



CERTIFICATE

This is certify that

NIKHIL G. CHALIKWAR

for completing list of experiments of the subject
Cloud Computing laboratory
during academic year 2020-21

DATE:-09 Dec 2020

**HEAD OF
DEPARTMENT**

PROF. Ms. Kale J.S
Subject in-charge

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Aim:- Working of Google Drive to make word, power point, spreadsheet, Application.

Requirement: Google account, Internet Connection.

THEORY:

Google Docs is a free cloud-based suite of tools for creating documents, spreadsheets, presentations, and more. This tutorial will cover the **Spreadsheets** application in Google Docs, in addition to showing you how to access and store your Docs from **Google Drive**.

.Google Docs

Google Docs is an online word processor that lets you create and format text documents and collaborate with other people in real time. Here's what you can do with Google Docs:

- Upload a Word document and convert it to a Google document

Add flair and formatting to your documents by adjusting margins, spacing, fonts, and colors — all that fun stuff

- Invite other people to collaborate on a document with you, giving them edit, comment or view access
- Collaborate online in real time and chat with other collaborators — right from inside the document

Google Sheets

Google Sheets is an online spreadsheet app that lets you create and format spreadsheets and simultaneously work with other people. Here's what you can do with Google Sheets:

- Import and convert Excel, .csv, .txt and .ods formatted data to a Google spreadsheet
- Export Excel, .csv, .txt and .ods formatted data, as well as PDF and HTML files
- Use formula editing to perform calculations on your data, and use formatting to make it look the way you'd like
- Chat in real time with others who are editing your spreadsheet
- Create charts with your data

Google Slides

Google Slides is an online presentations app that allows you to show off your work in a visual way. Here's what you can do with Google Slides:

- Create and edit presentations

- Edit a presentation with friends or coworkers, and share it with others effortlessly
- Import .pptx and .pps files and convert them to Google presentations
- Download your presentations as a PDF, a PPT, or a .txt file
- Insert images and videos into your presentation
- Publish and embed your presentations in a website

1. **Add a Google Calendar.** This tool allows for transparent communication of events, due dates, expected outcomes or unit progression. Calendars can be edited by just one or multiple parties for easy collaboration.
2. **Create classroom and Blogger accounts.** As instructional tools, YouTube and Blogger allow students to revisit content provided in class and let teachers make pre-planned activities available virtually so they can facilitate multiple learning paths simultaneously. Because this content lives forever in the cloud (if you want it to), you can keep evergreen videos or blog posts for review or for future classes.
3. **General classroom info.** Most of the basic information, such as your contact information, is static and probably lives in various places already, including your school's website and on a paper syllabus. That means you can enter it once at the beginning of the year or term and not have to worry about changing it unless something unexpected comes up.
 1. **Teacher name and contact information page**
Google App: Google Sites
 2. **Update schedule:** This information isn't likely to change much, so you can get away with updating this page annually, or as needed.
 3. **Contact and communication information**
Google App: Google Sites with an embedded Google Form
 4. **Class rules and expectations**
Google App: Google Sites or Google Docs, which allows comments
 5. **update schedule:** Again, this all tends to be evergreen information, so just revisit it at the beginning of each year.

6. Supply list

Google App: Google Sites or Google Docs

7. Feedback forms

Google App: Google Form

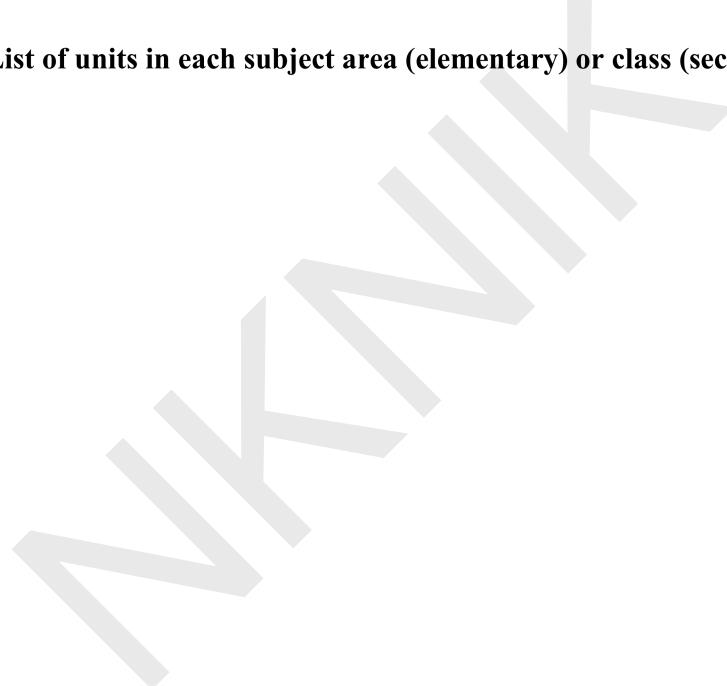
8. Class calendar

Google App: Google Calendar embedded in a Google Site

9. Class news

Google App: Blogger, Google Sites, Google Docs and/or YouTube

10. List of units in each subject area (elementary) or class (secondary)



Conclusion: With the help of given procedure and information about Google Drive

we can create word, power point, spreadsheet application

calendar,,classroom blog application

Feedback Form

Responses 449

449 responses

Message for respondents

This form is no longer accepting responses.

Summary Question Individual

Name (To be printed on Certificate)
449 responses
Shabaree Hanumant Hirwe

pract1cc

File Edit View Insert Format Tools Add-ons Help Last edit was seconds ago

6. Supply list

THEORY:

- Google App: Google Sites or Google Docs
- 7. Feedback forms
- Google App: Google Form
- 8. Class calendar
- Google App: Google Calendar embedded in a Google Site
- 9. Class news
- Google App: Blogger, Google Sites, Google Docs and/or YouTube

Conclusion: With the help of given procedure and information about Google Drive

process Folder Log 09-03-2020

Progress	Completed at	Link to new folder	Total files copied	App didn't work?	
Complete	09-03-20 12:24: https://drive.google.com		0	Please read the FAQ in the app	
Name	Link	ID	Time completed	Parent Folder Link	File size
29	Magoosh	https://drive.google.com	09-03-20 12:04:15 AM	1C7SdlFfvnZW	1.78 MB
30	ThumbsUp	https://drive.google.com	09-03-20 12:04:18 AM	1A12nJv3eeivrg	47 KB
31	1,014 Prt	https://drive.google.com	09-03-20 12:04:22 AM	1hYwdd0E26b	23.46 MB
32	1,014 Prt	https://drive.google.com	09-03-20 12:04:24 AM	19BVp0RdfmQj	89.95 MB
33	1.Algebra	https://drive.google.com	09-03-20 12:04:27 AM	1LcaxPO_ll0xj	7.56 MB
34	114-115f	https://drive.google.com	09-03-20 12:04:29 AM	1ZvcYdtdfr0W	61.04 KB
35	2.FDP.pdf	https://drive.google.com	09-03-20 12:04:31 AM	10Mmh15GNepF	14.03 MB
36	3.Geome	https://drive.google.com	09-03-20 12:04:32 AM	1EnWnB1VexsV	11.21 MB
37	4.Numbre	https://drive.google.com	09-03-20 12:04:34 AM	1PNNDOrmk1g	8.36 MB
38	5.Word_F	https://drive.google.com	09-03-20 12:04:37 AM	1AhatjxEIwl4or9t	8.76 MB
39	6.QuantC	https://drive.google.com	09-03-20 12:04:39 AM	138euThKE8-2X	8.68 MB
40	7.ReadC	https://drive.google.com	09-03-20 12:04:41 AM	1BEW5levpaq9t	15.25 MB

Screenshot of a Google Slides presentation titled "Untitled presentation". The slide content is as follows:

MGM's COLLEGE OF ENGINEERING
Near Airport,Hingoli Road,Nanded - 431605
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

*Awards Certificate of Participation to
Nikhil Chalikwar*

for participating in "Online C-Quiz 2020" organized by
Computer Users' Club of Department of CSE on 27th of May
2020.

Mr. R. G. Bisen (EVENT CO-ORDINATOR) Mr. S. O. Gill (EVENT CO-ORDINATOR)
Dr. A. M. Rajurkar (DEPARTMENT OF CSE, H. B. H. S. C. O. E., NANDED) Dr. Mrs. G. S. Lathkar (DEPARTMENT OF CSE, H. B. H. S. C. O. E., NANDED)

Click to add speaker notes

Screenshot of a Windows Calendar window showing an event titled "submit CC ASSIGNMENT" scheduled for September 16, 2020, from 11:00 AM to 12:00 PM. The event details include "Add Google Meet video conferencing" and "Chalikwar Nikhil Gaajani" as the organizer.

Screenshot of a Google Sheets document titled "process Folder Log 09-03-2020". The table contains the following data:

	Progress	Completed at	Link to new folder	Total files copied	App didn't work?	
1	Complete	09-03-20 12:24:	https://drive.google.com	0	Please read the FAQ in the app	
2	Name	Link	ID	Time completed	Parent Folder Link	File size
29	Magooosh	https://drive.google.com	1C75sdIFlfvnZW	09-03-20 12:04:15 AM	https://drive.google.com	1.78 MB
30	Thumbs.c	https://drive.google.com	TA12hUVj3eeivrg	09-03-20 12:04:18 AM	https://drive.google.com	47 KB
31	1.014 Prs	https://drive.google.com	thYwddOE2E6b8	09-03-20 12:04:22 AM	https://drive.google.com	23.46 MB
32	1.014 Prs	https://drive.google.com	19BVpDOrJmQj	09-03-20 12:04:24 AM	https://drive.google.com	80.95 MB
33	1.Algebra	https://drive.google.com	1LCaxXPO_80nJ	09-03-20 12:04:27 AM	https://drive.google.com	7.58 MB
34	114-115P	https://drive.google.com	12vcsYdtfrpGWC	09-03-20 12:04:29 AM	https://drive.google.com	81.04 KB
35	2.FDP.pdf	https://drive.google.com	10MmhISGNgapF	09-03-20 12:04:31 AM	https://drive.google.com	14.03 MB
36	3.Geome	https://drive.google.com	1EnVhd1VoxsV	09-03-20 12:04:32 AM	https://drive.google.com	11.21 MB
37	4.Numbe	https://drive.google.com	1PNDOORmk1g	09-03-20 12:04:34 AM	https://drive.google.com	8.36 MB
38	5.Worl	https://drive.google.com	1AhatgxElw4orH	09-03-20 12:04:37 AM	https://drive.google.com	8.76 MB
39	6.QuestC	https://drive.google.com	138ewTHKE8-2K	09-03-20 12:04:39 AM	https://drive.google.com	8.68 MB
40	7.ReadO	https://drive.google.com	1BIEWSIevoq9uf	09-03-20 12:04:41 AM	https://drive.google.com	15.25 MB

The image is a composite of four screenshots from a Windows desktop environment, showing overlapping windows. 1. Top-left window: A presentation slide titled 'Untitled presentation - Google Slides' with the URL 'docs.google.com/presentation/d/1VZcO3hElIscWY962kmvBGQ3LMUa_2n/edit#slide=id.g1'. It displays a certificate of participation for 'Nikhil Chalikwar' from 'MGM's COLLEGE OF ENGINEERING' for participating in an online C-Quiz. 2. Top-right window: A Google Drive folder named 'certificates' containing multiple PDF files, each a certificate for different participants (e.g., Shweta Agarwal, Neha Agarwal, Renu Agarwal) from the same college for their participation in the quiz. 3. Bottom-left window: A Google Form titled 'SURVEY' with sections for 'FEEDBACK', 'COMMENT', and 'ADVICE'. The title of the form is 'MGM's College of Engineering, Nanded'. It includes questions about a recently conducted webinar on Cloud Computing and Amazon Web Services (AWS). 4. Bottom-right window: A browser tab showing a process folder log from 09-03-2020, with the URL 'docs.google.com/folder/d/1Xq4lE0ka_wmNDuG4S1NTtjIDW8CIPz53sew/edit'. The status bar at the bottom shows '239 MB / 239 MB' and the date '16-Sep-20'.

Experiment-II

Aim: *Create a scenario in wordpress for Social Marketing, Email Marketing, Search engine and Sharing Tools.*

Requirement: Google account, Internet Connection.

THEORY:

WordPress

The ideal option for someone who's creating his or her first website. It has considerable scalability and works well with low and medium traffic websites. We receive 1.5 million views every month and we run WordPress, so that gives you an idea of what medium traffic constitutes if you were wondering. Even large websites such as TIME Magazine, CNN, TED, Techcrunch, NBC and others use WordPress to server millions of pageviews each day.

WordPress has a great number of points that can be made in favor of its use.

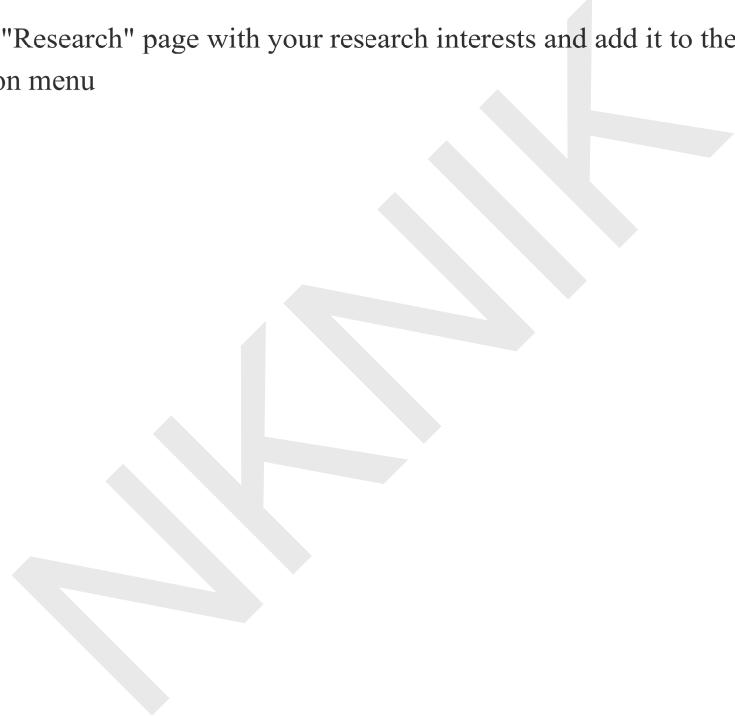
- Easy To Install: Most hosting services have one click installation options for WordPress given the number of people who use it.
- Strong Community & Open Source: It is free and used by a lot of people.
- Ideal For Non tech savvy online entrepreneurs:

Two not so quite favorable things about WordPress.

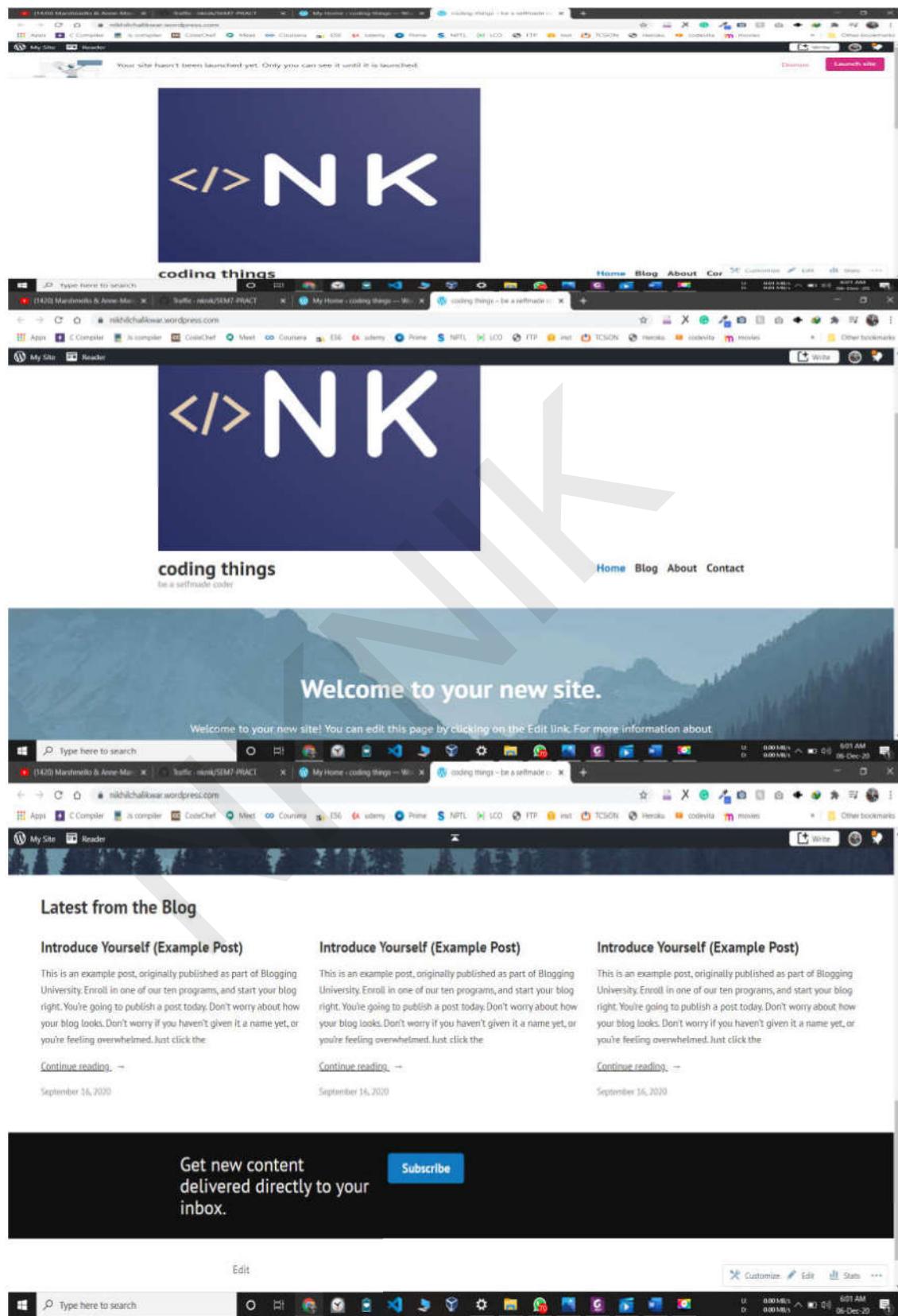
- One drawback of WordPress, it may become unwieldy if your site grows far too large and receives an enormous amount of daily traffic.
 - Another potential problem is the quality of free plugins and themes. While most are good and have fairly high security standards, you'd should be wary of unknown third party plugins.
-

Steps to create Website using Wordpress.com

1. Create a free website at wordpress.com using gmail Id. Choose a meaningful name for the domain: example yourname.wordpress.com, yourlabname.wordpress.com, SomeClassicalIndianLanguageWord.wordpress.com
2. Create a short blog post of your experience with this program
3. Create an "About Me" page, giving details of your qualifications, employment history, awards and recognitions, etc. Add it to the menu, if not already there.
4. Add a "Contact Info" widget giving your meeting hours
5. Create a "Research" page with your research interests and add it to the main navigation menu



Conclusion: With the help of given procedure and information about wordpress we can create website.



Experiment-III

Aim: Sketch out and analyze architecture of Moodle cloud portal and moodle cloud site and create different entities dynamically.

Requirement: Google account, Internet Connection.

THEORY:

MoodleCloud is a hosting service provided by the people who make Moodle, where you can get a fully-hosted Moodle site (we call it a MoodleCloud site). After signing up, you will have access to your MoodleCloud Portal for managing your account and your site, with some of the community's most popular plugins, ready to go.

You can choose from several different packages that scale according to your needs.

The MoodleCloud Portal is where you manage your MoodleCloud account, billing details and access statistics on the usage of your site.

To login to the MoodleCloud Portal, enter your site URL and your MoodleCloud password, which is the same as the admin password for your MoodleCloud site.

Your **MoodleCloud site** is a fully hosted version of the latest version of our powerful and secure Moodle learning platform.

In your site you can create effective online teaching and learning experiences in a collaborative, private environment. You can create courses, provide activities and resources for learning and assessment, allow learners to complete quizzes or submit files, grade assignments and communicate with your learners. When you sign up for a MoodleCloud site, as the site admin you can also make changes to the look and feel, create courses, add teachers and learners to courses, and communicate with everyone on the site.

Conclusion: With the help of given procedure and information about Moodle Cloud we can create Cloud site and portal.

Your MoodleCloud Free trial will expire on 20-Jan-2021. Upgrade now to keep this site active.

ENGLISH (EN)

Dashboard

Recently accessed courses:

- No recent courses.

Private files

No files available

Manage private files...

Upcoming events

There are no upcoming events
Go to calendar...

Latest badges

You have no badges to display

Moodle Docs for this page | Support Forums | MoodleCloud FAQ

You are logged in as Nikhil.Chalkwar (Log out)

[Home](#)
[Data retention summary](#)
[Get the mobile app](#)
[Policies](#)

Type here to search

Introduction to Moodle

Participants

Badges

Competencies

Grades

Home

Dashboard

Calendar

Private files

Content bank

My courses

Introduction to Moodle

Site administration

Introduction to Moodle

Introduction to Moodle

Home / My courses / Introduction to Moodle

Welcome!

If you are new to Moodle it may look complex, because there are a lot of things it can do and it's very configurable! But don't worry, the basics are simple. Here are some tips to get you started:

Where to find everything

- To **Edit settings** for any page you are on, use the **Settings icon** (top right of page)
- Your **personal preferences** and tools are in your **user menu** (top right in navigation bar)
- To find other pages, use the **Nav drawer** (left)
- To hide or show the **Nav drawer** use the button (top left)

Building your course

My new Moodle site

Login information

Remember me

Log in

Important: your password is compromised!
Cookies must be enabled in your browser

You are not logged in.
Please log in to access this site.

My new Moodle site

Log in

Conditions

Experiment-IV

Aim: Installation and Configuration of Justcloud/One drive/Skydrive

Theory:

In today's digital workplace, the amount of content produced is growing exponentially, and working relationships change by the day. To maintain productivity in this environment, it's essential that people can easily access and collaborate on team files in and outside their organizations from anywhere, on any device.

Today, we are excited to announce availability of several new capabilities in OneDrive for Business that make it easier than ever to sync, share and collaborate on all your files in Office 365.

- **Syncing SharePoint sites and OneDrive for Business shared folders—**
- **Standalone Mac client**
- **Activity center**
 - **Features**
- **Home**—Admin center dashboard will soon show recent Office 365 Message Center posts and usage reporting related to OneDrive.
- **Sharing**—This section helps you gain control over how and with whom your users are sharing information. Includes controlling the use of external sharing and anonymous links, as well as limiting which external domains users can share with.
- **Sync**—You now can block syncing of specific file types and deny syncing to non-domain joined PCs.
- **Storage**—Where you can easily set default storage limits and document retention durations.
- **Device access**—This gives you control over how and from where a user can access their files. Includes allow/deny access from personal devices or specific networks as well as rich Mobile Application Management Intune policies for iOS and Android.
- **Compliance**—Offers quick links to the Office 365 Security and Compliance Center for key scenarios like auditing, data loss prevention, retention and eDiscovery.

- **Notification**—Ability to turn on/off various notifications for your tenant.

How to set up OneDrive on Windows

Setting up OneDrive on your PC is easy. Here's how:

- Open Start.
- Search **OneDrive** and click the top result.
- Using the setup experience, enter your email address.
- Click the **Sign in** button.
- Enter your Microsoft account password.
- Click the **Sign in** button
- Click the **Not now** button if you're using the free version of OneDrive.
- Click through the welcome tips.
- Click the **Open my OneDrive folder** button

Objective: Installation and Configuration of Justcloud.

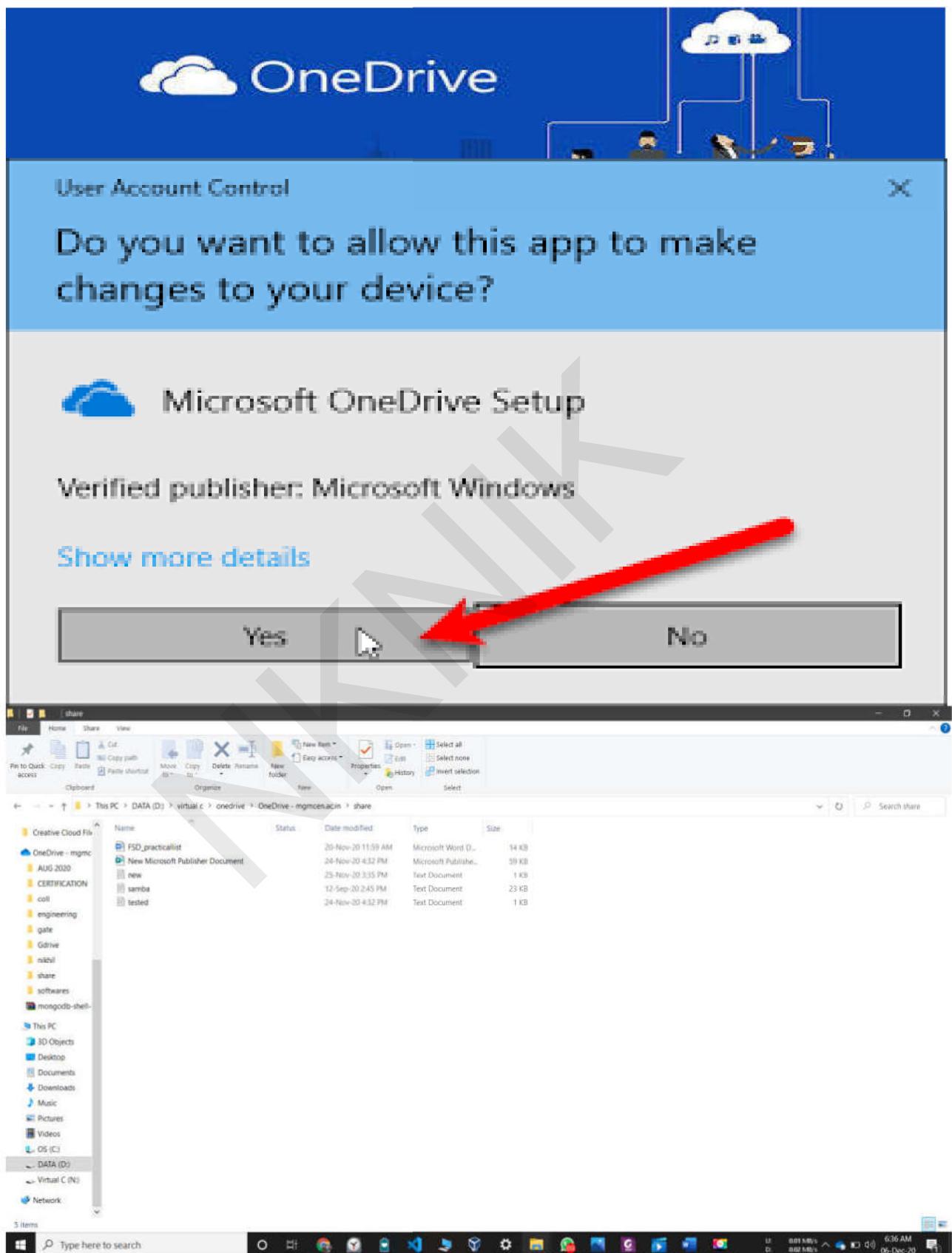
Requirement: Justcloud exe File

THEORY:

Professional Cloud Storage from JustCloud is Simple, Fast and Secure. Just Cloud will automatically backup the documents, photos, music and videos stored on your computer, to the cloud so you are never without files again.

1. By following these steps you will download and install the JustCloud software application on this computer. This software will automatically start backing up files from your computer and saving them securely in an online cloud user account. Your free account gives you 15MB storage space or 50 files for 14 days. Once installed a sync folder will be added to your desktop for you to easily drag and drop files you wish to backup.

Conclusion: With the help of given information we can implement Microsoft one drive/Just cloud



Experiment-V

Aim: Working in Cloud9 to demonstrate different language

THEORY:

Cloud9 IDE is an online development environment for JavaScript and Node.js applications as well as HTML, CSS, PHP, Java, Ruby and 23 other languages. Anyone looking for a modern and secure IDE. With your code online and accessible from anywhere, you can work more efficiently than before.

Creating a new account

Creating an account for the Cloud 9 IDE can be done in a few simple steps: First, sign up for an account on the Cloud9 homepage, by filling in your desired username and email address and pressing the **Sign me up** button:

You will then see a message indicating that we have sent you an email to the address you provided with activation instructions:

2. Check your email now. You will receive an email from us with a link to activate the account. Click on the link. You will now be asked to set a password for your new Cloud9 account:

2. Click on **Activate**.

Congratulations! You are now the proud owner of a Cloud9 account. Now, go ahead and create your first project.

Create a new project

The first step for creating a new project is to click on the "+" next to **My Projects** in the Projects tab:

At this point, you will encounter two choices: **Create a new project** and **Clone from url**. We will explore both paths.

After clicking on **Create a new project**, you will be presented with the screen shown below:

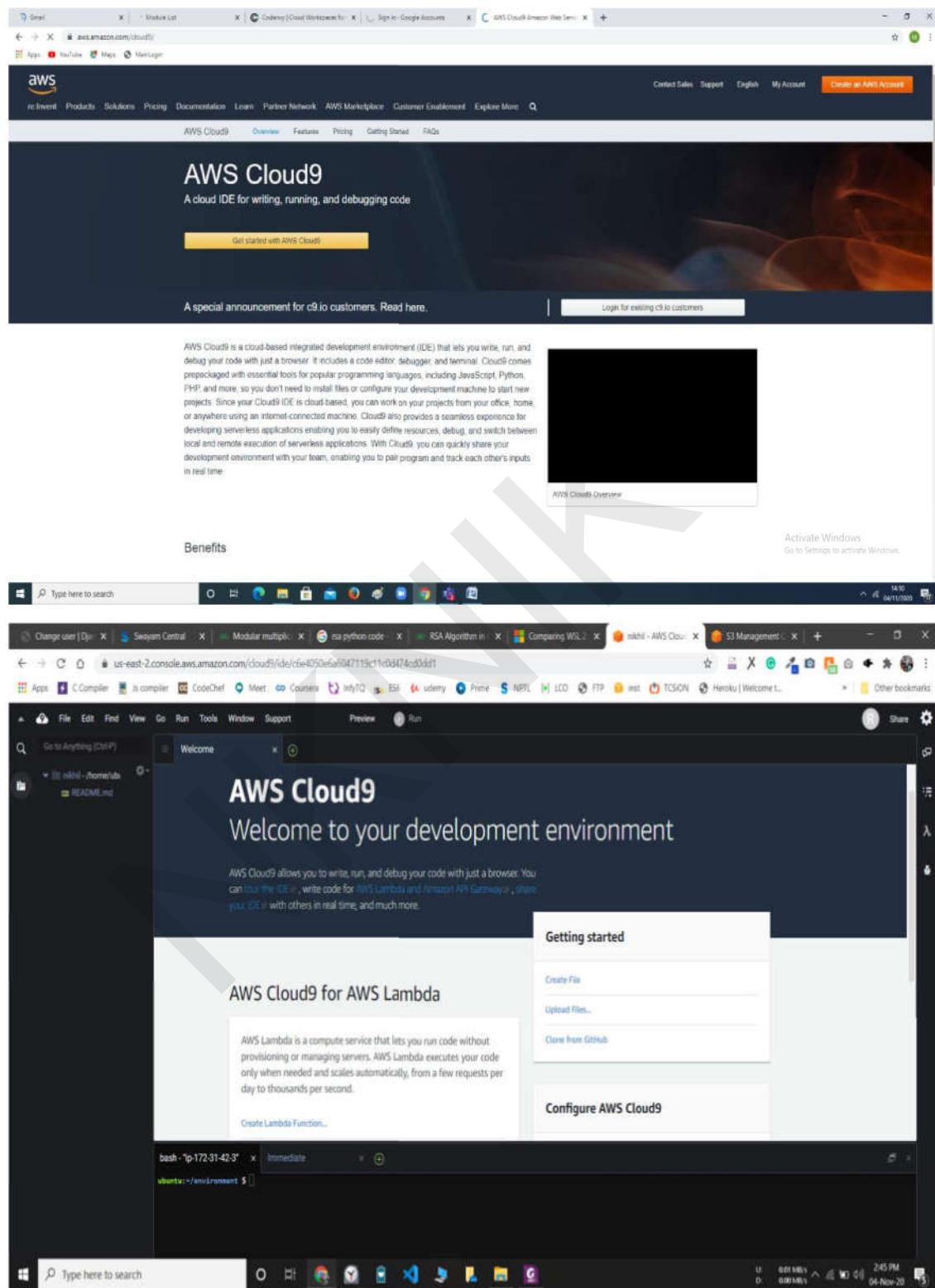
Enter a project name. You will now have three choices for the type of project you wish to create:

- Git project: will allow you to run *git* commands from the console and push your changes to Github
- Mercurial: will allow you to run *hg* commands from the console and push your changes to Bitbucket.
- FTP: will allow you to upload your files directly to an FTP server you have access to.

Make a choice for the type of project and press **Create**. That is all! You will now see your new project in the dashboard:



Conclusion: With the help of given information we can implement cloud9 and different services offered.



Experiment-VI

Aim: Working in Codenvy to demonstrate Provisioning and Scaling of a website.

Requirement: Login account in Codenvy, Cloud Bees.

PaaS overview

One of the advantages of coding in the cloud with Codenvy is deploying to a PaaS of choice once the app has been built, run and tested in Codenvy. Users do not need to install any plugins or administer their workspaces in any way. Codenvy talks to API of most popular PaaS providers. Currently, the following PaaS are supported:

- AppFog
- CloudBees
- AWS Elastic Beanstalk
- Google App Engine
- Heroku
- Openshift
- ManyMo (to run Android apps)

The mechanism of deploying, updating and configuring apps slightly differs depending on the chosen PaaS provider. To be able to deploy to a PaaS authentication is required (**Login** or **Switch Account** in PaaS menus). Codenvy will handle connection to a PaaS account, retrieving information on existing apps and providing tools to manage them.

Some providers will require deploy of SSH keys and git operations to update the apps (Heroku, OpenShift), while others (GAE, AWS) make it possible to update apps in one click.

When deploying an application, it is created in Codenvy and then deployed to a PaaS. OpenShift is an exception from this rule – the application is created there and then pulled to a Codenvy workspace.

It is possible to import existing apps deployed to some PaaS (Heroku) or overwrite existing applications (Google App Engine).

You can find detailed how-to guides on how to get started with PaaS in Codenvy in a PaaS menu on the left sidebar. Check out PaaS support chart:

Registration and Login

There are several registration options available in Codenvy:

- The fastest and the easiest way is to register using your **Google** or **GitHub** account. Click Sign in with Google or GitHub and follow the registration process. Your Codenvy workspace name will be identical to your Google or GitHub ID. Note that you will need a verified email

associated with your GitHub account. If you do not have accounts with Gmail or GitHub or just want to choose a domain name by yourself, enter your email and the desired domain name, and press *Go*.
Getting Started Using Codenvy Factories

You can find Codenvy Factory buttons at his site, Codenvy.com or anywhere on the net. If you click on a Factory button, we will create a temporary workspace for you with the project of your choice. After a fruitful coding session in a temporary workspace you can create a permanent account with Codenvy by pressing Create Account button in the top right corner of a temporary workspace.

Create a Project from Scratch

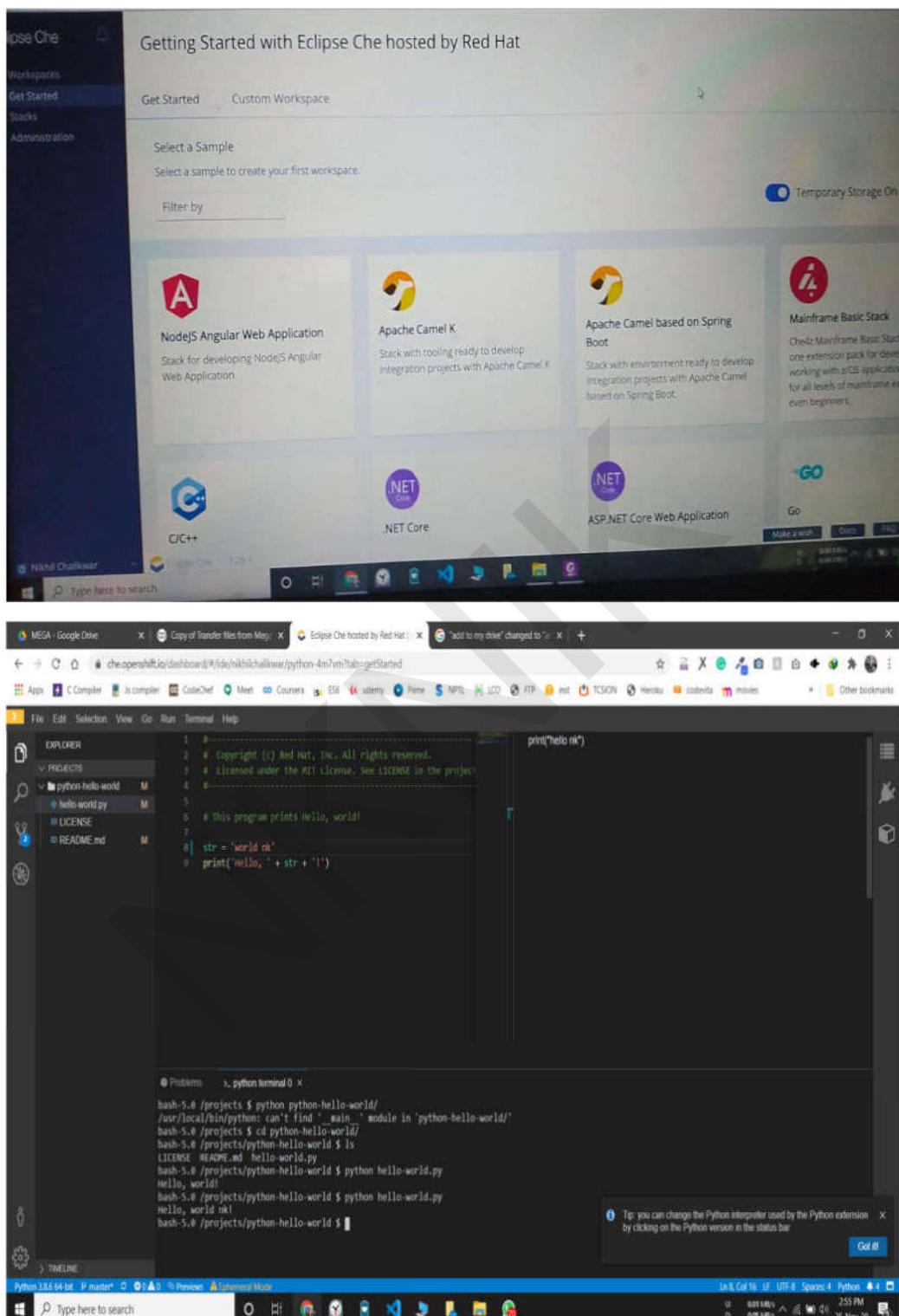
Once logged in to Codenvy, the **Welcome Screen** and **Get Started Wizard** will help you make your first steps. If this is your first visit to Codenvy and you do not have any created projects, you will see the below window. Creation of a new project will barely take 1-2 minutes, and the wizard will guide you through each step (entering project name, choosing a technology and PaaS).

You can also create a new project from the **Welcome Screen - Create a New Project From Scratch**

The next stages depend on whether or not you want to deploy your application to PaaS right way, and what PaaS you have chosen.

Conclusion:

With the help of given information we demonstrate Provisioning and Scaling of a website .



Experiment-VII

Aim: - Implement and configure Google App Engine to deploy Python Program application.

Tools :- Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

Theory :-

- Installing and Running the Google App Engine On Windows**

This document describes the installation of the Google App Engine Software Development Kit (SDK) on a Microsoft Windows and running a simple “hello world” application.

The App Engine SDK allows you to run Google App Engine Applications on your local computer. It simulates the run---time environment of the Google App Engine infrastructure.

- Pre--Requisites: Python 2.5.4**

If you don't already have Python 2.5.4 installed in your computer, download and Install Python 2.5.4 from:

<http://www.python.org/download/releases/2.5.4/>

- Download and Install**

You can download the Google App Engine SDK by going to:

<http://code.google.com/appengine/downloads.html> and download the appropriate install package.

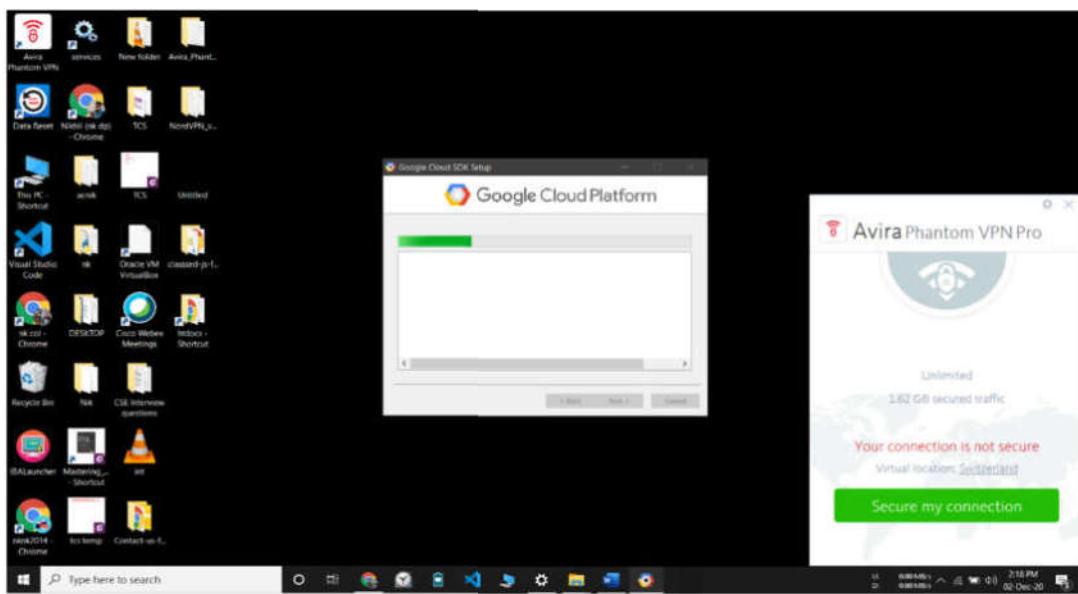
Download the Windows installer – the simplest thing is to download it to your Desktop or another folder that you remember.

- Double Click on the **GoogleApplicationEngine** installer.
- Click through the installation wizard, and it should install the App Engine. If you do not have Python 2.5, it will install Python 2.5 as well.
- Once the install is complete you can discard the downloaded installer
- **Shutting Down the Server**

To shut down the server, use the Launcher, select your application and press the **Stop** button.

Conclusion :-

With the help of given information we can configuration of Google App Engine to deploy Python Program application.



```
C:\WINDOWS\SYSTEM32\cmd.exe
You are logged in as: [s17_chalikwar_nikhil@mcmcnen.ac.in].
Pick cloud project to use:
[1] avian-insight-297408
[2] cybertron-fbc0b
[3] iot-nk-258c8
[4] potent-arcade-282007
[5] Create a new project
Please enter numeric choice or text value (must exactly match list
item): 3

Your current project has been set to: [iot-nk-258c8].

Not setting default zone/region (this feature makes it easier to use
[gcloud compute] by setting an appropriate default value for the
--zone and --region flag).
See https://cloud.google.com/compute/docs/gcloud-compute section on how to set
default compute region and zone manually. If you would like [gcloud] able to do this for you the next time you run it, make sure the
Compute Engine API is enabled for your project on the
https://console.developers.google.com/apis page.
```

Experiment-VIII

Aim: - Installation and configuration of virtual machine with guest OS

Tools :- Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

Theory :-

Oracle VM VirtualBox is an open source virtualization software that you can install on various x86 systems. You can install Oracle VM Virtualbox on top of Windows, Linux, Mac, or Solaris. Once you install the virtualbox, you can create virtual machines that can be used to run guest operating systems like Windows, Linux, Solaris, etc. On a high-level [Oracle VM VirtualBox](#) is similar to VMware. Oracle got this VirtualBox technology from Sun.

.Installing VirtualBox

- <http://download.virtualbox.org/virtualbox/debian/natty/contrib>
- Next, download the public key and register with apt-key for signature verification
- `wget -q http://download.virtualbox.org/virtualbox/debian/oracle_vbox.asc -O- | sudo apt-key add -`
 - Finally, installing VirtualBox as shown below.
- `sudo apt-get update`
- `sudo apt-get install dkms`
- `sudo apt-get install virtualbox-4.1`

After successful installation a command named “virtualbox” will be created. Also you can access VirtualBox from “Application -> System Tools” menu.

➤ Creating a Virtual Machine (For Guest OS)

- Open Application -> System Tools -> VirtualBox (Command name is “virtualbox”)
- Click Machine -> New. This will launch a “Create New Virtual Machine” wizard. Click Next.

- Enter the name of the Guest machine as you desire and choose the Operating system and Version that you are planning to install as follows, and click “Next”.
- Enter the RAM size that you want to provide to your Guest machine as follows.

Now it will ask you to choose your “Virtual Hard Disk” for installing the guest OS as follows.

- Create “New Virtual Disk” wizard will open. Click Next
- Now we need to choose, whether the disk has to be “Dynamically expanding disk” or “Fixed-size storage”. Choose “Dynamic storage” and click Next.
- Now a new “Virtual Machine” is created and it will be in “power off” state.
 - Installing OS in a Virtual machine

We can install any OS (personally tested windows and linux) on a virtual machine. We can install the OS in virtual machine by 2 methods

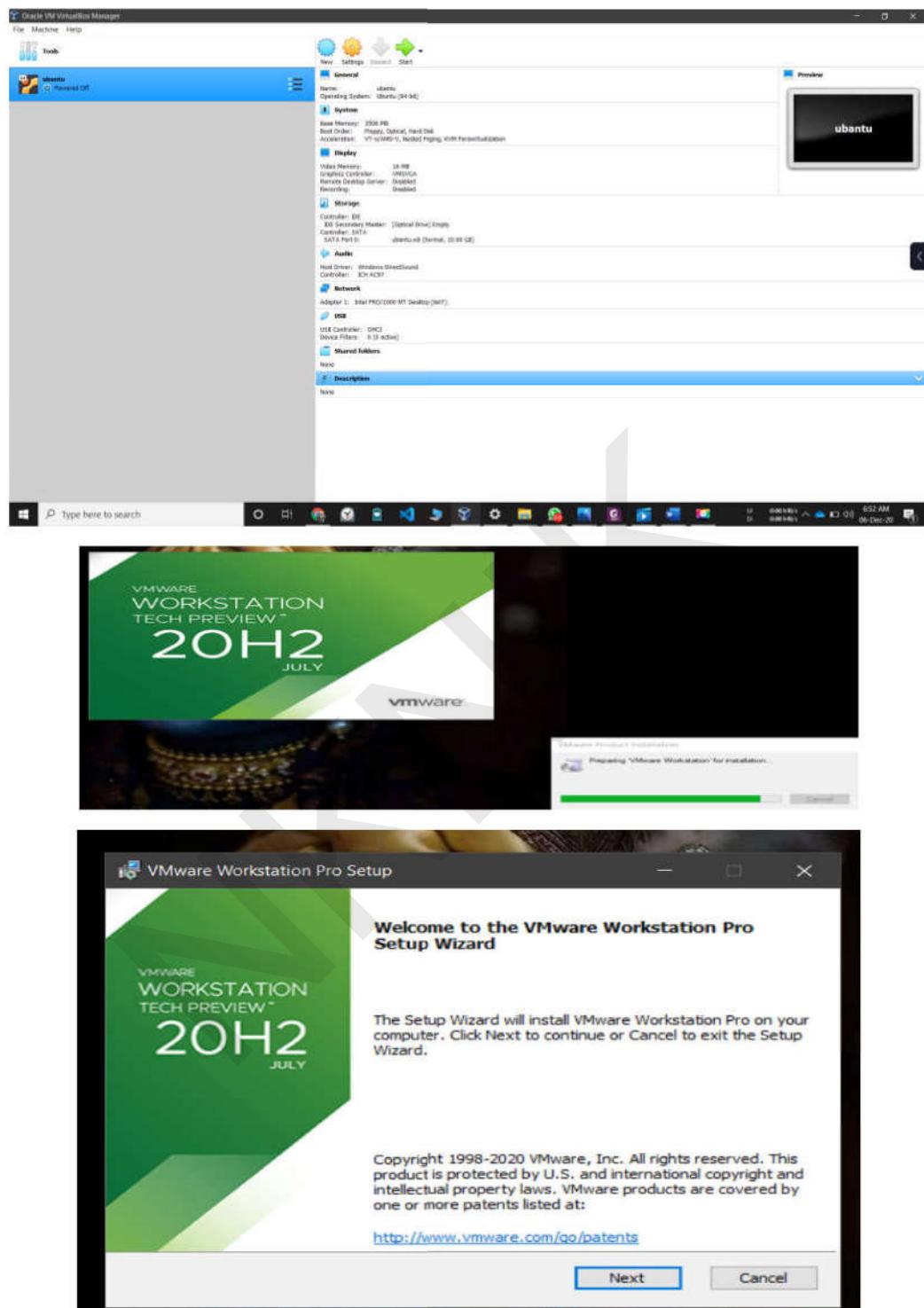
- Through OS-DVD
- Through ISO image of the OS

Here we will cover the installation using an ISO image, although using DVD is very similar to this. Make sure that the iso file of your distribution is present in the host machine. Launch “virtualbox”. Select the newly created virtual machine. Click “Settings”.

Now a new window will open which will list out the settings group on left panel and actual setting on the right side

Conclusion :-

With the help of given information we can configure virtual machine with guest OS



Ubuntu 64 bit - VMware Workstation

Activities Terminal Sep 12 13:53 nikhil-nk@nikhil-nk: ~ Modified

```
GNU nano 4.8 /etc/samba/smb.conf
read only = yes
create mask = 0700

# Windows clients look for this share name as a source of downloadable
# printer drivers
[print$]
comment = Printer Drivers
path = /var/lib/samba/printers
browseable = yes
read only = yes
guest ok = no

# Uncomment to allow remote administration of Windows print drivers.
# You may need to replace 'lpadmin' with the name of the group your
# admin users are members of.
# Please note that you also need to set appropriate Unix permissions
# to the drivers directory for these users to have write rights in it
; write list = root, @lpadmin

[sambashare]
comment = samba share on ubuntu18.04
path= /home/nikhil-nk/sambashare
read only= no
browsable= yes
guest ok = no

^G Get Help ^O Write Out ^W Where Is ^K Cut Text
^X Exit ^R Read File ^\ Replace ^U Paste Text ^I To Spell
```

To direct input to this VM, click inside or press Ctrl+G

P Type here to search Fri 14:23 nikhil@nikhil-VirtualBox: ~ Modified

Activities Terminal nikhil@nikhil-VirtualBox: ~ Modified

```
GNU nano 2.9.3 /etc/squid/squid.conf
# not all I/O types supports large values (eg on Win$ Default:
# Use operating system limits set by ulimit.

acl localnet src 192.168.0.0/24
acl localnet src 10.0.2.15
acl Safe_ports port 4444
acl bad_urls dstdomain "/etc/squid/block_sites.acl"
http_access deny bad_urls

^G Get Help ^O Write Out ^W Where Is ^K Cut Text
^X Exit ^R Read File ^\ Replace ^U Uncut Text
```

P Type here to search Fri 14:16 nikhil@nikhil-VirtualBox: ~ Modified

Activities Terminal nikhil@nikhil-VirtualBox: ~ Modified

```
# Default:
# Deny, unless rules exist in squid.conf.
#
# Recommended minimum Access Permission configuration:
#
# Deny requests to certain unsafe ports
http_access deny !Safe_ports
http_access allow Safe_ports
# Deny CONNECT to other than secure SSL ports
http_access deny CONNECT !SSL_ports

^G Get Help ^O Write Out ^W Where Is ^K Cut Text
^X Exit ^R Read File ^\ Replace ^U Uncut Text
```

P Type here to search Fri 14:16 nikhil@nikhil-VirtualBox: ~ Modified

Experiment-IX

Aim: *Design and analyze architecture of Aneka / Eucalyptus / KVM identify different entities to understand the structure of it*

Requirement: ECMA Runtime Environment, Database

THEORY:

Aneka is a Cloud Application Development Platform (CAP) for developing and running compute and data intensive applications. As a platform it provides users with both a runtime environment for executing applications developed using any of the three supported programming models, and a set of APIs and tools that allow you to build new applications or run existing legacy code. The purpose of this document is to help you through the process of installing and setting up an Aneka Cloud environment. This document will cover everything from helping you to understand your existing infrastructure, different deployment options, installing the Management Studio, configuring Aneka Daemons and Containers, and finally running some of the samples to test your environment.

Installing Aneka Cloud Management Studio

Aneka installation begins with installing Aneka Cloud Management Studio. The Cloud Management Studio is your portal for creating, configuring and managing Aneka Clouds. Installing Aneka using the distributed Microsoft Installer Package (MSI) is a quick process involving three steps as described below.

Step 1 – Run the installer package to start the Setup Wizard

The Welcome Page is self-explanatory and you can proceed by clicking next.

Step 2 – Specifying the installation folder

In Step 2 you specify the installation folder. By default Aneka is installed in C:\Program Files\Manjrasoft\Aneka.3.0.

Step 3 – Confirm and start the installation

At this point you are ready to begin the installation. Click “Next” to start the installation or “Back” to change your installation folder. Once the installation is complete, close the wizard and launch Aneka Management Studio from the start menu.

Aneka Cloud Management Studio

The Aneka Cloud Management Studio is your portal for managing your infrastructure and clouds. It provides facilities for defining your underlying cloud infrastructure and creating one or more Aneka Clouds on top. It lets you create and manage Aneka user accounts, monitor the overall performance of your Cloud, obtain detailed reporting information on resource usage, data transfers, billing and

application (job) execution. It also provides facilities for troubleshooting your deployments by allowing you to access and examine remote logs.

Starting up Management Studio

Figure - Starting Aneka Cloud Management Studio for the first time.

When Aneka Cloud Management Studio is started up for the first time you'll be asked to create a Remote Repository for performing remote installations. Setting up a Remote Repository requires selecting a suitable repository type and supplying valid credentials which remote machines can use to connect and download required files. You may however choose to create this repository at a late time before making remote installations. If no repository is defined, you will be restricted to making local installations only.

Shutting down Aneka Management Studio

When attempting to shut down Aneka Management Studio, you will be given the choice of saving all configuration data from the current session. It is highly recommended that you save this information and restore it the next time you start using the Management Studio.

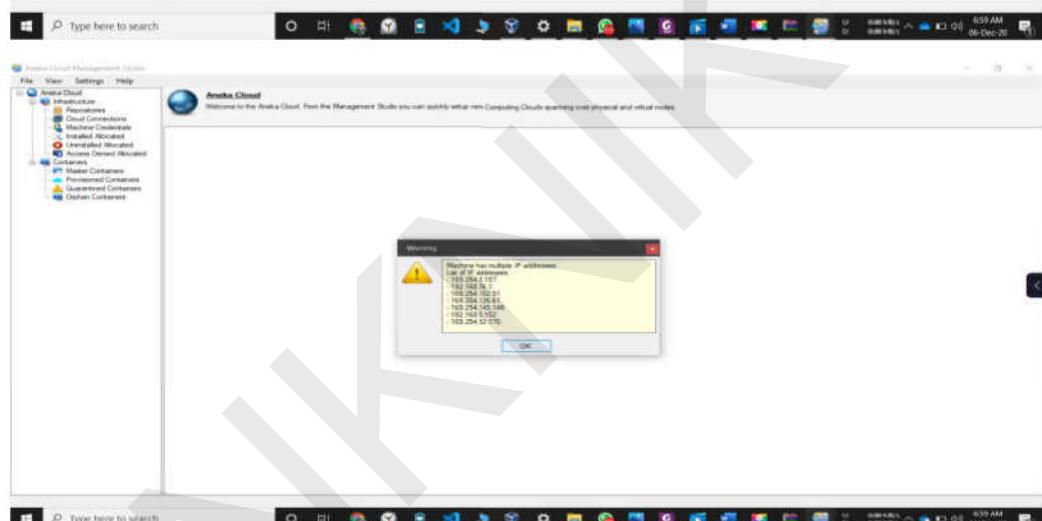
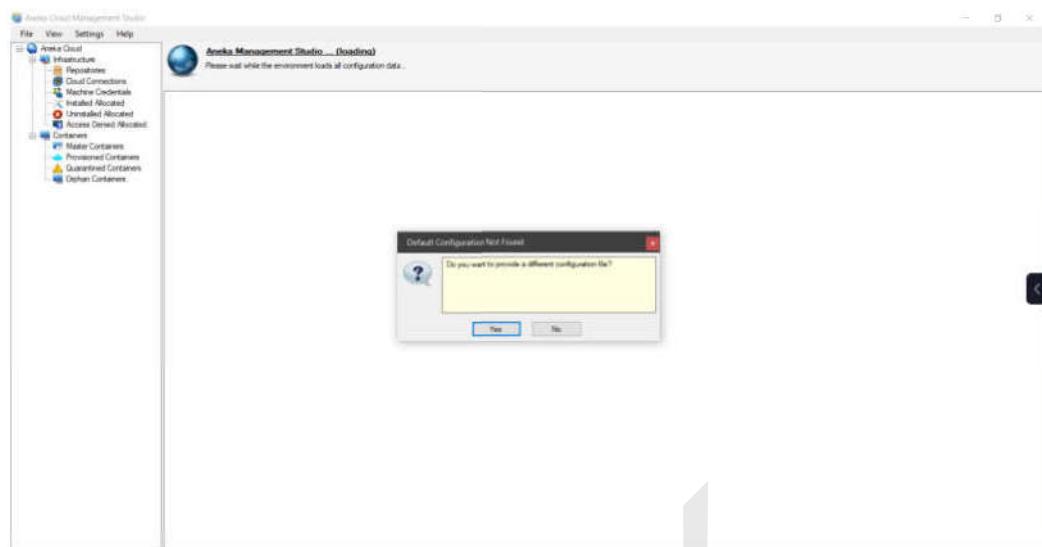
The Configuration File

The configuration file, Management Studio.config, contains all information that describes your infrastructure, your Clouds, the machine credentials, repositories and authentication keys (see section on installing the Master Container) that you defined when using Aneka Management Studio.

It is recommended that you save this information when you exit Management Studio so that you can restore it at a later session, and get up-to-speed with your Cloud management without having to redefine all settings again. Some configuration information, such as authentication keys, must be maintained safely if you are to add new Containers to your existing Cloud. Losing an authentication key however, is not detrimental as you will be able to reconfigure your clouds with a new key.

Conclusion :-

With the help of given information we can configure Mangrasoft Aneka Software



Experiment-IX

AIM : Install a C compiler in the virtual machine created using virtual box and execute sample Programs.

Theory :

I. Install Virtual Box

1. Visit <http://www.virtualbox.org/wiki/downloads>
2. Download VirtualBox platform packages for your OS
3. Open the Installation Package by double clicking
4. Click continue and finish installing VirtualBox
5. When finished installation, close the window.

II. Download Linux

1. Visit the page <http://www.ubuntu.com/download/ubuntu/download>
 2. Choose the Latest version of Ubuntu and 32-bit and click Start Download
 3. Run VirtualBox by double-clicking the icon
 - 4.. Click “New” button on the top left corner
 5. Click “Continue” on the pop-up window
 - 6.Type VM name, select “Linux” for the OS and choose “Ubuntu” for the version.
 7. Choose the amount of memory to allocate (I suggest choosing between 512 MB to 1024 MB)
 8. Click Continue or Next
 9. Choose create a new virtual hard disk
 - 10.Click Continue or Next
 11. Choose VDI (VirtualBox Disk Image)
 12. Click Continue or Next
- III. Programming on Linux
- 1.Open Terminal (Applications-Accessories-Terminal)
 2. Open gedit by typing gedit & on terminal (You can also use any other Text Editor application)
 3. Type the following on gedit (or any other text editor)
 4. Save this file as “helloworld.c”
 5. Type “gcc helloworld.c” to compile, and type “ls” to confirm that a new executable File “a.out” is created .Type “./a.out” on Terminal to run the program
 6. If you see “Hello World” on the next line, you just successfully ran your first C program

Conclusion :-

With the help of given information we can configure C compiler in the virtual machine

Activities Text Editor ~

```
#include <stdio.h>
int main() {
    int num, originalNum, remainder, result = 0;
    printf("Enter a three-digit integer: ");
    scanf("%d", &num);
    originalNum = num;

    while (originalNum != 0) {
        // remainder contains the last digit
        remainder = originalNum % 10;

        result += remainder * remainder * remainder;
        // removing last digit from the original number
        originalNum /= 10;
    }

    if (result == num)
        printf("%d is an Armstrong number.", num);
    else
        printf("%d is not an Armstrong number.", num);

    return 0;
}
```

Activities Text Editor ~

```
#include<stdio.h>
int main()
{
    int n1=0,n2=1,n3,i,number;
    printf("Enter the number of elements:");
    scanf("%d",&number);
    printf("\n%d %d",n1,n2); //printing 0 and 1
    for(i=2;i<number;i++) //loop starts from 2 because 0 and 1 are already printed
    {
        n3=n1+n2;
        printf(" %d",n3);
        n1=n2;
        n2=n3;
    }
    return 0;
}
```

Activities Terminal ~

```
nikhil@nikhil-VirtualBox:~$ gedit fib.c
nikhil@nikhil-VirtualBox:~$ gedit arm.c
nikhil@nikhil-VirtualBox:~$ gcc fib.c
nikhil@nikhil-VirtualBox:~$ ./a.out
a.out command not found
nikhil@nikhil-VirtualBox:~$ ./a.out
Enter the number of elements:55
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765 10946 1771
1488285 24157817 39088109 63245986 102334155 165580141 2679142
5702887 9227465 14936352 24157817 39088109 63245986 102334155 165580141 2679142
96 433494437 701406733 1134903170 1836311903 -1323752223 512559680 -811192543 -
298632863 -1109825466 -1408458269 1776683621 368225352nikhil@nikhil-VirtualBox:
~$ gcc arm.c
nikhil@nikhil-VirtualBox:~$ ./a.out
Enter a three-digit integer: 55
55 is not an Armstrong number.nikhil@nikhil-VirtualBox:~$ ./a.out
Enter a three-digit integer: 656
656 is not an Armstrong number.nikhil@nikhil-VirtualBox:~$
```

Experiment-XI

Aim : - Implement and analyze the importance of cloud security management from application point of view with Amazon Web Service (AWS)

Requirement: Ubuntu operating system, Virtual machine, WAMP/ZAMP server, Any tool or technology can be used for implementation of web application e.g., JAVA, PHP, etc.

THEORY:

Cloud computing security is the set of control-based technologies and policies designed to adhere to regulatory compliance rules and protect information, data applications and infrastructure associated with cloud computing use. Because of the cloud's very nature as a shared resource, identity management, privacy and access control are of particular concern. With more organizations using cloud computing and associated cloud providers for data operations, proper security in these and other potentially vulnerable areas have become a priority for organizations contracting with a cloud computing provider.

Security using MFA(Multi Factor Authentication) device code:

- 1) goto aws.amazon.com
- 2) click on "My Account"
- 3) select "AWS management console" and click on it
- 4) Give Email id in the required field if you are registering first time then select "I am a new user" radio button
- 5) click on "sign in using our secure server" button
- 6) follow the instruction and complete the formalities
(Note: do not provide any credit card details or bank details) sign out from
- 7) Again goto "My Account"
select "AWS management console" and click on it Sign in again by entering the user name and valid password (check "I am returning user and my password is" radio button)

Now you are logged in as a Root User

All AWS project can be viewed by you, but you cant make any changes in it or you cant create new thing as you are not paying any charges to amazon (for reason refer step:6)



Conclusion:

We have studied how to secure the cloud and its data. Amazon AWS provides the best security with its extended facilities and services like MFA device.

The screenshot shows a Microsoft Edge browser window with multiple tabs open. The active tab displays the AWS Sign In page, which asks for a root user or IAM user and a root user email address (set to nft_chellwar.nikhil@gmail.com). Below the sign-in form is a note about Amazon AWS Sign In. To the right of the sign-in form is a promotional banner for AWS re:Invent 2017, titled "What's New in Analytics".

The second tab shows the EC2 Management console, specifically the EC2 Dashboard. It features a prominent "Launch instance" button. The dashboard also displays "Service health" information for the US East (Ohio) region, showing three zones (us-east-1a, us-east-1b, us-east-1c) all operating normally. It also shows "Zone status" for these same three zones. On the right side of the dashboard, there are promotional cards for "Get Up to 40% Better Price Performance", "Launch Custom AMIs with Fast Snapshot Restore (FSR)", and "Save up to 90% on EC2 with Spot Instances".

