage.

```
<meta name="msvalidate.01" content="EA662427A192B310D30BFBCA94E0A796" />
```

An example:

```
<html>
  <head>
    <meta name="msvalidate.01" content="EA662427A192B310D30BFBCA94E0A796" />
    <title>Your SEO optimized title</title>
  </head>
  <body>
    page contents
  </body>
</html>
```

Privacy and Cookies Legal Advertise Help Support Feedback

Step 4: Upload the BingSiteAuth.xml file into the root directory.

Select the file you want to upload to "/home/kaithanghu/public_html/kaithanghu/public".

Maximum file size allowed for upload: ∞

Overwrite existing files

Drop files here to start uploading
or
Select File

BingSiteAuth.xml
100%
85 Bytes complete

[Go Back to "/home/kaithanghu/public_html/kaithanghu/public"](#)

Step 5: Site is verified and we get access to the dashboard.

SEO Analyzer

SEO analyzer tool to give webmasters or bloggers an SEO analysis on a page-by-page basis. This tool analyzes the website social media ranking, site usability, online reputation, meta tags, keywords, and site speed. Examine your webpage and get your analysis report together with your rankings from this SEO tool. Improve your web pages and increase your search engine ranking.

Part 5

Site Security

P5.1 SiteLock Security

SiteLock provides comprehensive, cloud-based website *security* solution 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 backlisting's SiteLock Trust Seal provides customer confidence and increases your sales and conversions. And they are the Global Leader in business website security solutions, is the only web security solution to offer complete, cloud-based website protection. Its 360 -degree monitoring finds and fixes threats, prevents future attacks, accelerates website performance and meets PCI compliance standards for businesses of all sizes. Founded in 2008, SiteLock protects over 12 million websites worldwide.

Key Features

- **Website Acceleration**

Improve SEO and reduce bandwidth and server use with SiteLock's Global Content Delivery Network (CDN); ensure a consistent and speedy consumer experience.

- **DDoS Protection**

Protect websites from all types of DDoS attacks with auto -detection and triggering, and fewer than 0.01% false positives.

- **Web Application Firewall**

Secure websites from automated and human targeted attacks, prevent scrapers, block backdoor access and sort out bot traffic.

- **Automatic Detection and Remediation**

Get 360-degree protection from malware and identify vulnerabilities with daily malware detection scans, automatic malware removal, and expert support.

- **Expert Support 24/7/365**

Connect with SiteLock's specialized security engineers any time of day via email, chat, and phone, and use SiteLock911 for emergency malware removal.

Part 6

Server Security and Penetration Testing

P6.1 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

P6.2 HTTPS using .htaccess file

.htaccess

.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 ^([^\.]+)\.php$ $1.php [NC,L]
```

P6.3 ModSecurity Tools

The ModSecurity Tools interface allows you to install and manage ModSecurity rules.

ModSecurity Core RuleSet (CRS) is a set of generic attack detection **rules** for use with **ModSecurity** or compatible web application firewalls. The CRS aims to protect web applications from a wide range of attacks

Step 1 : Install the ModSecurity Apache module in order to use this interface.

If your system runs EasyApache 3, use WHM's *EasyApache 3* interface (*WHM >> Home >> Software >> EasyApache 3*) to install the ModSecurity Apache module.

(*WHM >> Home >> Software >> EasyApache 4*)

If your system runs EasyApache 4, use WHM's *EasyApache 4* interface (*WHM >> Home >> Software >> EasyApache 4*) or the yum install ea-apache24-mod_security2 command to install the ModSecurity Apache module

The screenshot shows the WHM (Web Host Manager) interface on a CentOS 7.4 kvm server. The top navigation bar includes links for Apps, sent subject-wc, CSE S5 A, CSE B, java - Error(23, 17), Download, and a search bar. The top right corner displays system information: CENTOS 7.4 kvm [centos] v68.0.36 Load Averages: 0.09 0.08 0.05. The main header "WHM" is followed by News, Change Log, and Log Out (root). The left sidebar has a "Software" section selected, listing: EasyApache 4, Install a Perl Module, Install an RPM, Module Installers, MultiPHP INI Editor, MySQL/MariaDB Upgrade, Rebuild RPM Database, System Update, and Update Server Software. The central content area displays icons and names for these software management tools.

Step 2 : (WHM >> Home >> Security Center)

Modsecurity Tools

ModSecurity Vendors

The screenshot shows the WHM Security Center page on the same CentOS 7.4 kvm server. The top navigation bar and system information are identical. The main header "WHM" is followed by News, Change Log, and Log Out (root). The left sidebar has a "Security Center" section selected, listing: Server Configuration, Support, Networking Setup, Security Center, Server Contacts, Resellers, Service Configuration, Locales, Backup, and Clusters. The central content area displays icons and names for security-related tools: Apache mod_userdir Tweak, Compiler Access, Configure Security Policies, cPHulk Brute Force Protection, Host Access Control, Manage External Authentications, Manage root's SSH Keys, Manage Wheel Group Users, ModSecurity™ Configuration, ModSecurity™ Tools, ModSecurity™ Vendors, and Password Strength Configuration.

Step 3: Managing Vendors

ModSecurity™ Vendors

Manage Vendors

Vendor	Provider	Enabled	Updates	Sets Included
OWASP ModSecurity Core Rule Set V3.0		This vendor is not installed.		+ Install

[Back To Top](#) [Add Vendor](#)

Step 4: Add COMODO ModSecurity Apache Rule Set

Add Vendor

Use this interface to add a Vendor for ModSecurity.
For more information on how to create a Vendor, visit our [documentation](#).

Vendor Configuration URL

The file name should begin with meta_ followed by the short vendor identification code, and finally the .yaml extension.
Example: https://example.com/example/meta_example.yaml

Vendor Name

Load

This copy of cPanel & WHM is for trial use and will expire at the end of the trial period. Upgrade to a paid copy of cPanel & WHM to use the software after that period.

When you purchase a license, you must provide the following information:

1. License Type: VPS
2. IP Address: 35.244.28.216

[Purchase a License](#)

ModSecurity™ Vendors

Manage Vendors

Vendor	Provider	Enabled ▲	Updates	Sets Included
OWASP ModSecurity Core Rule Set V3.0	SpiderLabs OWASP V3 curated ModSecurity rule set		+ Install	View Details

[Back To Top](#) [Add Vendor](#)

Page Size: 10 | First | **1** | Last | Go to Settings to activate Windows.

Add COMODO ModSecurity Apache Rule Set

Use this interface to add a Vendor for ModSecurity.
For more information on how to create a Vendor, visit our [documentation](#).

Vendor Configuration URL

`https://waf.comodo.com/doc/meta_comodo_apache.yaml`

The file name should begin with meta_, followed by the short vendor identification code, and finally the .yaml extension.
Example: `https://example.com/example/meta_example.yaml`

[Load](#)

Vendor Name

Vendor Name: COMODO ModSecurity Apache Rule Set

Vendor Description: COMODO ModSecurity Rules for Apache

Vendor Documentation URL: https://waf.comodo.com

Vendor Report URL: https://waf.comodo.com/api/cpanel_feedback?source=0&rule_se

Path: /etc/apache2/conf.d/modsec_vendor_configs/comodo_apache

Save Cancel

CENTOS 7.6 kvm [Instance-1] v80.0.9 Load Averages: 0.08 0.17 0.13

Version "80.0.11" is available. Update Now

Successfully added COMODO ModSecurity Apache Rule Set

Vendor	Provider	Enabled	Updates	Sets Included
OWASP ModSecurity Core Rule Set V3.0	SpiderLabs OWASP V3 curated ModSecurity rule set		This vendor is not installed.	+ Install
COMODO ModSecurity Apache Rule Set	COMODO ModSecurity Rules for Apache	Third Party	On Off	32 / 32 Edit Delete

Search

Page Size: 10 First 1 Last

Success: You have successfully added "COMODO ModSecurity Apache Rule Set" to the vendor configuration list.

Back To Top [Add Vendor](#)

Page Size: 10 First 1 Last

Step 5 : Installing OWASP ModSecurity Core Rule Set V3.0 Vendor

The screenshot shows the WHM interface under the 'ModSecurity™ Vendors' section. A success message at the top right states: "Success: You have successfully added 'COMODO ModSecurity Apache Rule Set' to the vendor configuration list." Below this, a modal window asks if you want to install the "OWASP ModSecurity Core Rule Set V3.0" vendor. The vendor details shown are: Provider: Third Party, Status: On, Updates: 32 / 32, Sets Included: 32. At the bottom of the page, there is another success message: "Success: You have successfully installed the vendor: OWASP ModSecurity Core Rule Set V3.0".

Successfully installed the vendor : OWASP ModSecurity Core Rule Set V3.0

The screenshot shows the WHM interface under the 'ModSecurity™ Vendors' section. It lists two vendors: "COMODO ModSecurity Apache Rule Set" and "OWASP ModSecurity Core Rule Set V3.0". The "OWASP ModSecurity Core Rule Set V3.0" entry includes a note: "SpiderLabs OWASP curated ModSecurity rule set". Both entries show they are from a "Third Party" provider, are currently "On", and have 32 updates available. The status for both is "32 / 32".

Rules List by the two Vendors COMODO and OWASP

The screenshot shows the 'ModSecurity™ Tools' interface with the 'Rules List' tab selected. The left sidebar has a 'ModSecurity™ Tools' section highlighted. The main area displays a table with one row of data:

Status	Staging	Vendor	ID	Message	Actions
Enabled	Published	OWASP3	900990	<pre># -- [[End of setup]] # # The CRS checks the tx.crs_setup_version variable to ensure that the setup # has been loaded. If you are not planning to use this setup template, # you must manually set the tx.crs_setup_version variable before including # the CRS rules/* files. # # The variable is a numerical representation of the CRS version number. # E.g., v3.0.0 is represented as 300. # SecAction "id:900990, phase:1, nolog, pass, t:none, setvar:tx.crs_setup_version=302"</pre>	Copy Disable

The screenshot shows the 'ModSecurity™ Tools' interface with the 'Rules List' tab selected. The left sidebar has a 'ModSecurity™ Tools' section highlighted. The main area displays a table with four rows of data:

Status	Staging	Vendor	ID	Message	Actions
Enabled	Published	OWASP3	953011	<pre>SecAction "id:900990, phase:1, nolog, pass, t:none, setvar:tx.crs_setup_version=302" SecRule TX:PARANOIA_LEVEL "@lt 1" "phase:3,id:953011,nolog,pass,skipAfter:END-RESPONSE-953-DATA-LEAKAGES-PHP"</pre>	Copy Disable
Enabled	Published	OWASP3	953012	<pre>SecRule TX:PARANOIA_LEVEL "@lt 1" "phase:4,id:953012,nolog,pass,skipAfter:END-RESPONSE-953-DATA-LEAKAGES-PHP"</pre>	Copy Disable
Enabled	Published	OWASP3	953100	PHP Information Leakage	Copy Disable
Enabled	Published	OWASP3	953110	PHP source code leakage	Copy

Date	Host	Source	Severity	Status	Rule ID
2019-06-01 06:38:41	kaithanghu.ml	137.97.156.125	CRITICAL	403	210801: COMODO WAF: Request Indicates a Security Scanner Scanned the Site kaithanghu.ml F 2
2019-06-01 06:38:39	kaithanghu.ml	137.97.156.125	CRITICAL	403	211190: COMODO WAF: Remote File Access Attempt kaithanghu.ml F 2
2019-06-01 06:38:35	kaithanghu.ml	137.97.156.125	CRITICAL	403	210801: COMODO WAF: Request Indicates a Security Scanner Scanned the Site kaithanghu.ml F 2

Testing Vulnerabilities with sqlmap kali Linux Tool

```

File Edit View Search Terminal Help
[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program

[*] starting at 02:38:26

[02:38:32] [INFO] testing connection to the target URL
[02:38:35] [WARNING] the web server responded with an HTTP error code (403) which could interfere with the results of the tests
[02:38:35] [INFO] checking if the target is protected by some kind of WAF/IPS/IDS
[02:38:40] [INFO] testing if the target URL content is stable
[02:38:41] [INFO] target URL content is stable
[02:38:41] [CRITICAL] no parameter(s) found for testing in the provided data (e.g. GET parameter 'id' in 'www.site.com/index.php?id=1')
[02:38:41] [WARNING] HTTP error codes detected during run:
403 (Forbidden) - 3 times

[*] shutting down at 02:38:41
root@kali:~# 

```

Here we use ModSecurity tool, and we get the results given below

Date	Host	Source	Severity	Status	Rule ID
2019-06-01 06:38:41	kaithanghu.ml	137.97.156.125	CRITICAL	403	210801: COMODO WAF: Request Indicates a Security Scanner Scanned the Site kaithanghu.ml F 2
2019-06-01 06:38:39	kaithanghu.ml	137.97.156.125	CRITICAL	403	211190: COMODO WAF: Remote File Access Attempt kaithanghu.ml F 2
2019-06-01 06:38:35	kaithanghu.ml	137.97.156.125	CRITICAL	403	210801: COMODO WAF: Request Indicates a Security Scanner Scanned the Site kaithanghu.ml F 2

P6.4 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).
10. Insecure configuration management.

6.5 KALI LINUX TOOLS

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 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 possibilitiesDownload and open themole.exe file.

Once a command-line interface is opened, use the following commands

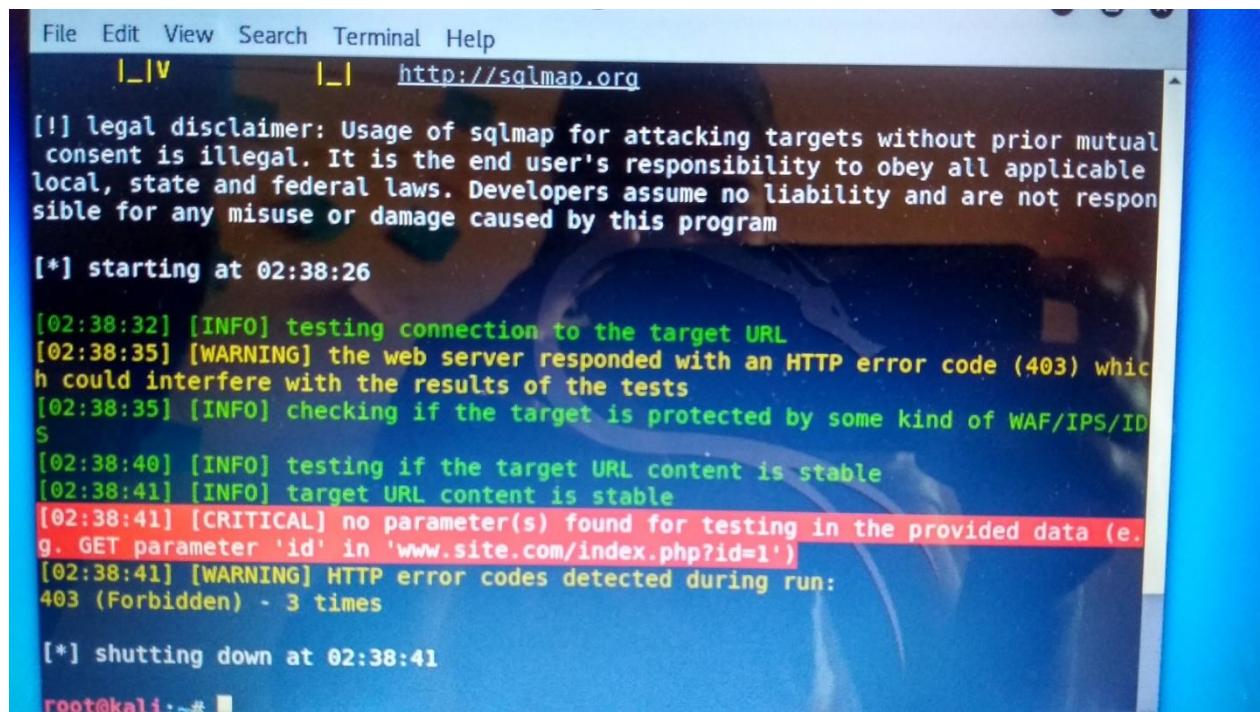
url http://www.yourwebsite.com/page.php?id=numeric_value

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

Testing with The 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.

- Once a command-line interface is opened, use the following commands
- url http://www.yourwebsite.com/page.php?id=numeric_value



The screenshot shows a terminal window with the following content:

```
File Edit View Search Terminal Help
[...]
[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual
consent is illegal. It is the end user's responsibility to obey all applicable
local, state and federal laws. Developers assume no liability and are not responsible
for any misuse or damage caused by this program
[*] starting at 02:38:26
[02:38:32] [INFO] testing connection to the target URL
[02:38:35] [WARNING] the web server responded with an HTTP error code (403) which could interfere with the results of the tests
[02:38:35] [INFO] checking if the target is protected by some kind of WAF/IPS/IDS
[02:38:40] [INFO] testing if the target URL content is stable
[02:38:41] [INFO] target URL content is stable
[02:38:41] [CRITICAL] no parameter(s) found for testing in the provided data (e.g. GET parameter 'id' in 'www.site.com/index.php?id=1')
[02:38:41] [WARNING] HTTP error codes detected during run:
403 (Forbidden) - 3 times
[*] shutting down at 02:38:41
root@kali:~#
```

P6.6 Server Hardening

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.

Hardening means a soft surface or material and making changes to its 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 are 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.

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/shm .

part 7

Technology Frameworks

P7.1 ASP.NET MVC

Introduction

ASP.NET MVC is an open-source software from Microsoft. Its web development framework 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.

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

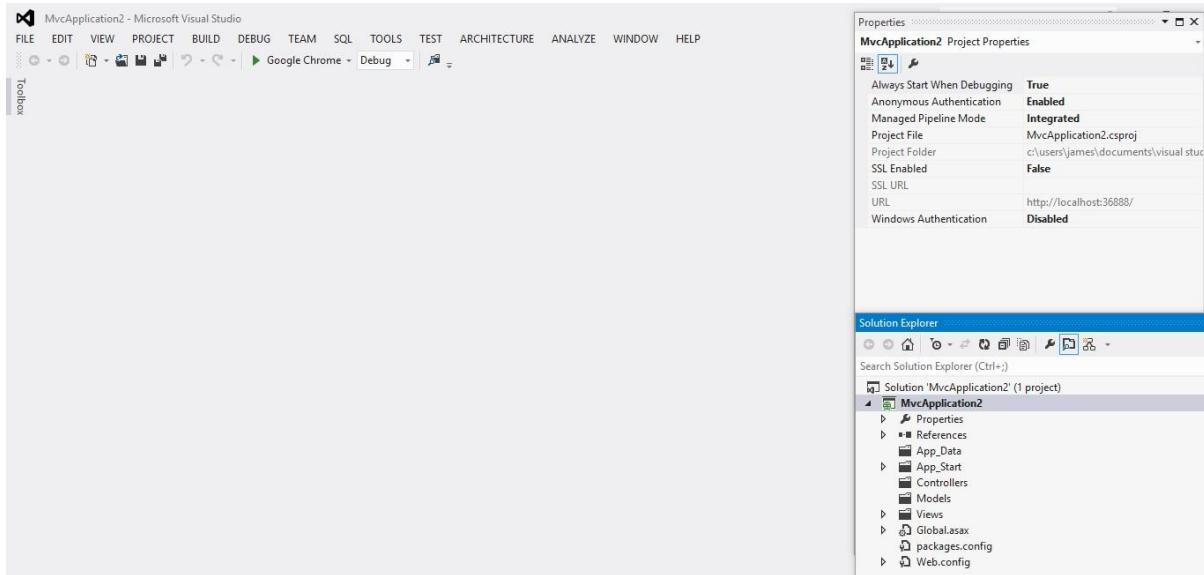
- **The Model** – A set of classes that describes the data you are working with as well as the business logic.
- **The View** – Defines how the application's UI will be displayed. It is a pure HTML, which decides how the UI is going to look like.
- **The Controller** – A set of classes that handles communication from the user, overall application flow, and application-specific logic.

Implementation of ASP.Net MVC

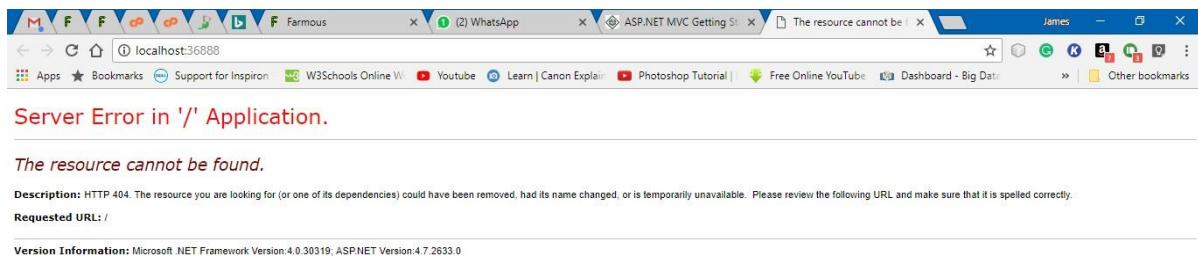
- Download and install Microsoft Visual Studio 2012 and onwards
- Create an ASP.Net MVC Application. Open the Visual Studio. Click File>New > Project menu option. A new Project dialog opens.

From the left pane, select Templates → Visual C# → Web.

- In the middle pane, select ASP.NET Web Application.
- Enter the project name, MVCAplication2, in the Name field and click ok to continue. You will see the following dialog which asks you to set the initial content for the ASP.NET project.



- Run this application from Debug > Start Debugging menu option and you will see a **404 Not Found** Error.



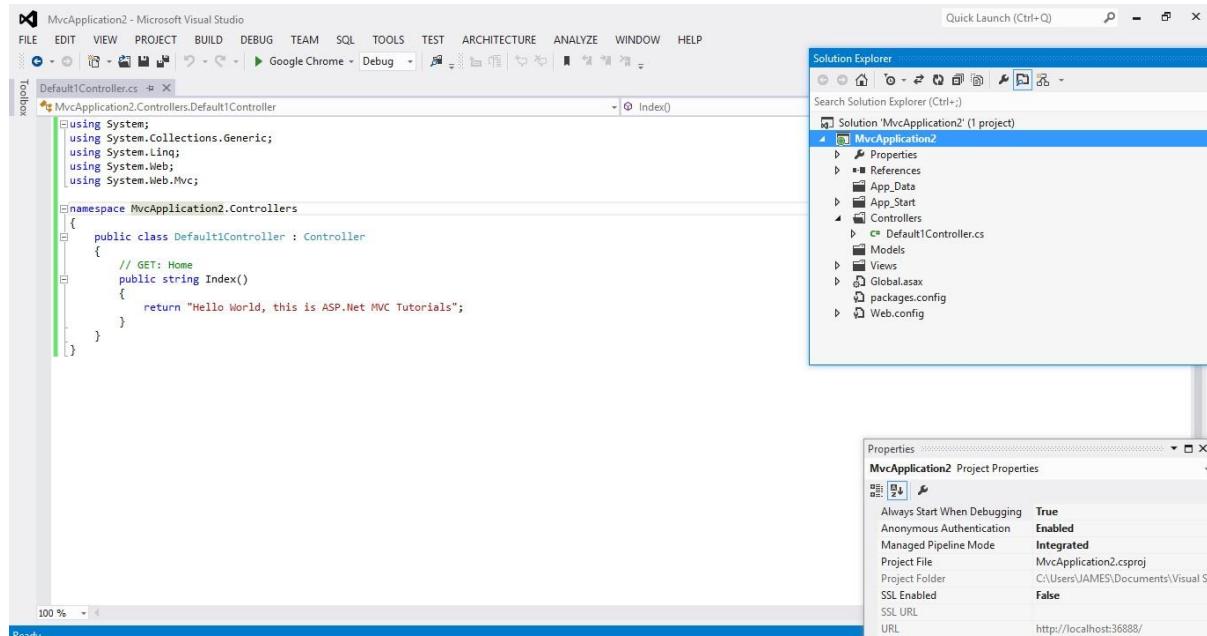
Add Controller

- To remove the 404 Not Found error, we need to add a controller, which handles all the incoming requests.
- To add a controller, right-click on the controller folder in the solution explorer and select Add > Controller.

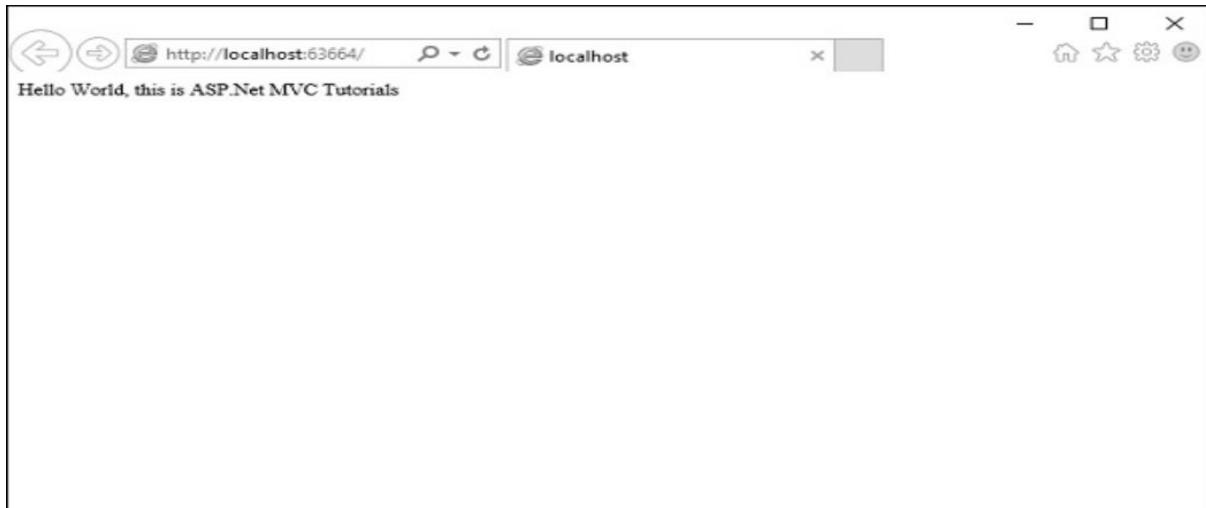
Select the MVC 5 Controller – Empty option and click ‘Add’ button. The Add Controller dialog will appear.

- Set a name to Controller and click the Add button.

To make this a working example, let's modify the controller class by changing the action method called **Index** using the following code.



- Run this application from Debug



P7.2 Angular

Angular is a very powerful JavaScript Framework. It is used in Single Page Application (SPA) projects. It extends HTML DOM with additional attributes and makes it more responsive to user actions. Angular is open source, completely free, and used by thousands of developers around the world. It is licensed under the Apache license version 2.0.

Angular is an open-source web application framework. It was originally developed in 2009 by Misko Hevery and Adam Abrons. It is now maintained by Google. Its latest version is 1.2.21.

Definition of AngularJS is as follows –

Angular is a structural framework for dynamic web applications. It lets you use HTML as your template language and lets you extend HTML's syntax to express your application components clearly and succinctly. Its data binding and dependency injection eliminate much of the code you currently have to write. And it all happens within the browser, making it an ideal partner with any server technology.

General Features

The general features of Angular are as follows –

- Angular is an efficient framework that can create Rich Internet Applications (RIA).
- Angular provides developers an options to write client side applications using JavaScript in a clean Model View Controller (MVC) way.
- Applications written in Angular are cross-browser compliant. Angular automatically handles JavaScript code suitable for each browser.
- Angular is open source, completely free, and used by thousands of developers around the world. It is licensed under the Apache license version 2.0.

Overall, Angular is a framework to build large scale, high-performance, and easy to maintain web applications.

Core Features

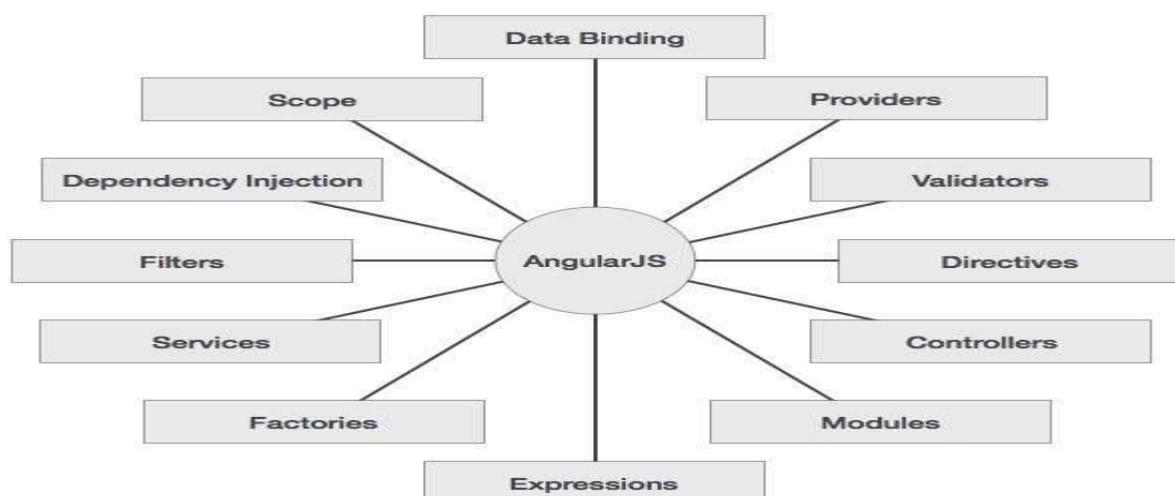
The core features of Angular are as follows –

- **Data-binding** – It is the automatic synchronization of data between model and view components.
- **Scope** – These are objects that refer to the model. They act as a glue between controller and view.

- **Controller** – These are JavaScript functions bound to a particular scope.
- **Services** – AngularJS comes with several built-in services such as \$http to make a XMLHttpRequests. These are singleton objects which are instantiated only once in app.
- **Filters** – These select a subset of items from an array and returns a new array.
- **Directives** – Directives are markers on DOM elements such as elements, attributes, css, and more. These can be used to create custom HTML tags that serve as new, custom widgets. Angular has built-in directives such as ngBind, ngModel, etc.
- **Templates** – These are the rendered view with information from the controller and model. These can be a single file (such as index.html) or multiple views in one page using *partials*.
- **Routing** – It is concept of switching views.
- **Model View Whatever** – MVW is a design pattern for dividing an application into different parts called Model, View, and Controller, each with distinct responsibilities. Angular does not implement MVC in the traditional sense, but rather something closer to MVVM (Model-View-ViewModel). The Angular team refers it humorously as Model View Whatever.
- **Deep Linking** – Deep linking allows to encode the state of application in the URL so that it can be bookmarked. The application can then be restored from the URL to the same state.
- **Dependency Injection** – Angular has a built-in dependency injection subsystem that helps the developer to create, understand, and test the applications easily.

Concepts

The following diagram depicts some important parts of Angular which we will discuss in detail in the subsequent chapters.



Advantages of Angular

The advantages of Angular are –

- It provides the capability to create Single Page Application in a very clean and maintainable way.
- It provides data binding capability to HTML. Thus, it gives user a rich and responsive experience.
- Angular code is unit testable.
- Angular uses dependency injection and make use of separation of concerns.
- Angular provides reusable components.
- With Angular, the developers can achieve more functionality with short code.
- In Angular, views are pure html pages, and controllers written in JavaScript do the business processing.

On the top of everything, Angular applications can run on all major browsers and smart phones, including Android and iOS based phones/tablets.

Disadvantages of Angular

Though Angular comes with a lot of merits, here are some points of concern –

- **Not Secure** – Being JavaScript only framework, application written in Angular are not safe. Server side authentication and authorization is must to keep an application secure.
- **Not degradable** – If the user of your application disables JavaScript, then nothing would be visible, except the basic page.

Angular Directives

The Angular framework can be divided into three major parts –

- **ng-app** – This directive defines and links an Angular application to HTML.
- **ng-model** – This directive binds the values of Angular application data to HTML input controls.
- **ng-bind** – This directive binds the Angular application data to HTML tags.
- **CDN access** – You also have access to a CDN. The CDN gives you access to regional data centers. In this case, the Google host. The CDN transfers the responsibility of hosting files from your own servers to a series of external ones. It also offers an advantage that if the visitor of your web page has already downloaded a copy of AngularJS from the same CDN, there is no need to re-download it.

Example

An example using Angular library. Create an HTML file *myfirstexample.html*

```
<!doctype html>
<html>
  <head>
    <script src =
"https://ajax.googleapis.com/ajax/libs/angularjs/1.5.2/angular.min.js"></script>
  </head>

  <body ng-app = "myapp">
    <div ng-controller = "HelloController" >
      <h2>Welcome to {{helloTo.title}}</h2>
    </div>

    <script>
      angular.module("myapp", [])
        .controller("HelloController", function($scope) {
          $scope.helloTo = {};
          $scope.helloTo.title = "AngularJS";
        });
    </script>

  </body>
</html>
```

Include Angular

We include the Angular file in the HTML page so that we can use it

```
<head>
```

```
<script src = "https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js">
</script>

</head>
```

You can check the latest version of Angular on its official website.

Point to Angular app

It is required to tell which part of HTML contains the Angular app. You can do this by adding the ng-app attribute to the root HTML element of the Angular app. You can either add it to the html element or the body element as shown below –

```
<body ng-app = "myapp">
</body>
```

View

```
<div ng-controller = "HelloController" >
  <h2>Welcome to {{helloTo.title}}</h2>
</div>
```

ng-controller tells AngularJS which controller to use with this view. *helloTo.title* tells Angular to write the model value named helloTo.title in HTML at this location.

Controller

```
<script>
  angular.module("myapp", [])
    .controller("HelloController", function($scope) {
      $scope.helloTo = {};
      $scope.helloTo.title = "AngularJS";
    });
</script>
```

This code registers a controller function named HelloController in the angular module named *myapp*. We will study more about modules and controllers in their respective chapters. The controller function is registered in angular via the angular.module(...).controller(...) function call.

The \$scope parameter model is passed to the controller function. The controller function adds a *helloTo* JavaScript object, and in that object it adds a *title* field.

Execution

Save the above code as *myfirstexample.html* and open it in any browser. You get to see the following output –

Welcome to Angular

What happens when the page is loaded in the browser ? Let us see –

- HTML document is loaded into the browser, and evaluated by the browser.
- Angular JavaScript file is loaded, the angular *global* object is created.
- The JavaScript which registers controller functions is executed.
- Next, Angular scans through the HTML to search for Angular apps as well as views.
- Once the view is located, it connects that view to the corresponding controller function.
- Next, Angular executes the controller functions.
- It then renders the views with data from the model populated by the controller. The page is now ready.

Model View Controller or MVC as it is popularly called, is a software design pattern for developing web applications. A Model View Controller pattern is made up of the following three parts –

- **Model** – It is the lowest level of the pattern responsible for maintaining data.
- **View** – It is responsible for displaying all or a portion of the data to the user.
- **Controller** – It is a software Code that controls the interactions between the Model and View.

MVC is popular because it isolates the application logic from the user interface layer and supports separation of concerns. The controller receives all requests for the application and then works with the model to prepare any data needed by the view. The view then uses the data prepared by the controller to generate a final presentable response.

The Model

The model is responsible for managing application data. It responds to the request from view and to the instructions from controller to update itself.

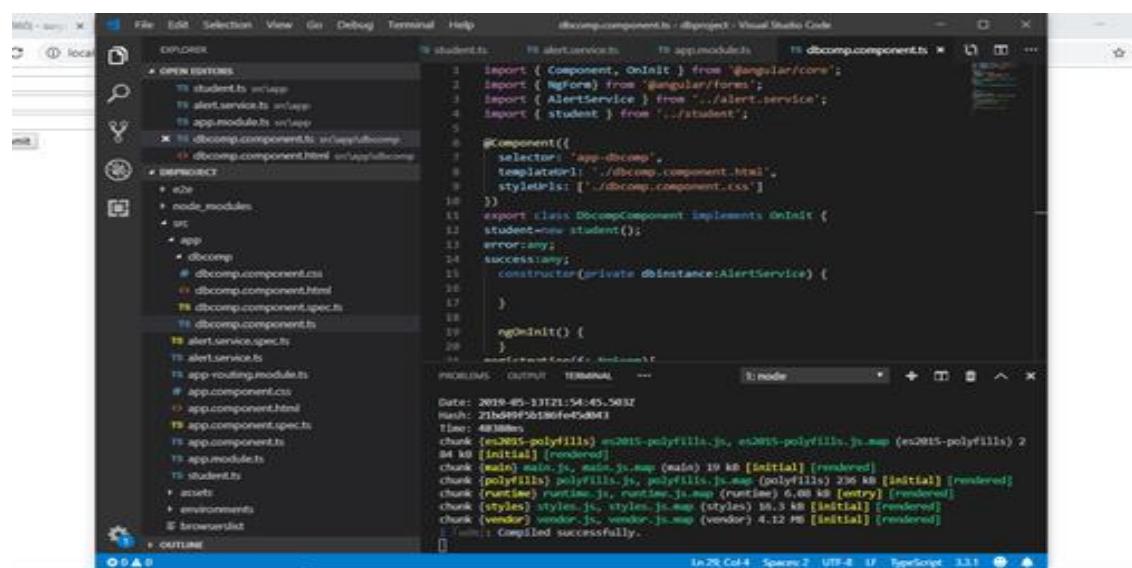
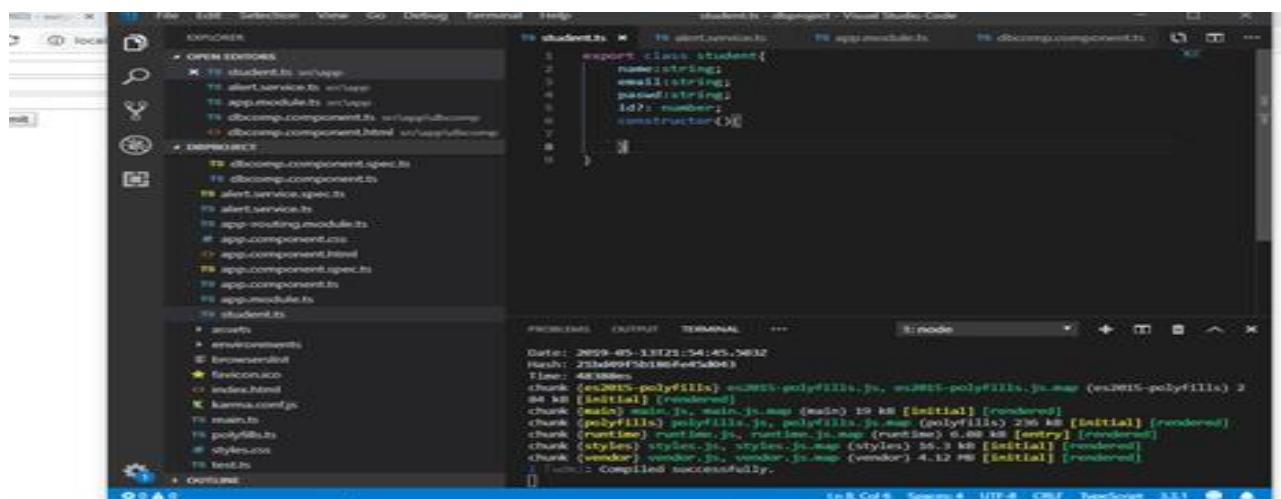
The View

A presentation of data in a particular format, triggered by the controller's decision to present the data. They are script-based template systems such as JSP, ASP, PHP and very easy to integrate with AJAX technology.

The Controller

The controller responds to user input and performs interactions on the data model objects. The controller receives input, validates it, and then performs business operations that modify the state of the data model.

Angular is a MVC based framework.





P7.3 Android

Android is an open source and Linux-based operating system for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies. Android programming is based on Java programming language.

Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.

The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 where as the first commercial version, Android 1.0, was released in September 2008.

On June 27, 2012, at the Google I/O conference, Google announced the next Android version, **4.1 Jelly Bean**. Jelly Bean is an incremental update, with the primary aim of improving the user interface, both in terms of functionality and performance.

The source code for Android is available under free and open source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.

Features of Android

Android is a powerful operating system competing with Apple 4GS and supports great features. Few of them are listed below –

Sl.No.	Feature & Description
1	<p>Beautiful UI</p> <p>Android OS basic screen provides a beautiful and intuitive user interface.</p>
2	<p>Connectivity</p> <p>GSM/EDGE, IDEN, CDMA, EV-DO, UMTS, Bluetooth, Wi-Fi, LTE, NFC and WiMAX.</p>
3	<p>Storage</p> <p>SQLite, a lightweight relational database, is used for data storage purposes.</p>
4	<p>Media support</p> <p>H.263, H.264, MPEG-4 SP, AMR, AMR-WB, AAC, HE-AAC, AAC 5.1, MP3, MIDI, Ogg Vorbis, WAV, JPEG, PNG, GIF, and BMP.</p>
5	<p>Messaging</p> <p>SMS and MMS</p>
6	<p>Web browser</p> <p>Based on the open-source WebKit layout engine, coupled with Chrome's V8 JavaScript engine supporting HTML5 and CSS3.</p>
7	<p>Multi-touch</p> <p>Android has native support for multi-touch which was initially made available in handsets such as the HTC Hero.</p>
8	<p>Multi-tasking</p> <p>User can jump from one task to another and same time various application can run simultaneously.</p>

9	Resizable widgets Widgets are resizable, so users can expand them to show more content or shrink them to save space.
10	Multi-Language Supports single direction and bi-directional text.
11	GCM Google Cloud Messaging (GCM) is a service that lets developers send short message data to their users on Android devices, without needing a proprietary sync solution.
12	Wi-Fi Direct A technology that lets apps discover and pair directly, over a high-bandwidth peer-to-peer connection.
13	Android Beam A popular NFC-based technology that lets users instantly share, just by touching two NFC-enabled phones together.

Android Applications

Android applications are usually developed in the Java language using the Android Software Development Kit.

Once developed, Android applications can be packaged easily and sold out either through a store such as **Google Play, SlideME, Opera Mobile Store, Mobango, F-droid** and the **Amazon Appstore**.

Android powers hundreds of millions of mobile devices in more than 190 countries around the world. It's the largest installed base of any mobile platform and growing fast. Every day more than 1 million new Android devices are activated worldwide.

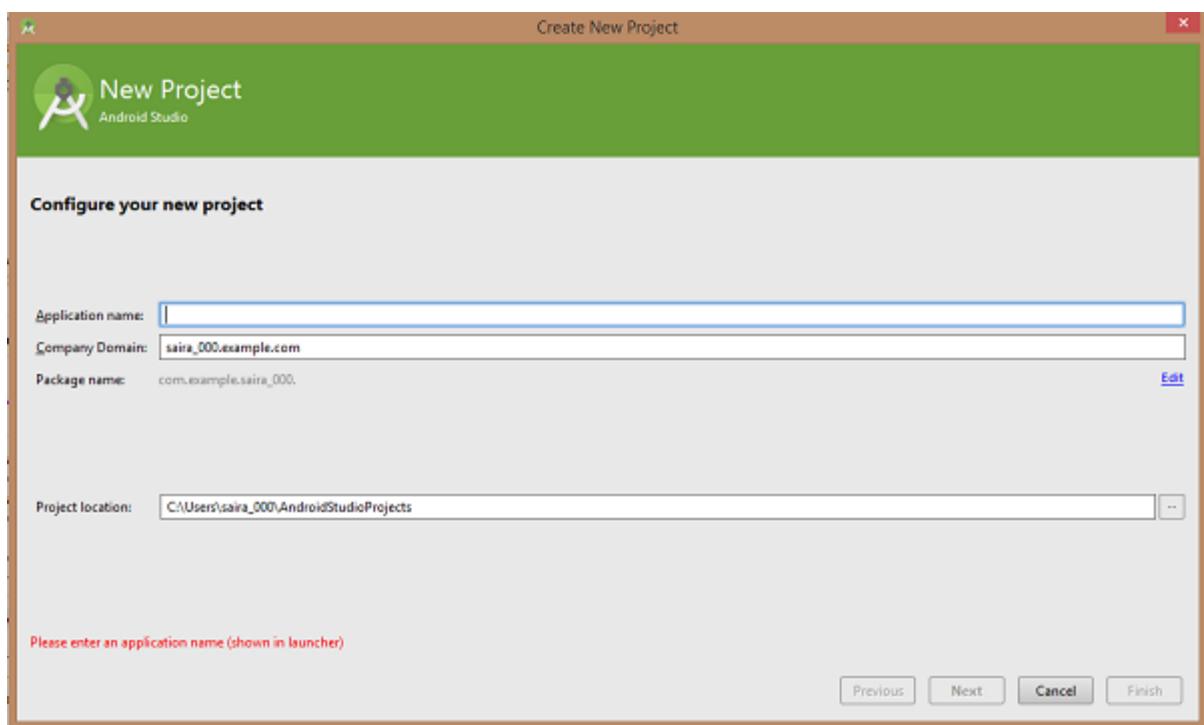
We will start from environment setup for Android application programming and then drill down to look into various aspects of Android applications.

Create Android Application

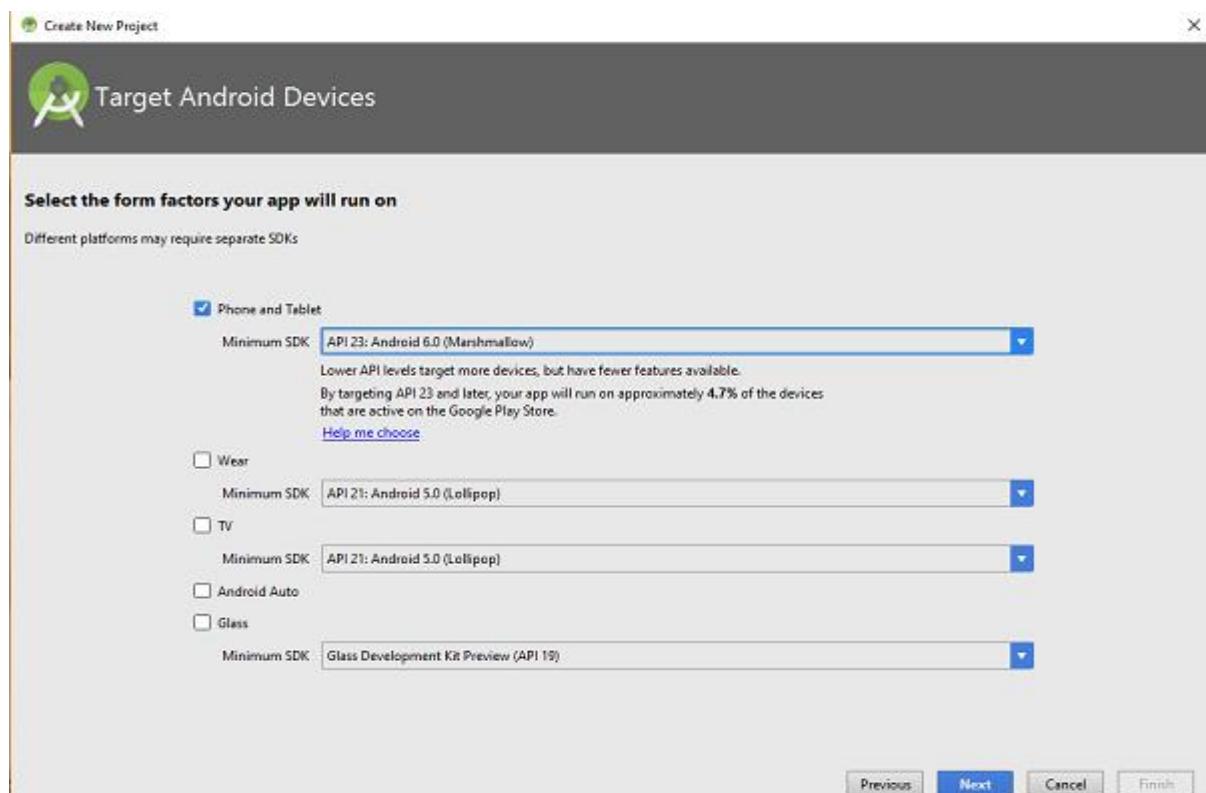
The first step is to create a simple Android Application using Android studio. When you click on Android studio icon, it will show screen as shown below



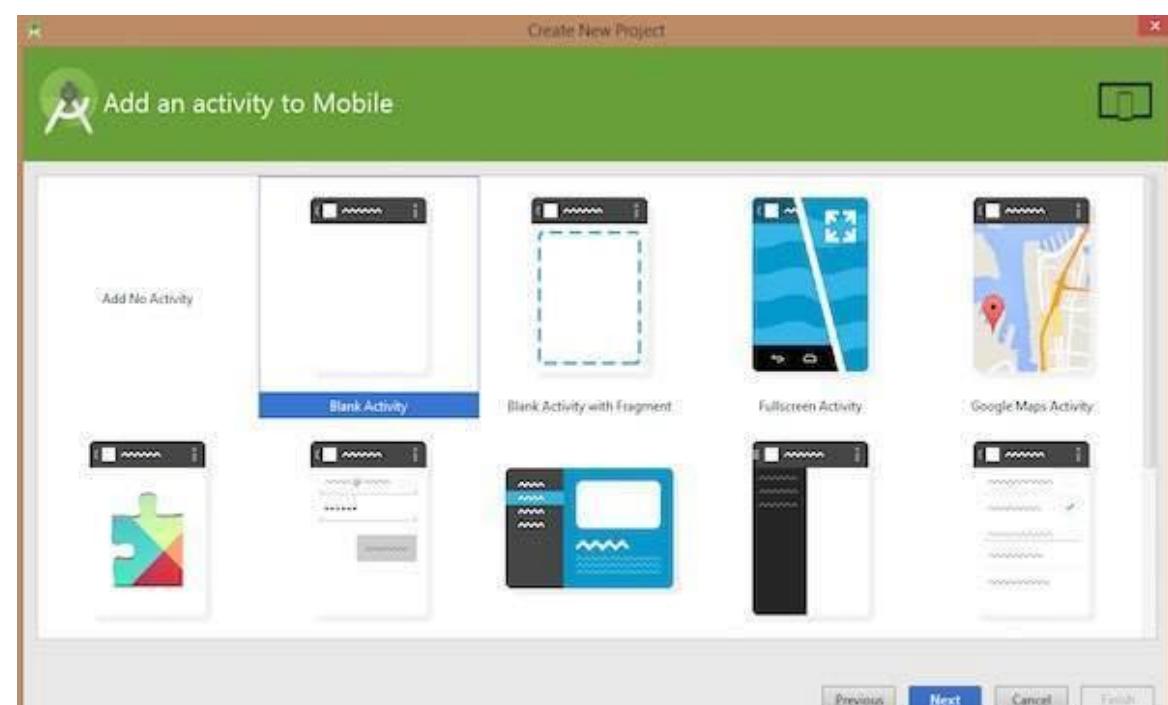
You can start your application development by calling start a new android studio project in a new installation frame should ask Application name, package information and location of the project.—



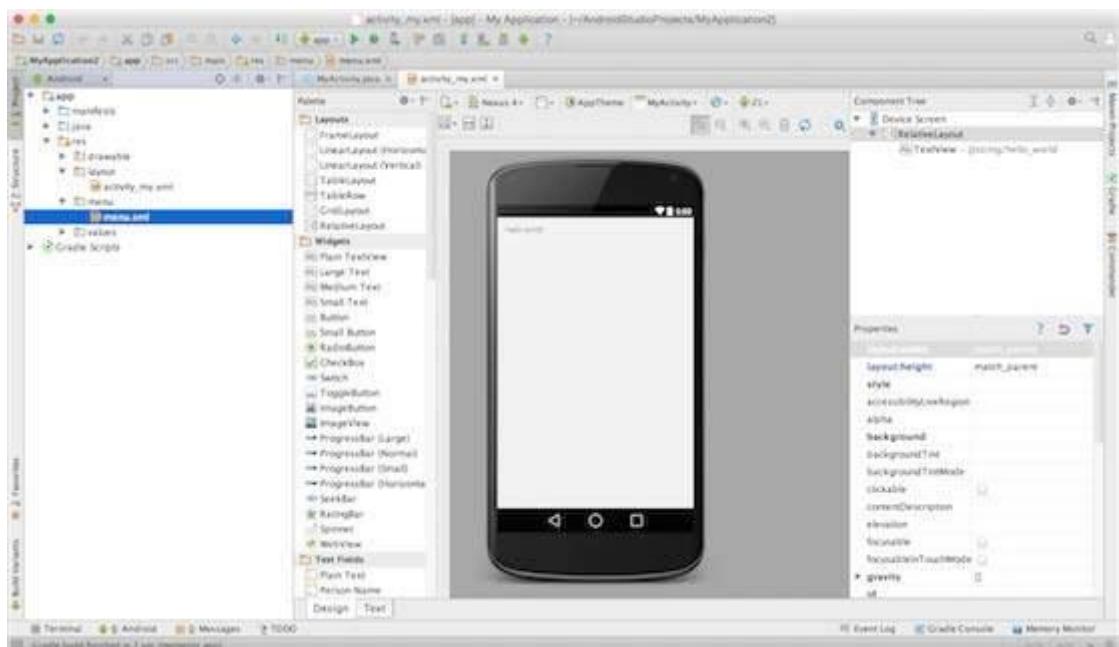
After entered application name, it going to be called select the form factors your application runs on, here need to specify Minimum SDK as API23: Android 6.0(Mashmallow) –



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.



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);
    }
}
```

Here, *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 as following file –

```
<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, which 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>
```

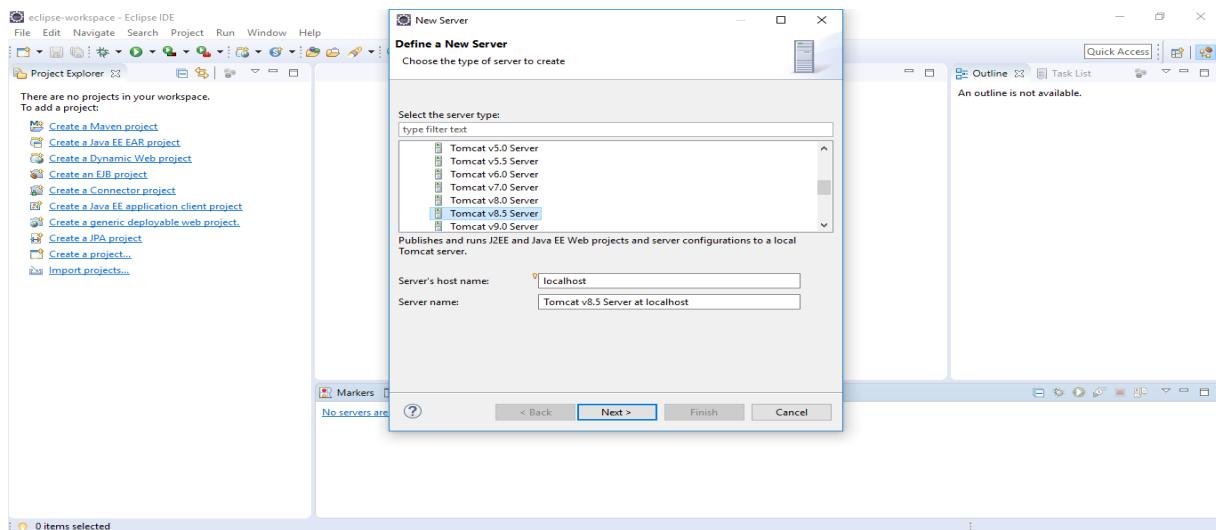
This is an example of simple *RelativeLayout*. The *TextView* is an Android control used to build the GUI and it has various attributes like *android:layout_width*, *android:layout_height* etc which are being used to set its width and height etc.. The *@string* refers to the strings.xml file located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

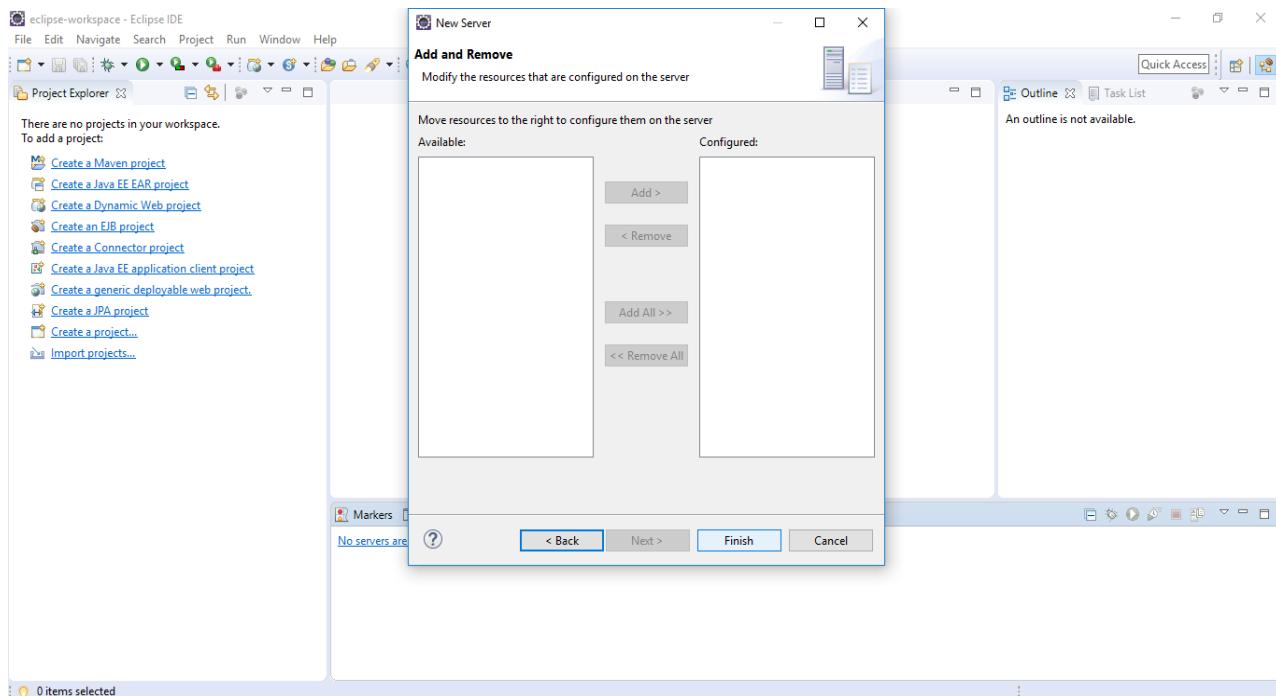
P7.4 JAVA SPRING

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.

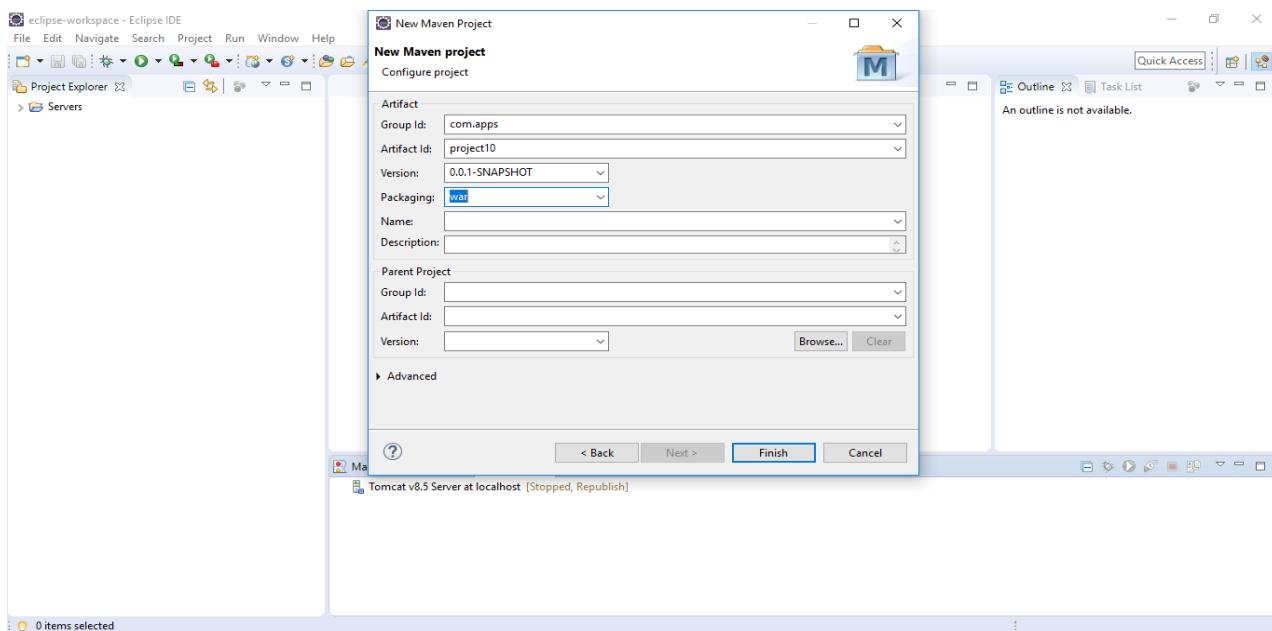
Program Implementation

Step 1: Install JDK 1.8 and set Tomcat server

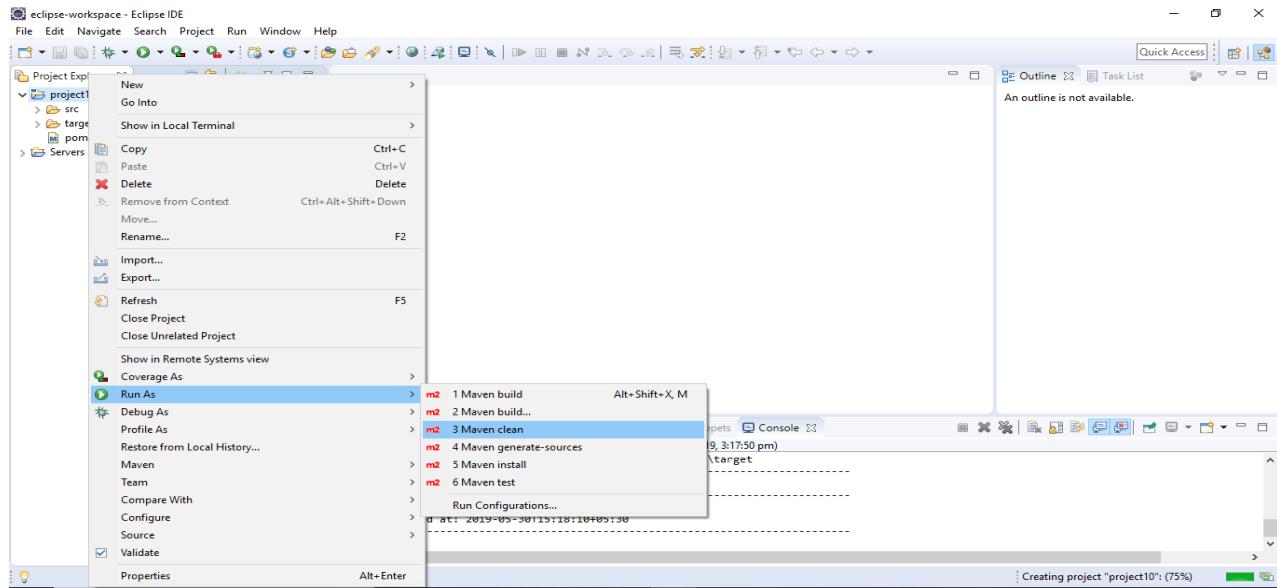




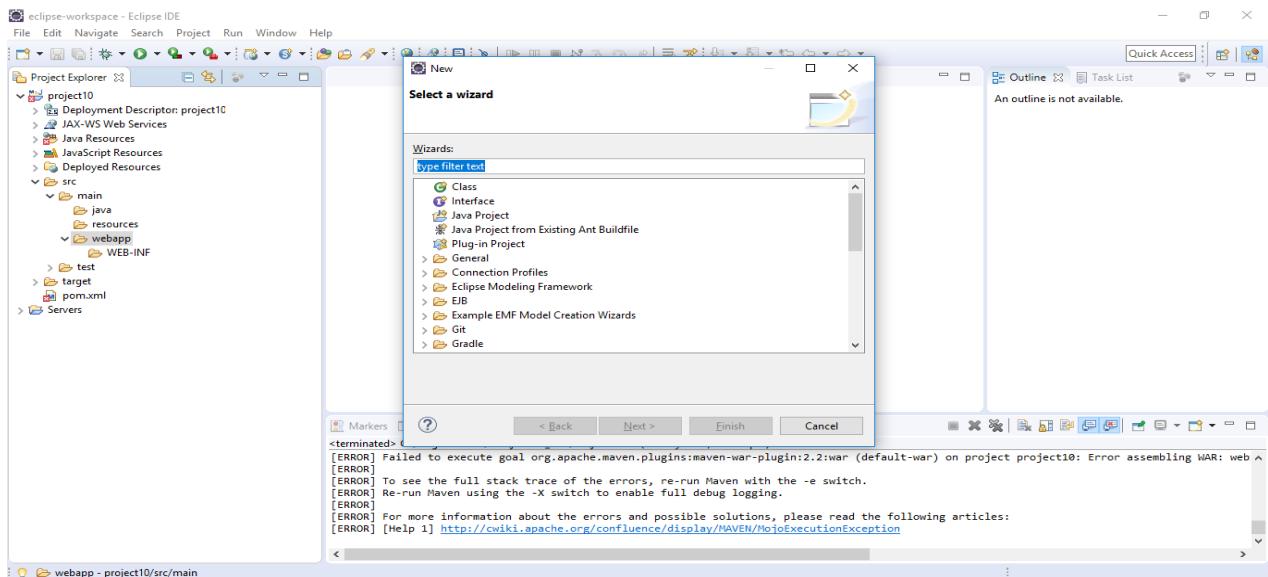
Step 2: Start Maven project – file-> new -> maven



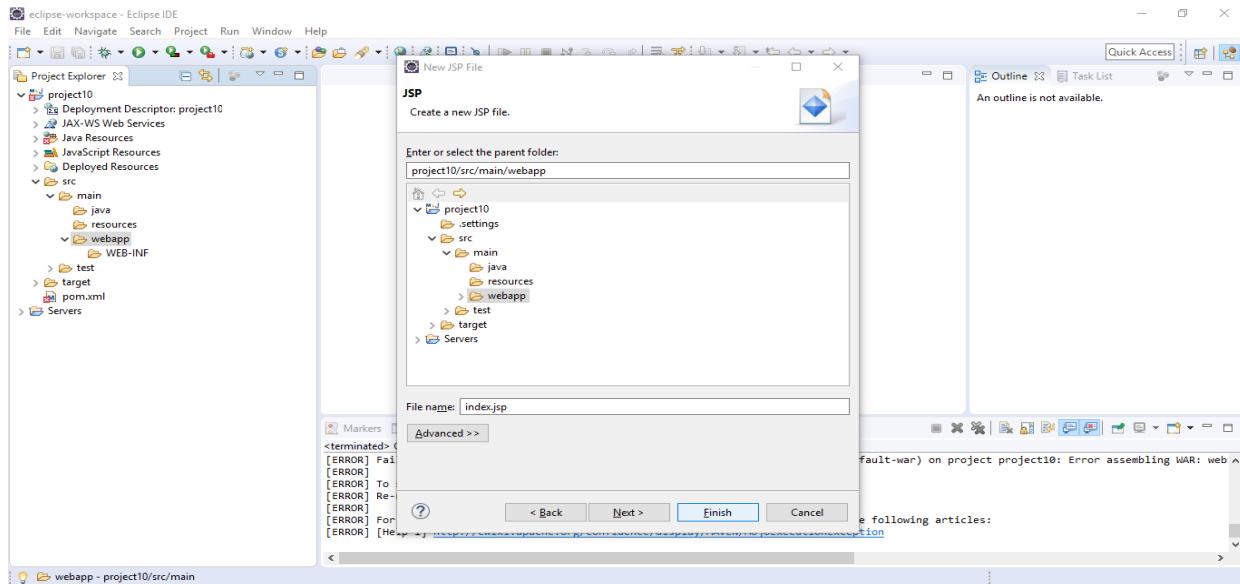
Step 3: Build your maven project



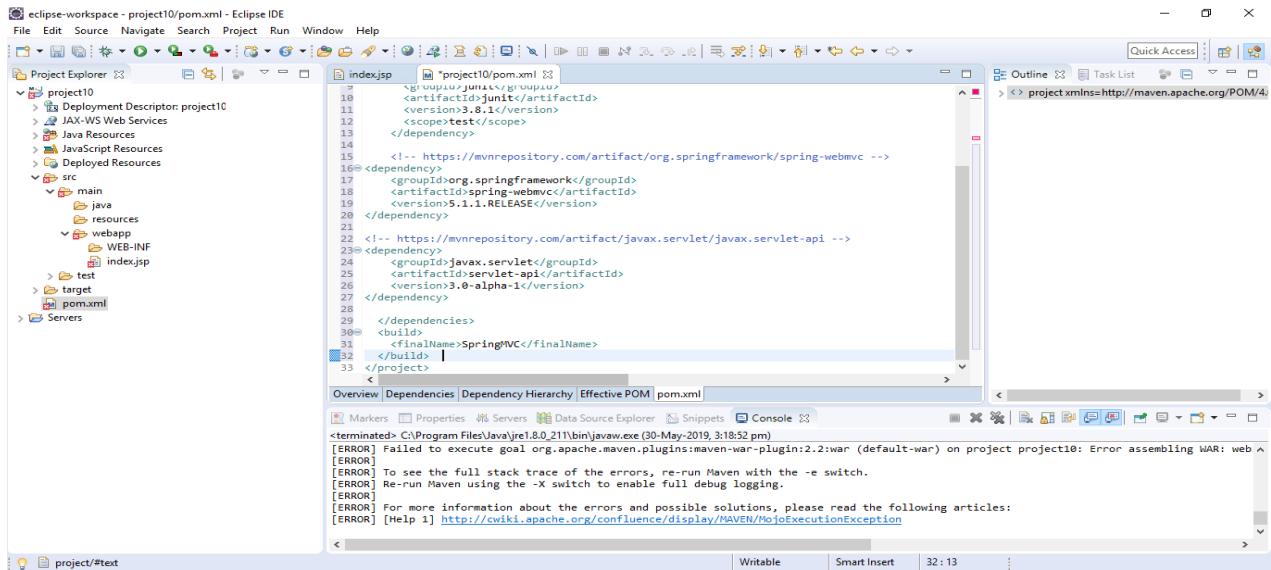
Step 4: Add a folder in webapp and the folder name is WEB-INF



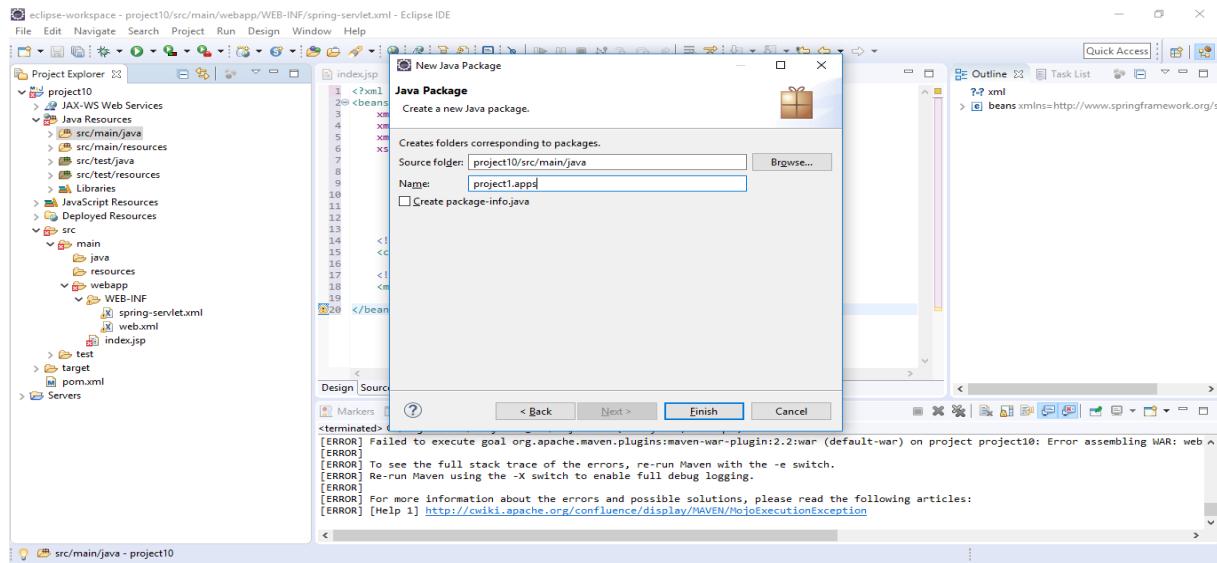
Step 5: Click WEB-INF -> Ctrl+N -> select jsp file -> name the file with index.jsp



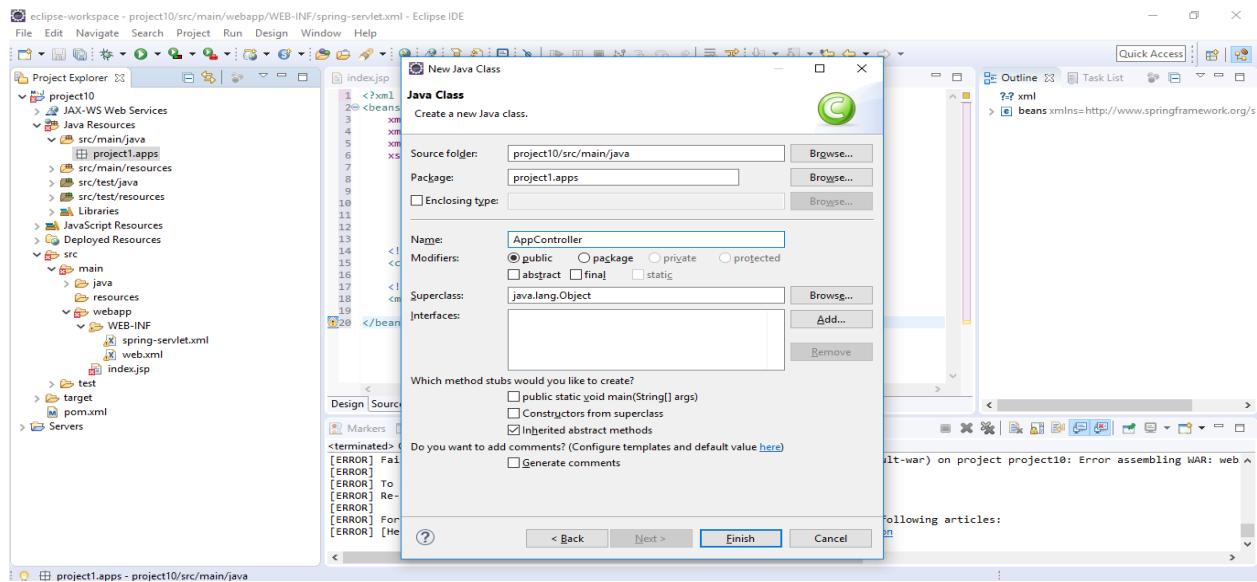
Step 6: Set Pom file



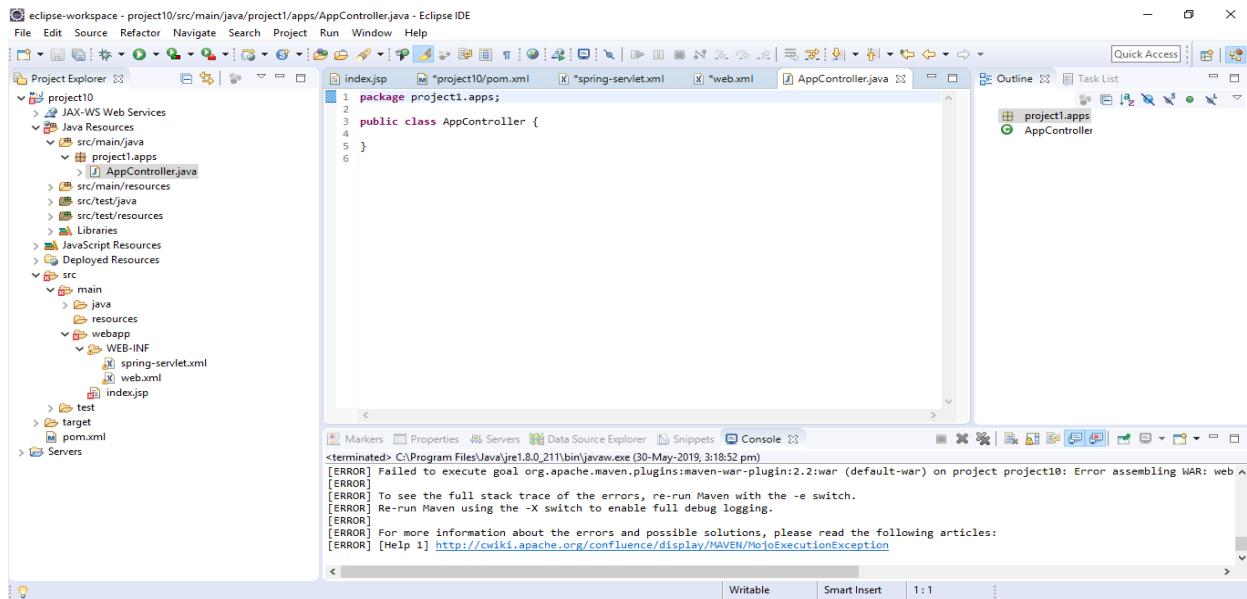
Step 7: Create java packages



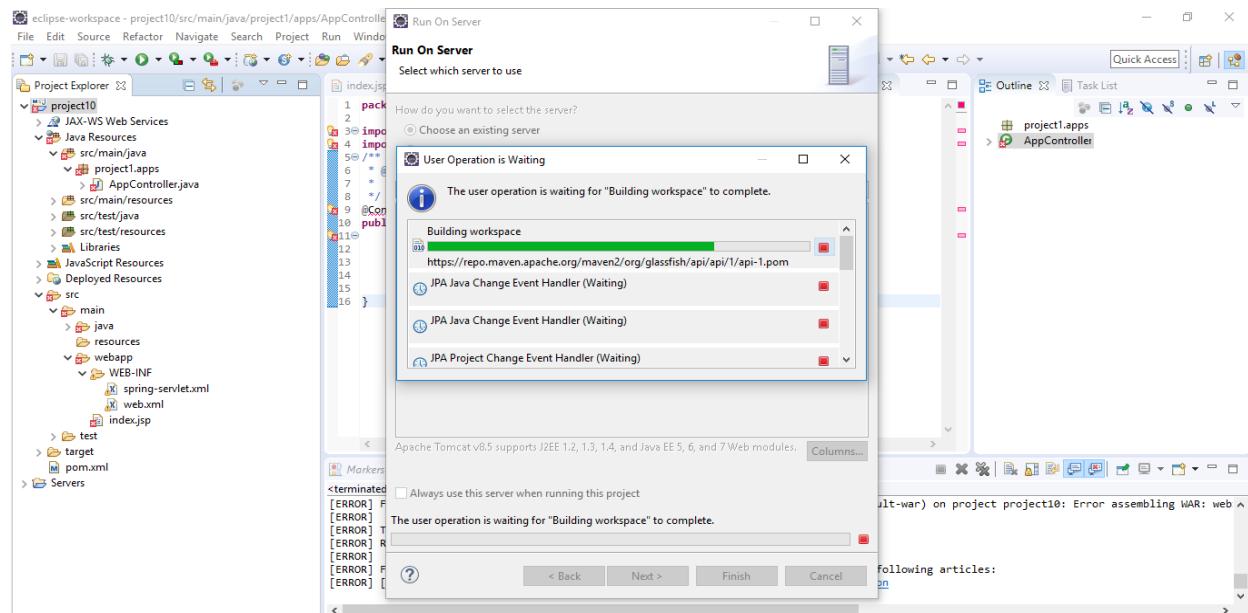
Step 8: Create java class



Step 9: Set AppController



Step 10: Run your project



P7.5 Laravel

Laravel is a powerful MVC PHP framework, designed for developers who need a simple and elegant toolkit to create full-featured web applications. Laravel was created by Taylor Otwell.

Laravel is an open-source PHP framework, which is robust and easy to understand. It follows a model-view-controller design pattern. Laravel reuses the existing components of different frameworks which helps in creating a web application. The web application thus designed is more structured and pragmatic.

Laravel offers a rich set of functionalities which incorporates the basic features of PHP frameworks like CodeIgniter, Yii and other programming languages like Ruby on Rails. Laravel has a very rich set of features which will boost the speed of web development.

If you are familiar with Core PHP and Advanced PHP, Laravel will make your task easier. It saves a lot time if you are planning to develop a website from scratch. Moreover, a website built in Laravel is secure and prevents several web attacks.

Advantages of Laravel

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 other 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, resulting in add-on features in Laravel 5.1 (latest version of Laravel).

Features of Laravel

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 Mapping and ActiveRecord 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**.

Redis

Laravel uses **Redis** to connect to an existing session and general-purpose cache. Redis interacts with session directly.

Queues

Laravel includes queue services like emailing large number of users or a specified **Cron** job. These queues help in completing tasks in an easier manner without waiting for the previous task to be completed.

Event and Command Bus

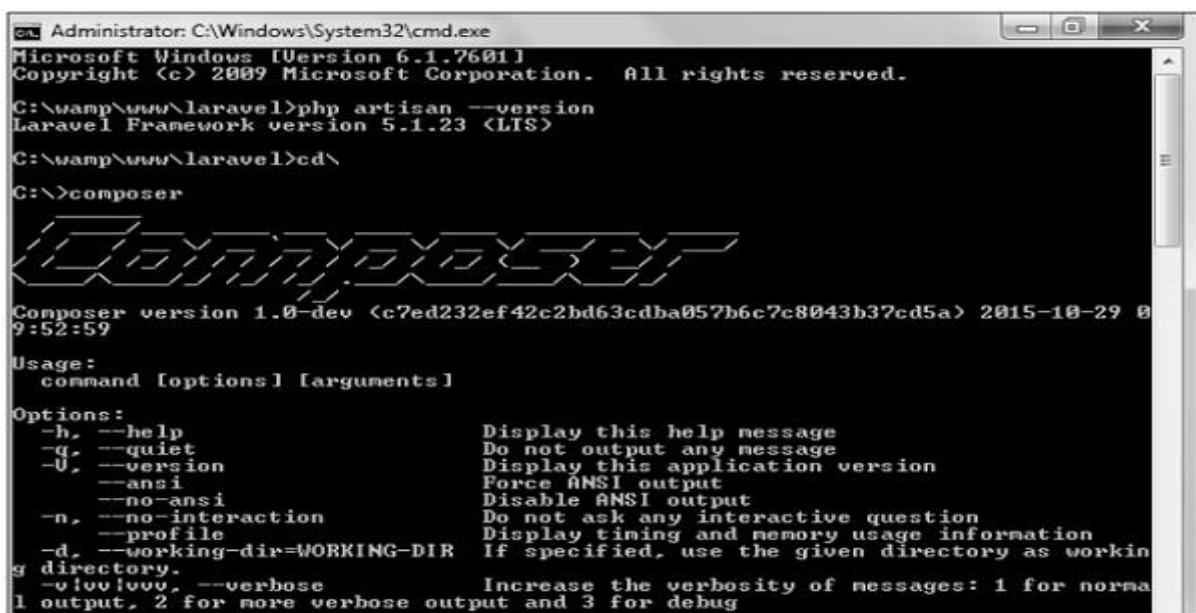
Laravel 5.1 includes **Command Bus** which helps in executing commands and dispatch events in a simple way. The commands in Laravel act as per the application's lifecycle.

For managing dependencies, Laravel uses **composer**. Make sure you have a Composer installed on your system before you install Laravel. You will have to follow the steps given below for installing Laravel onto your system –

Step 1 – Visit the following URL and download composer to install it on your system.

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

Step 2 – After the Composer is installed, check the installation by typing the Composer command in the command prompt as shown in the following screenshot.



```
Administrator: C:\Windows\System32\cmd.exe
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
The logo is a decorative graphic made of small squares arranged in a grid pattern, forming a stylized arrow shape pointing to the right.

Composer version 1.0-dev (c7ed232ef42c2bd63cdba057b6c7c8043b37cd5a) 2015-10-29 09:52:59

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
  -n, --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, --verbose         Increase the verbosity of messages: 1 for normal output, 2 for more verbose output and 3 for debug
```

Step 3 – Create a new directory anywhere in your system for your new Laravel project. After that, move to path where you have created the new directory and type the following command there to install Laravel.

```
composer create-project laravel/laravel --prefer-dist
```

Now, we will focus on installation of version 5.7. In Laravel version 5.7, you can install the complete framework by typing the following command –

```
composer create-project laravel/laravel test dev-develop
```

The output of the command is as shown below

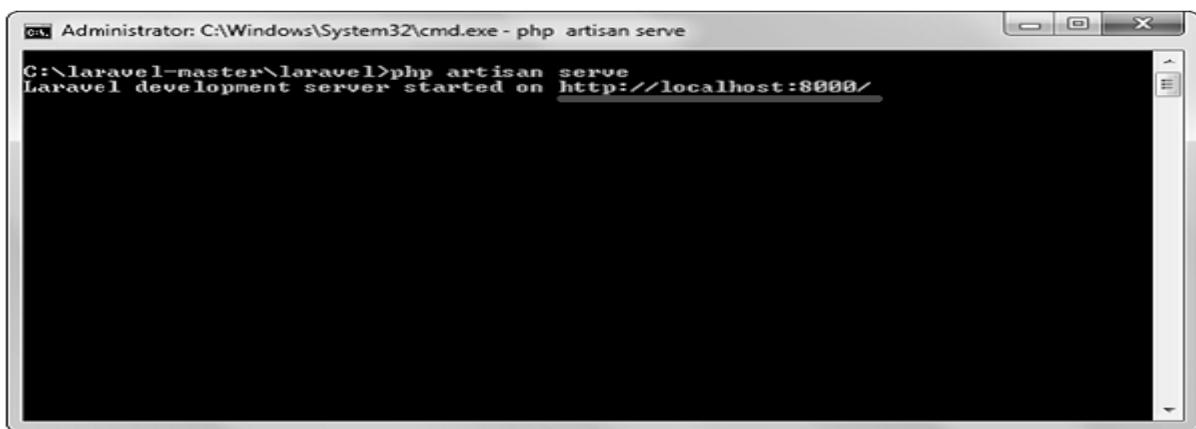
```
→ code composer create-project laravel/laravel test dev-develop
Installing laravel/laravel (dev-develop d6acad21cb2288713d9c09a31f9b4ab86f116039)
  - Installing laravel/laravel (dev-develop develop): Cloning develop from cache
Created project in test
> @php -r "file_exists('.env') || copy('.env.example', '.env');"
Loading composer repositories with package information
Updating dependencies (including require-dev)
Package operations: 71 installs, 0 updates, 0 removals
  - Installing vlucas/phpdotenv (v2.5.1): Loading from cache
  - Installing symfony/css-selector (v4.1.3): Loading from cache
  - Installing tijssverkoyen/css-to-inline-styles (2.2.1): Loading from cache
  - Installing symfony/polyfill-php72 (v1.9.0): Loading from cache
  - Installing symfony/polyfill-mbstring (v1.9.0): Loading from cache
  - Installing symfony/var-dumper (v4.1.3): Loading from cache
  - Installing symfony/routing (v4.1.3): Loading from cache
  - Installing symfony/process (v4.1.3): Loading from cache
  - Installing symfony/polyfill-ctype (v1.9.0): Loading from cache
  - Installing symfony/http-foundation (v4.1.3): Loading from cache
  - Installing symfony/event-dispatcher (v4.1.3): Loading from cache
  - Installing psr/log (1.0.2): Loading from cache
  - Installing symfony/debug (v4.1.3): Loading from cache
  - Installing symfony/http-kernel (v4.1.3): Loading from cache
  - Installing paragonie/random_compat (v9.99.99): Loading from cache
```

The Laravel framework can be directly installed with develop branch which includes the latest framework.

Step 4 – The above command will install Laravel in the current directory. Start the Laravel service by executing the following command.

```
php artisan serve
```

Step 5 – After executing the above command, you will see a screen as shown below –



A screenshot of a Windows Command Prompt window titled "Administrator: C:\Windows\System32\cmd.exe - php artisan serve". The command "php artisan serve" is entered, and the output "Laravel development server started on http://localhost:8000/" is displayed. The window has a standard Windows title bar and scroll bars.

Step 6 – Copy the URL underlined in gray in the above screenshot and open that URL in the browser. If you see the following screen, it implies Laravel has been installed successfully.



Part 8

Project Documentation

P8.1 INTRODUCTION

P8.1.1 Project Overview

The project entitled “**Kaithanghu**” is a web-based application. The main objective of developing the project Kaithanghu is find home nurses for registered users. This provides the user with information regarding home nurses and their specializations. Users can sort home nurses according to category and availability. The users add patients by filling a form by details about the patients. There after users can book those home nurses who are available and who can take care of patient who is in need. After booking the users get the confirmation from the home nurse itself. Then the user can make the payment by online. There will be variations in the pre-assigned salary when home nurses take leaves.

P8.1.2 Project Specification

There are mainly three users in the application.

Admin:

- Approve Home Nurses
- View users
- View Booking details of users and home nurses
- View patients

Users

- Add Patients
- View and Book Home nurses
- Approve home nurses leave
- Edit profile
- Online Payment

Home Nurses

- View patients
- Accept booked patient
- Apply / view leave
- Profile edit
- Online payment

P8.2 SYSTEM STUDY

P8.2.1 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

P8.2.2 PROPOSED SYSTEM

To overcome limitations of existing system, we can introduce a site for Kaithanghu. In the proposed system, it provides the services to the users who are searching for homenurses which are, book homenurse by searching based on categories .

The existing system has several limitations and more difficulties to work well. The proposed system provide proper security and reduces the manual work, and it helps the user to work user friendly and he can easily do this job without time delay.

The main features include:

- Registered users can book the service of system
- Provide facility of giving feedback admin
- Easy access information

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 notification.

Minimum time required: -

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

P8.3 REQUIREMENT ANALYSIS

P8.3.1 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:

P8.3.1.1 Economical Feasibility

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 , there is no manual cost to spend for the proposed system. Also all the resources are already available, it give an indication of the system is economically possible for development.

Kaithanghu will be a simple platform for users to access services for their huge needs. It is completely free. Using this system large number people can solve their problems with free of cost.

P8.3.1.2 Technical Feasibility

The system must be evaluated from the technical point of view first. The assessment of this feasibility must be based on an outline design of the system requirement in the terms of input, output, programs and procedures. Having identified an outline system, the investigation must go on to suggest the type of equipment, required method developing the system, of running the system once it has been designed.

Technical issues raised during the investigation are:

- Does the existing technology sufficient for the suggested one?
- Can the system expand if developed?

The project should be developed such that the necessary functions and performance are achieved within the constraints. Through the technology may become obsolete after some period of time, due to the fact that newer version of same software supports older versions, the system may still be used. So, there are minimal constraints involved with this project. The system has been developed using Laravel in front end and MySql in server in back end, the project is technically feasible for development.

P8.3.1.3 Behavioural Feasibility

This includes the following questions:

- Is there sufficient support for the users?
- Will the proposed system cause harm?

The project would be beneficial because it satisfies the objectives when developed and installed. All behavioural aspects are considered carefully and conclude that the project is behaviourally feasible.

At your service, GUI is simple so that users can easily use it. AyurCare is simple enough so that no training is needed.

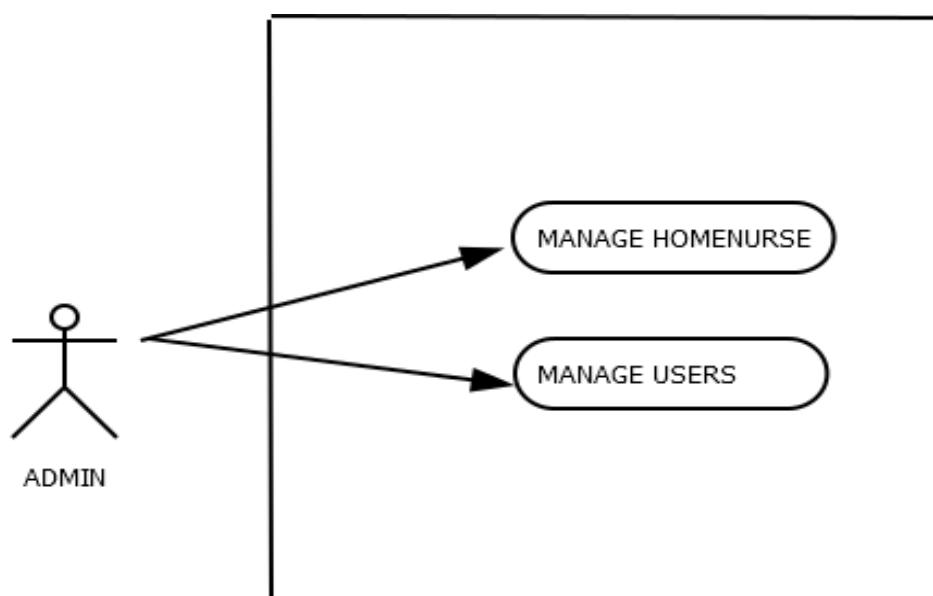
P8.4 Requirement Modeling

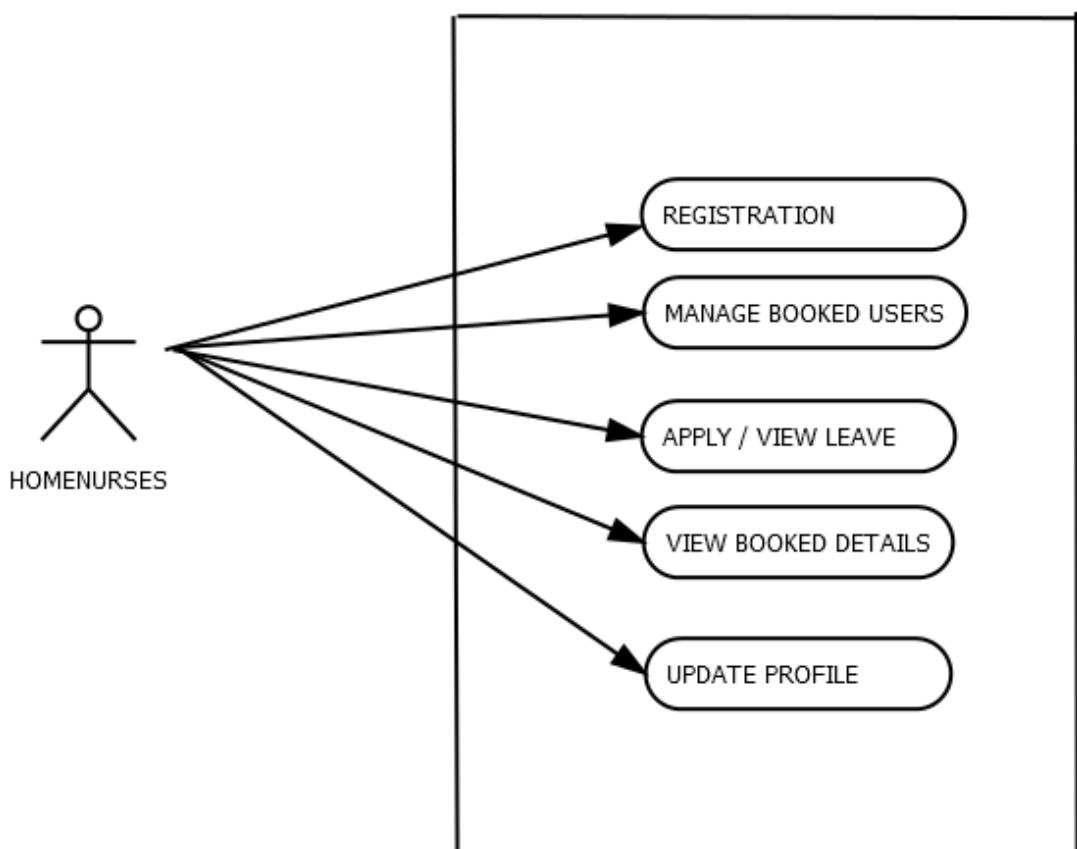
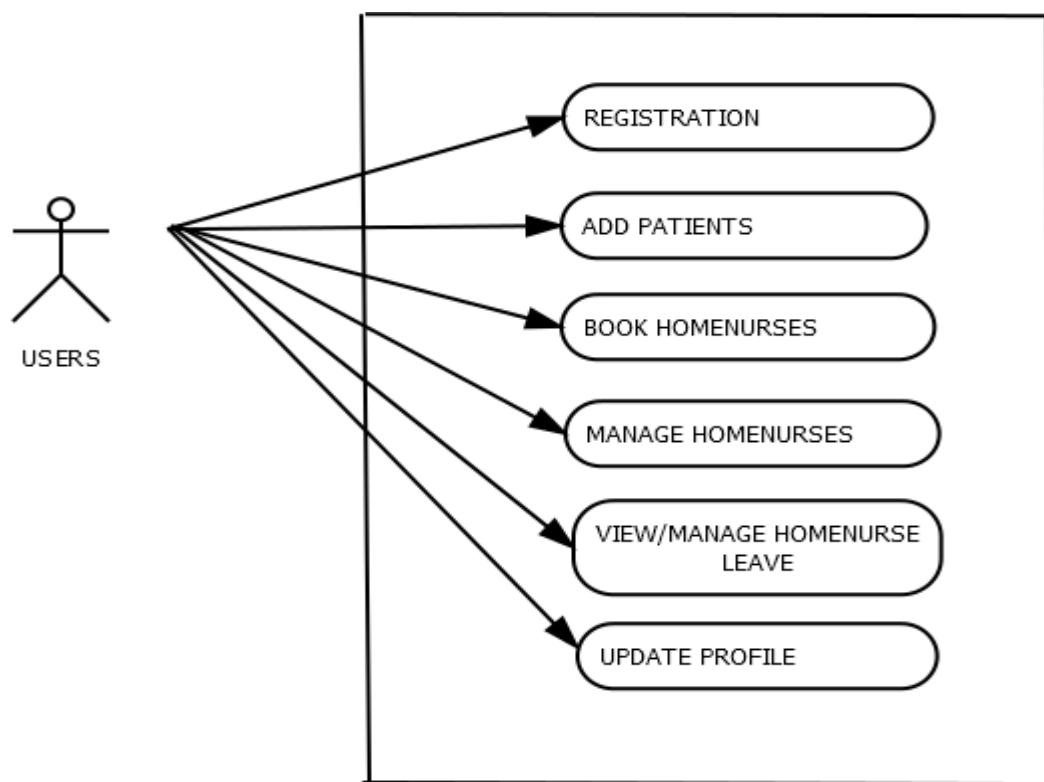
P8.4.1 UML Use Case Diagram

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 the specific roles are played by the actors within and around the system.
- The relationships between and among the actors and the use cases.



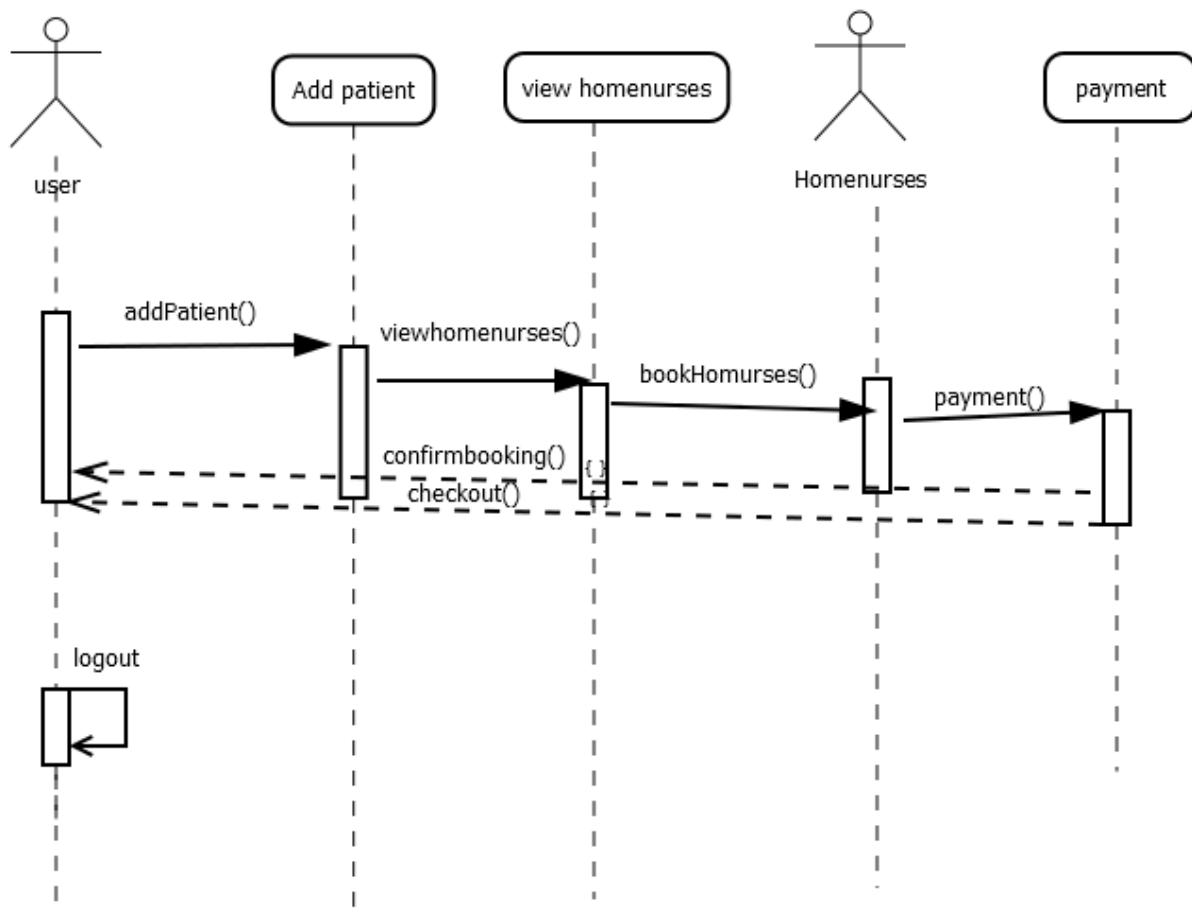


P8.4.2 UML Sequence Diagram

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

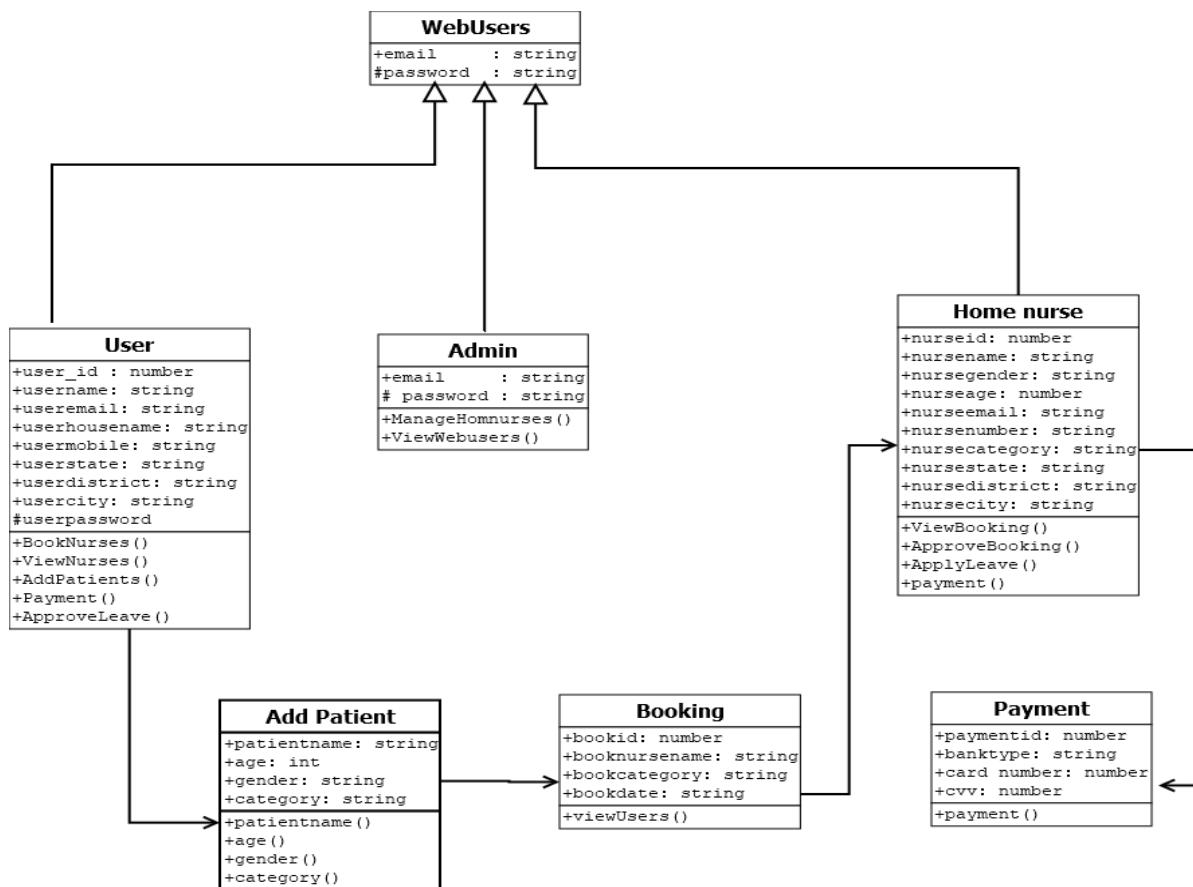


P8.4.3 Class diagram

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. It is also known as a structural diagram.

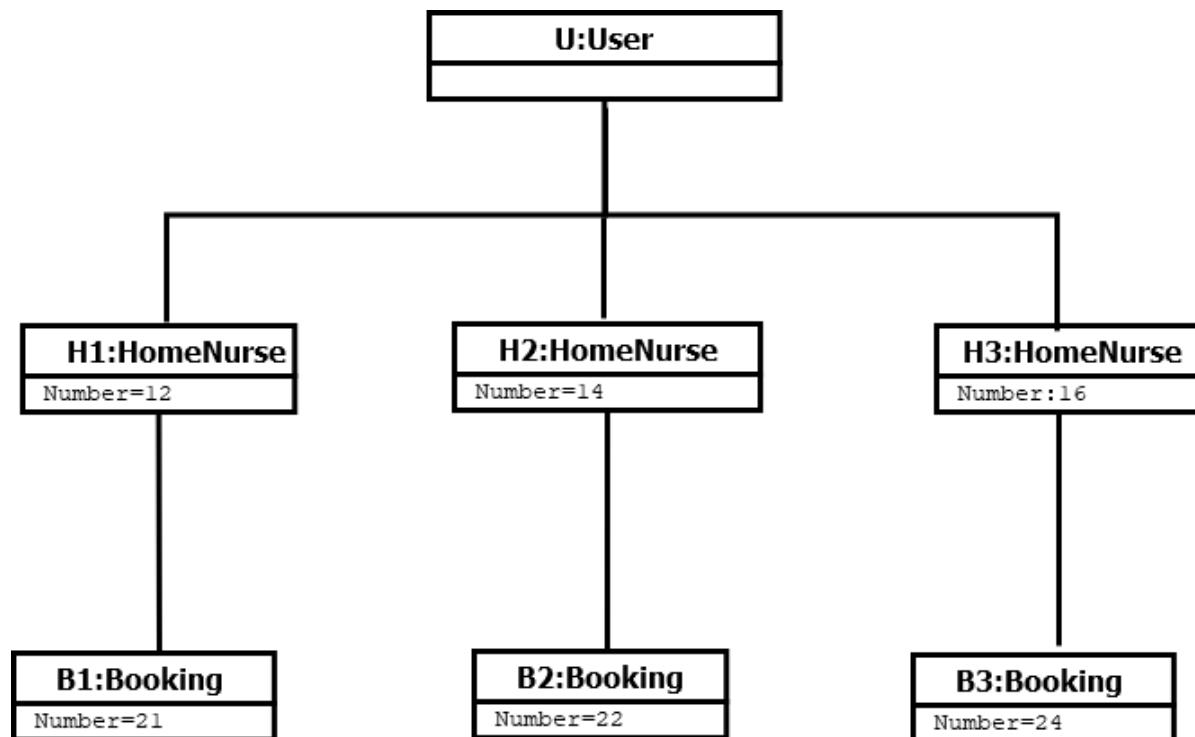


P8.4.4 Object Diagram

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.

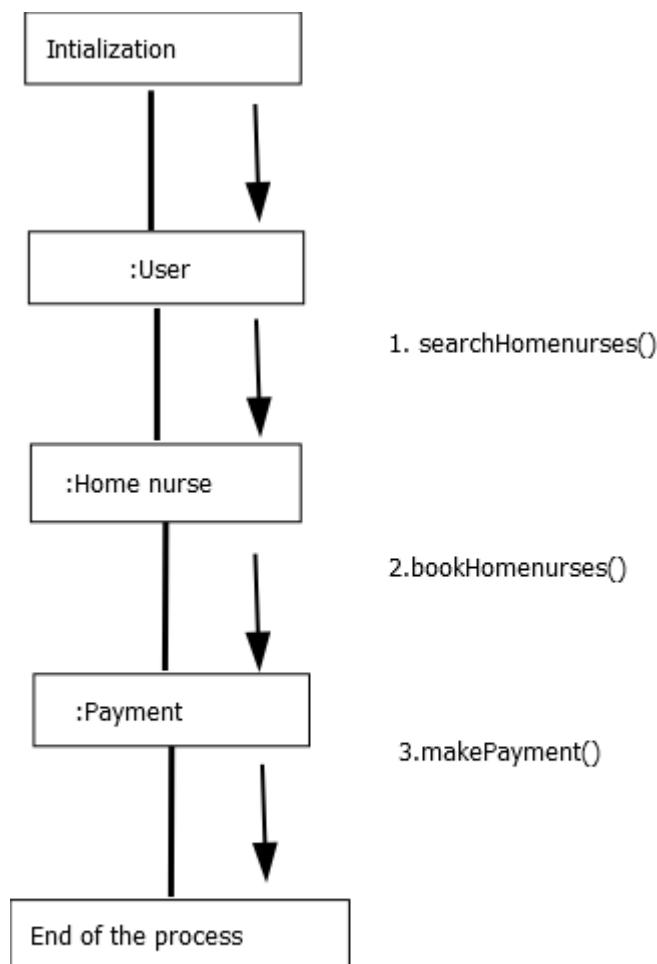


P8.4.5 Collaboration Diagram

Collaboration diagram shows the object organization as seen in the following diagram. In the collaboration diagram, the method call sequence is indicated by some numbering technique. The number indicates how the methods are called one after another. We have taken the same order management system to describe the collaboration diagram.

Method calls are similar to that of a sequence diagram. However, difference being the sequence diagram does not describe the object organization, whereas the collaboration diagram shows the object organization.

To choose between these two diagrams, emphasis is placed on the type of requirement. If the time sequence is important, then the sequence diagram is used. If organization is required, then collaboration diagram is used.

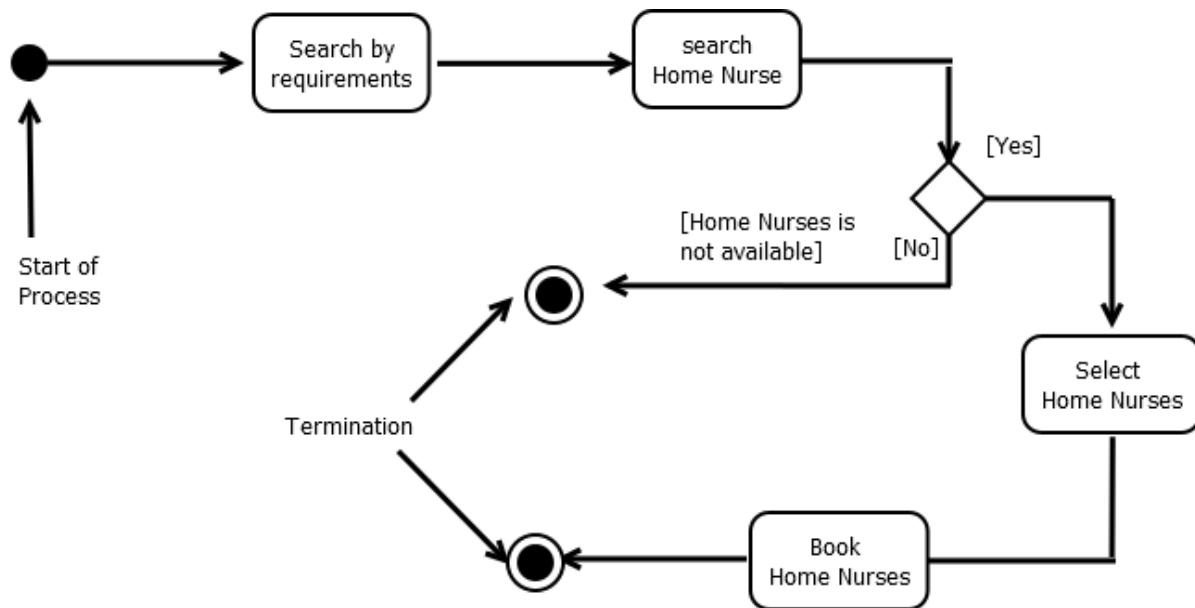


P8.4.6 Activity Diagram

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.

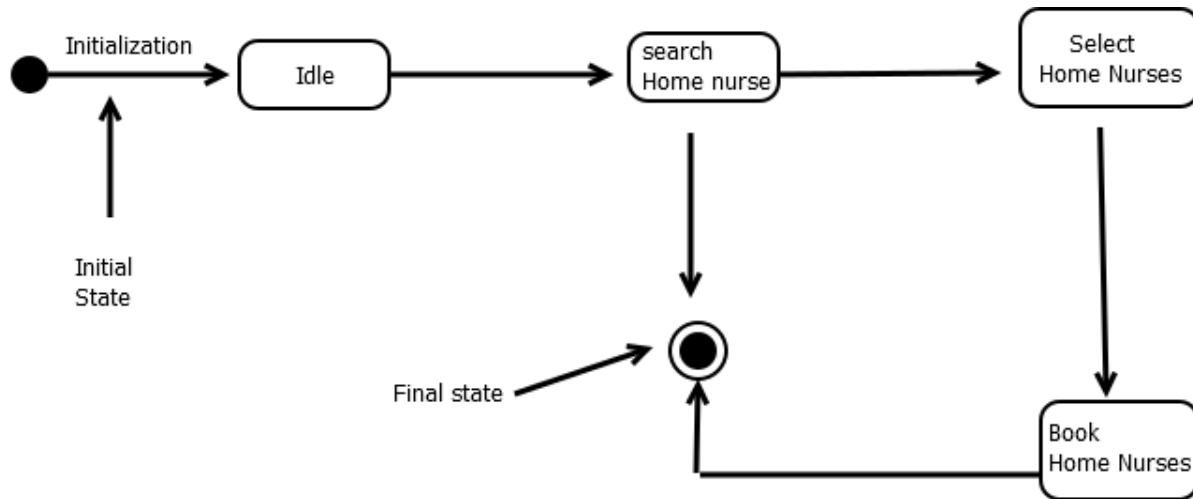
The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent. Activity diagrams deal with all type of flow control by using different elements such as fork, join, etc.



P8.4.7 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.



P8.5 System Specification

P8.5.1 Hardware Specification

Processor	- Pentium IV/AMD Dual core
RAM	- 1 GB
Hard disk	- 500 GB

P8.5.2 Software Specification

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

P8.6 Software Description

P8.6.1 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.

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.

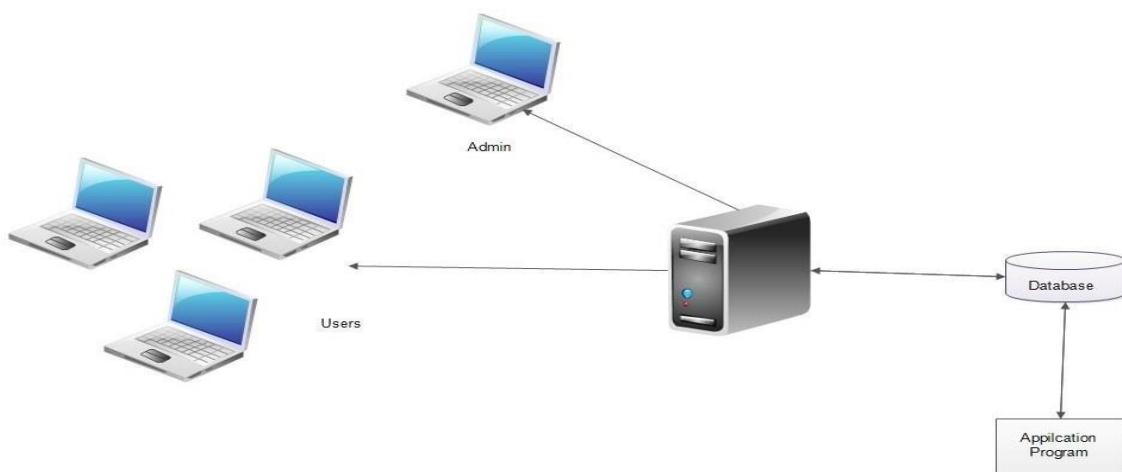
A large amount of contributed MySQL software is available.

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.

P8.7 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

P8.7.1 Architectural Design



The registered user, admin, staff, distributor can access the AyurCare 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.

P8.7.2 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 table 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 are 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 eliminates repeating groups of data. A relation is said to be in first normal form if and 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 and only if it is in second normal form and moreover the non key attributes of the relation should not be depend on other non-key attribute.

TABLES

Table 1 : register_users

primary key: user_id

Foreign key: id references to logins,

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
user_id	int	Primary Key	Unique id of the user
id	int	Foreign key (in logins)	login id
city_id	int	Foreign key (in tbl_city)	City id
name	varchar(40)		Name of the user
housename	varchar(40)		House name of the user
phone	varchar(40)		Mobile number of the user

Table 2 : register_homenurses

primary key: hn_id

Foreign key : id references to logins, city_id references to tbl_city, category references to tbl_patienttype

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
hn_id	int	Primary key	Unique id of the home nurse
Id	int	Foreign key (in logins)	Login id
city_id	int	Foreign key (in tbl_city)	City id
name	varchar(40)		name of the home nurse
gender	varchar(40)		gender of the home nurse
dob	date		Date of birth of the home nurse
phone	varchar(40)		mobile number of the home nurse

photo	text		Photo of the home nurse
category	int	Foreign key(in tbl_patienttype)	category id of home nurse
document	text		Document (experience)of the home nurse
salary	double		Salary of homenurse per day

Table 3: logins

primary key: id

Foreign key : id references to logins,type_ id references to tbl_type

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
id	int	Primary key	Unique id for login
email	varchar(20)		Email id of the login
password	varchar(20)		Password of the login
type_id	int	Foreign key(in tbl_type)	Type of the login
status	int		Status of the user

Table 4: tbl_type

primary key: type_id

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
type_id	int(10)	Primary key	Type id of login
type_name	varchar(20)		Type name of the user

Table 5 : tbl_district

primary key: district_id

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
district_id	int	Primary key	Unique id of the district
district_name	varchar(20)		Name of the district

Table 6 : tbl_city

primary key: city_id

Foreign key : district_id references to tbl_district

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
city_id	int	Primary key	Unique id of the city
district_id	int	Foreign key (in tbl_district)	District id
city_name	varchar(20)		Name of the city

Table 7 :tbl_patient

Primary key: pid

Foreign key : id references to logins

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
pid	int	Primary key	Unique id of the patient
id	int	Foreign key(in tbl_login)	Login id
name	varchar(20)		Name of the patient
age	varchar(20)		Age of the patient
gender	varchar(20)		Patient gender
type	varchar(20)		Relation to the user
category	varchar(20)		Category of the user
agebelongs	varchar(20)		Select homenurse ages
pstatus	int		Status of the user

Table 8 :tbl_patienttype

Primary key: patype_id

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
patype_id	int	Primary key	Unique id of the patient type
type_name	varchar(20)		Type of the patient
status	varchar(20)		Status

Table 9:tbl_bank

Primary key:bid

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
bid	int	primary key	Bank id
banktype	varchar(50)		Bank name
card_no	varchar(16)		Card number
month	varchar(10)		Expire month
year	int		Expire year
cvv	int		Cvv
name	varchar(30)		Bank holder name
status	int		Status

Table 10:tbl_payment

Primary key:p_id

Foreign key : id references to logins, hn_id references to register_homenurses

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
p_id	int	Primary key	Unique id of the payment
id	int	Foreign key(in logins)	Login id
hn_id	int	Foreign key(in register_homenurses)	Homenurse id
paidamount	int		Amount paid
total	varchar(20)		Total Amount

Table 11:tbl_bookhomenurse

Primary key:b_id

Foreign key :pid references to tbl_patient,user_id references to register_users,hn_id references to register_homenurses

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
b_id	int	primary key	Book id
pid	int	Foreign key(in tbl_patient)	patient id
user_id	int	Foreign key(in register_users)	user id
hn_id	int	Foreign key(in register_homenurses)	Homenurse id
Start	date		Starting date of booking
end	date		Book ending date
status	int		Status id

Table 12:tbl_applyleave

Primary key:leave_id

Foreign key :hn_ id references to register_homenurses

FIELD NAME	DATA TYPE	KEY	DESCRIPTION
leave_id	int	Primary key	Leave id
hn_id	int	Foreign key(in register_homenurses)	Homenurse id
date	date		Date of leave taken
reason	varchar(20)		Reason for the leave

P8.8 System Testing

P8.8.1 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 terms 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.

P8.8.2 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

P8.8.2.1 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 where removed and ensured that all modules are working, and gives the expected result.

P8.8.2.2 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.

P8.8.2.3 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.

P8.8.3 Test case

TEST CASE 1

User Registration Test Case					
Test Case ID: Fun_1		Test Designed By: Ancel Treasa Jose			
Test Priority(Low/Medium/High): High		Test Designed date: 5-4-2019			
Module Name: Login Screen		Test Executed by: Ms.Sruthimol Kurian			
Test Title: Verify login with valid username and password		Test Execution date: 6-4-2019			
Description: Test the Login page					
Pre-conditions: User has valid username and password					
Step	Test Steps	Test Data	Expected Result	Actual Result	Status(Pass/Fail)
1	Navigation to Login page		Login page for users	Login page for users	Pass
2	Provide valid username	Username: admin	User should be able to login	Logged in successfully and navigated to dashboard	Pass
3	Provide valid password	Password: admin			
4	Click login button				
5	Provide invalid username or password	Username: admin Password: adminn	User should not be able to login	User registered and user can	Pass
6	Provide null username or password	Username: null Password: null			
Post conditions: User is validated with database and then user can successfully login to account. The account session details are logged in database					

TEST CASE 2

Project Name: Kaithanghu					
User Registration Test Case					
Test Case ID: Fun_2			Test Designed By: Ancel Treasa Jose		
Test Priority(Low/Medium/High): Medium			Test Designed date: 5-4-2019		
Module Name: User Registration			Test Executed by: Ms.Sruthimol Kurian		
Test Title: To register new user			Test Execution date: 6-4-2019		
Description: Test the user registration					
Pre-conditions: User should not be already registered					
Step	Test Steps	Test Data	Expected Result	Actual Result	Status(Pass/Fail)
1	Navigation to User registration		User registration form	User registration form	Pass
2	Provide null information	User name=null	Message for enter user name	Message for enter user name	Pass
3	Provide Valid Registration details of user	Registration details of user	User registration	User registered and user can login	Pass
4	Click on Register Button				
Post conditions: User is validated with database and then user can successfully login to account. The account session details are logged in database					

P8.9 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 change over.

P8.9.1 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:

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

P8.9.2 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.

P8.9.3 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".

P8.10 Conclusion &Future Enhancements

P8.10.1 Future Enhancement

- The system is designed in such a way that we can add medical shop.
- Provide more security

P8.10.2 CONCLUSION

The software reduces the time consumption and the manual efforts of searching home nurses. It will be a simple platform for users to access services for their huge needs.

The benefits, we can obtain from the new system are:

- Timely and accurate information will be available
- Reduced data loss
- The access time and process time is highly reduced
- Quick data view
- Error free output

The proposed system is expected to replace manual system and provide more efficient performance and services.

P8.11 Bibliography

BOOKS/REFERENCES:

- Roger S Pressman, “*Software Engineering*”, 1994.
- Pankaj Jalote, “*Software engineering: a precise approach*”, 2006
- James lee and Brent ware Addison, “*Open source web development with LAMP*”, 2003
- IEEE Std 1016 Recommended Practice for Software Design Descriptions.

WEBSITES:

- www.w3schools.com
- www.jquery.com
- <http://homepages.dcc.ufmg.br/~rodolfo/es-1-03/IEEE-Std-830-1998.pdf>

- www.agilemodeling.com/artifacts/useCaseDiagram.html
- <https://www.tutorialspoint.com/laravel/index.htm>
- <https://www.phptutorial.net/laravel-tutorial/>

P8.12 APPENDIX

P8.12.1 SAMPLE CODE

LoginController

```
<?php
namespace App\Http\Controllers;
use DB;
use App\login;
use Session;
use Illuminate\Http\Request;
class LoginController extends Controller
{
    public function index()
    {
        return view('loginn');
    }
    login(Request $request)
    {
        $email = $request->input('email');
        $password = $request->input('password');
        $checkLogin1=DB::table('logins')-
>where(['email'=>$email,'password'=>$password,'type_id'=>1])->get(); //user
        $checkLogin2=DB::table('logins')-
>where(['email'=>$email,'password'=>$password,'type_id'=>2,'status'=>1])->get(); //home nurse
        $checkLogin3=DB::table('logins')-
>where(['email'=>$email,'password'=>$password,'type_id'=>3])->get(); //medical shop
        $checkLogin4=DB::table('logins')-
>where(['email'=>$email,'password'=>$password,'type_id'=>4])->get(); //Admin
        if(count($checkLogin1)>0)
```

```
{  
    session_start();  
    $request->session()->put('email', $email);  
    return redirect('/userhome');  
  
}  
  
else if(count($checkLogin2)>0)  
{  
    session_start();  
    $request->session()->put('email', $email);  
    return view('homenurse.homenursehome');  
}  
else if(count($checkLogin3)>0)  
{  
    session_start();  
    $request->session()->put('email', $email);  
    return view('medicalshop.medicalshophome');  
}  
else if(count($checkLogin4)>0)  
{  
    session_start();  
    $request->session()->put('email', $email);  
    $st1=DB::select("select * from register_homenurses,logins where type_id='2' and  
register_homenurses.email=logins.email");  
    $str=count($st1);  
    $st= DB::select("select * from logins,register_users where type_id='1'  
and logins.email=register_users.email");  
    $strr=count($st);  
}
```

```

else
{
    \Session::flash('flash_message','invalid email or password');

    return redirect('/');
}

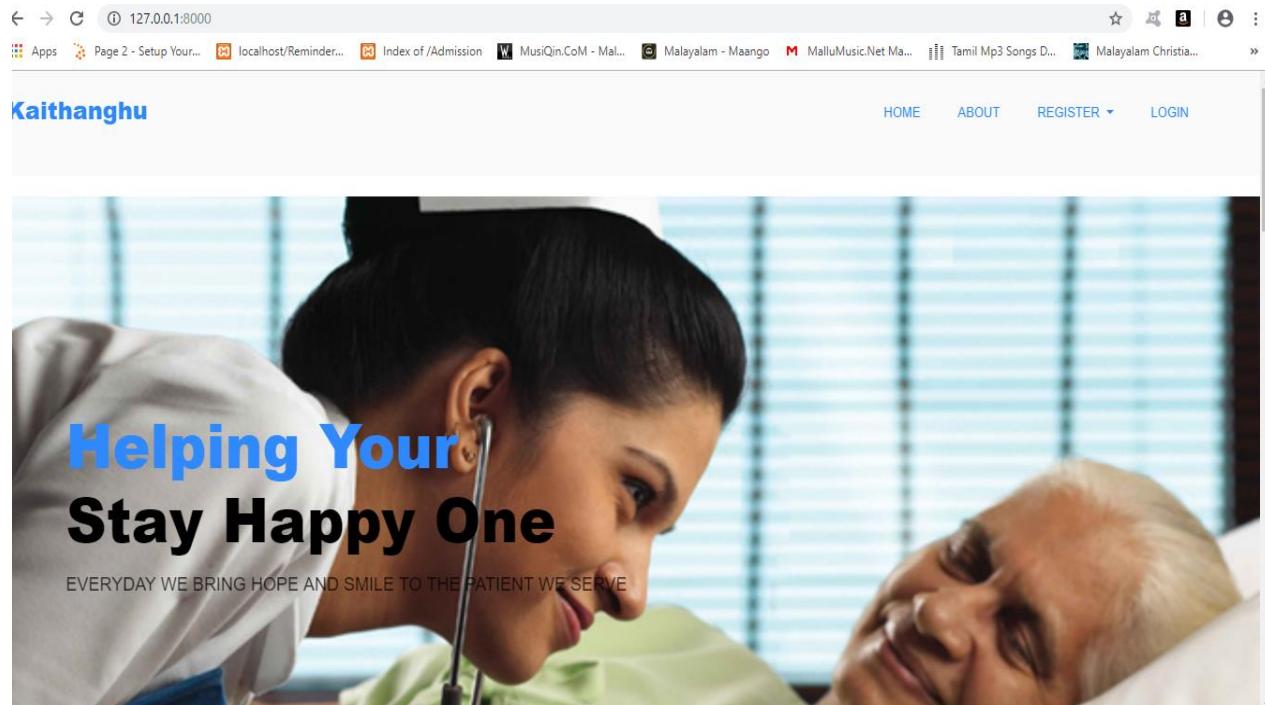
}

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

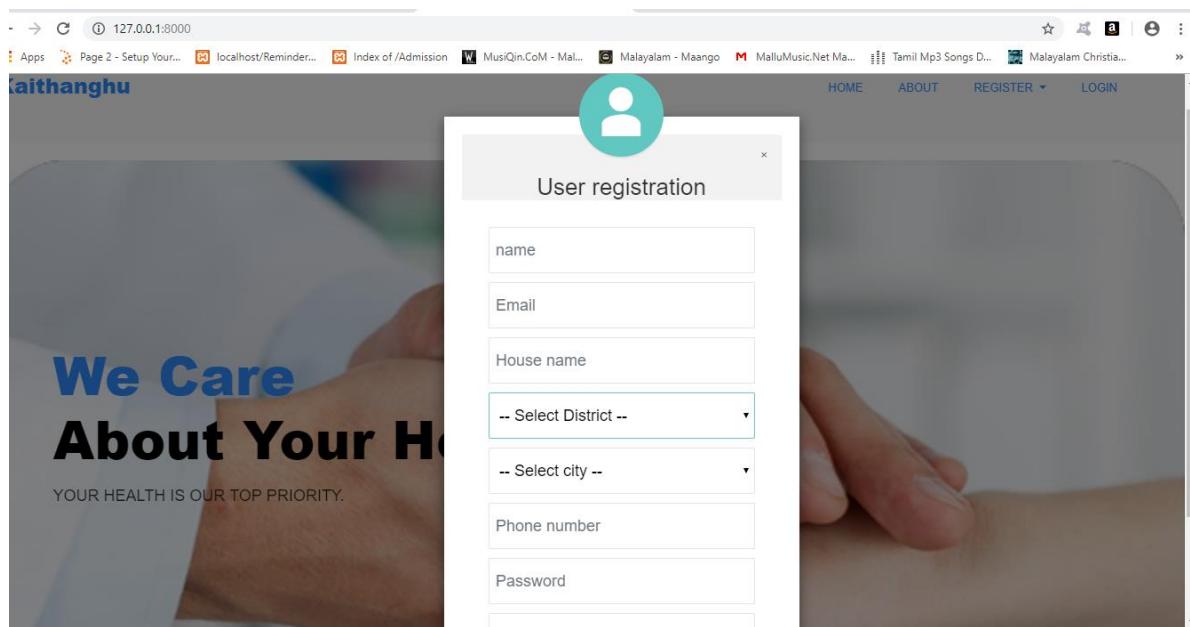
```

P8.12.2 SCREENSHOTS

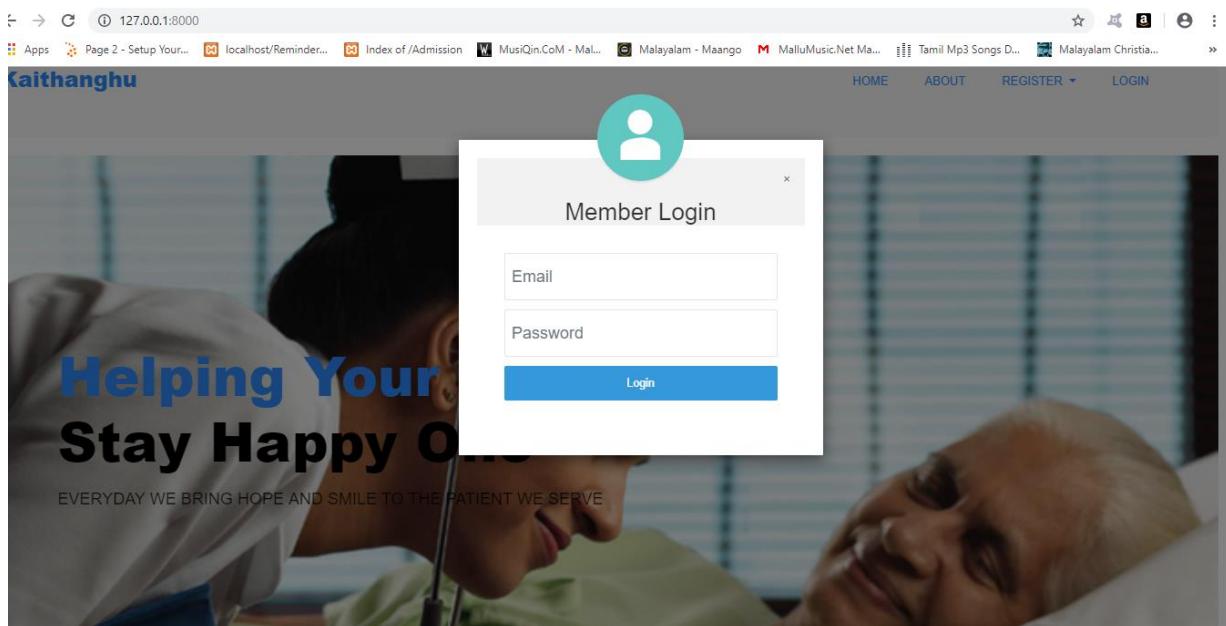
Main Home (Index) page



User registration



Member login



User Home Page

The screenshot shows a web browser window with the URL 127.0.0.1:8000/homenurseview. The page title is "Kaithanghu". The navigation menu includes HOME, HOMENURSES, VIEWPATIENT, HOMENURSE DETAILS, ACCEPTED 1, and mariya@gmail.com. Below the menu are three filter dropdowns: Category, Age, and Gender, followed by a "Filter" button. There are three cards displaying nurse profiles:

- merin**: Specialization :kids, Experience :two year
- chelsia**: Specialization :kids, Experience :three year

Add patients

The screenshot shows a web browser window with the URL 127.0.0.1:8000/homenurseview. The page title is "Kaithanghu". The navigation menu includes HOME, HOMENURSES, VIEWPATIENTS, HOMENURSE DETAILS, ACCEPTED 1, and mariya@gmail.com. A table displays patient information:

id	name	age	gender	type	Specialization	age choosen	Status
	appu	25	male	father	teenagers	40	

An "Add patient" button is located at the bottom right of the table.

Accept or reject booking

SNo	Patient name	Age	gender	Email	House name	phone	Patient relation	start booking date	end of booking	status
1	ammu	17	female	mariya@gmail.com	aaaaaaaaaaaa	8547441349	parents	2019-05-12	2019-05-16	<input type="button" value="ACCEPT"/>

Apply leave

Apply leave

date

reason

View leave

View leave applied

127.0.0.1:8000/viewleaveapplied

HOME HOMENURSES VIEWPATIENTS HOMENURSE DETAILS ACCEPTED 1 mariya@gmail.com

sno	patient name	Homenurse name	leave date	reason	Status
1	ammu	chelsia	2019-05-06	sick	APPROVED