

Practical: 01 Working on Google Drive to Make Spreadsheets and Notes

Step 1: Open Google Chrome Page No 506 Lab on Cloud Computing Step 2 : go to the [Google Account Creation Page](<https://accounts.google.com/signup>). Step 3: Enter your name Step 4: Enter your birthday and gender Step 5: Create a Gmail address for signing in to your Google Account Page No 506 Lab on Cloud Computing Step 6: Create a strong password Step 7: Enter your phone number for verification. Page No 506 Lab on Cloud Computing Step 8: Google will send a verification code via SMS. Enter the code when prompted Step 9: Provide a recovery email Step 10: Agree to the terms and conditions. Page No 506 Lab on Cloud Computing Step 11: Your Google account will be created, and you'll be redirected to your Google dashboard Page No 506 Lab on Cloud Computing A)For Google Sheets: Step 1: Open Google Chrome Step 2: search for google account sign in Step 3: click on the google apps Page No 506 Lab on Cloud Computing Step 4: click on the google drive Step 5: On the Google Drive home page, click the + New button in the top-left corner. Step 6: From the dropdown menu, select Google Sheets Page No 506 Lab on Cloud Computing (Or) Search Google Sheets on the browser and click on the official link of Google Workspace Step 7: Sign in to Google Sheets and select a blank document. Step 8: A new spreadsheet will open in a new tab. You can start editing it by entering data into the cells. Page No 506 Lab on Cloud Computing Step 9: Make a random table. Step 10: Rename the document as needed. Step 11: click on "in my Drive" option. Page No 506 Lab on Cloud Computing Step 12: Now create a folder by clicking on the button on bottom left of dialog box Step 13: Open the folder and click on "Move" button: Page No 506 Lab on Cloud Computing Step 14: Click on move : Step 15: Practical has finished, now you can see the folder with the file created in your respective Google Drive account Page No 506 Lab on Cloud Computing b)For Google Docs : Step 1: Open Google Chrome Step 2: search for google account sign in Page No 506 Lab on Cloud Computing Step 3: click on the google apps Step 4: click on the google drive Step 5: On the Google Drive home page, click the + New button in the top-left corner. Page No 506 Lab on Cloud Computing Step 6: From the dropdown menu, select Google Docs (or) Search Google Sheets on the browser and click on the official link of Google Workspace Page No 506 Lab on Cloud Computing Step 7: select a blank document. Step 8: Open it and write a random paragraph Step 9: Rename the document as needed. Page No. Step 10: click on "in my Drive" option: Step 11: click on "in my Drive" option: Page No 506 Lab on Cloud Computing Step 12: Now create a folder by clicking on the button on bottom left : Step 13: Click on move : Page No 506 Lab on Cloud Computing Step 14: Practical has finished, now you can see the folder with the file created in your respective Google Drive account

Practical: 02: Installation and Configuration of JustCloud.

Step 1: Open your browser (e.g., Chrome, Firefox, or Edge). **Page No 506 Lab on Cloud Computing**

Step 2: In the address bar at the top, type <https://www.justcloud.com/download> and hit Enter.

Step 3 : click on the Download Application download will automatically start

Page No 506 Lab on Cloud Computing 2. Install JustCloud:

Step 1: Once the file is downloaded, go to your Downloads folder. Look for the JustCloud installer file (JustCloud_WebInstaller .exe for Windows or .dmg for macOS).

Step 2: Double-click the installer file with the left mouse button to start the installation process

Step 3: If prompted by a security warning, click "Yes"

Step 4: click on Install button .

Page No 506 Lab on Cloud Computing Step 4 : Once completed, click "Finish" to launch JustCloud.

2. Create or Log into Your JustCloud Account :

Step 1 : After installation, JustCloud will automatically open.

Page No 506 Lab on Cloud Computing Step 2:

On the login screen

- If you already have an account, enter your username and password and click "Log In" with the left mouse button.
- If you don't have an account, click "Sign Up" at the bottom left of the screen

Page No 506 Lab on Cloud Computing Justcloud doesn't want to accept any new customers (If account is created in JustCloud)

3. Set Up Backup:

- 1) Once logged in, you'll see the JustCloud dashboard.
- 2) On the dashboard, find the Settings icon (gear symbol) in the top right.
- 3) Click "Backup Settings" on the left side.
- 4) Choose the file types (photos, music, documents) you want to back up by checking the boxes.
- 5) Select the folders you want by clicking "Browse" on the right side.
- 6) Click "Apply".

4. Start the Backup:

- 1) Click the "Start Backup" button in the center of the screen.
- 2) JustCloud will begin backing up your files.
- 3) Watch the progress bar at the bottom.

5. Restore Files:

- 1) If you want to restore files, click the "Restore" tab at the top left.
- 2) Pick the files or folders you want to restore, then cl

Practical: 03: Implementing Virtual Machines with VirtualBox:

Step 1: Go to Google Chrome. **Page No 506 Lab on Cloud Computing**

Step 2: Search for "Oracle VM VirtualBox" on a browser and click on the official link

Step 3: click on the Download VirtualBox 7.0. 20

Step 4: Choose your operating system (Windows, macOS, Linux) header select your "VirtualBox Platform Packages" and click the corresponding link.

Step 5: Wait for Downloading file

Page No 506 Lab on Cloud Computing Step 6: Once the file is downloaded, go to your Downloads folder. Look for the Just installer file

Step 7: Double-click the installer file with the left mouse button to start the installation process

Page No 506 Lab on Cloud Computing Step 8: After installation is complete, launch VirtualBox.

2. Download an Operating System ISO

Step 1: Select an OS: Visit the official website of your preferred operating system (e.g., Ubuntu)

Step 2: click on the Download 24.04 LTS

Page No 506 Lab on Cloud Computing Step 3 : Downloading is started

3. Create a New Virtual Machine:

Step 1 : Open VirtualBox: Launch VirtualBox from your desktop or Start menu. Click on the machine Located at the top-left of the VirtualBox window.

Step 2 : Click on "New" button

Page No 506 Lab on Cloud Computing Step 3: A pop-up window titled "Create Virtual Machine" will appear

Step 4: In the

"Name" field, give a name to your VM. Step 5: Select the Type of the OS (e.g ubuntu, Linux, Windows) Step 6 : Set the Username and Password Click "Next." Page No 506 Lab on Cloud Computing Step 7: Allocate Memory (Select the size of memory & no of CPU cores you want to allocate to your VM) Click "Next." Step 8: Create a Virtual Hard Disk (Select the size of storage you want to allocate) Click "Next." Step 9: Summary(Verify if the information about your VM is correct) click on finish Page No 506 Lab on Cloud Computing Step 10: Start the VM(In the main VirtualBox window, click the Start button at the top) Step 11: Now you need to setup your OS click on the Ubuntu(safe Graphics) Step 12: now you can used the ubuntu Page No 506 Lab on Cloud Computing

Practical: 04: Setting up a Cloud Environment with OpenStack

Step 1 : Open VirtualBox: Launch VirtualBox from your desktop or Start menu. Click on the machine Located at the top-left of the VirtualBox window. Step 2 : Click on "New" button Step 3: A pop-up window titled "Create Virtual Machine" will appear Step 4: In the "Name" field, give a name to your VM. Page No 506 Lab on Cloud Computing Step 5: Select the Type of the OS (e.g ubuntu, Linux, Windows) Step 6 : Set the Username and Password Click "Next." Step 7: Allocate Memory (Select the size of memory & no of CPU cores you want to allocate to your VM) Click "Next." Page No 506 Lab on Cloud Computing Step 8: Create a Virtual Hard Disk (Select the size of storage you want to allocate) Click "Next." Step 8: Summary(Verify if the information about your VM is correct) click on finish Page No 506 Lab on Cloud Computing Step 8: Start the VM(In the main VirtualBox window, click the Start button at the top) Step 8: Now you need to setup your OS click on the Ubuntu(safe Graphics) Step 9: now you can used the ubuntu Page No 506 Lab on Cloud Computing 2. Steps to Install OpenStack on Ubuntu VM Click on the terminal : Page No 506 Lab on Cloud Computing Step 1: Update Ubuntu System First, update your Ubuntu VM: Sample Output:- Step 2: Create a Stack User DevStack must be run as a non-root user. Create a new user named stack: Give the stack user sudo privileges: Sample Output:- `apt update -y && apt upgrade -y sudo adduser -s /bin/bash -d /opt/stack -m stack echo "stack ALL=(ALL) NOPASSWD: ALL" | sudo tee /etc/sudoers.d/stack` Page No 506 Lab on Cloud Computing Step 3: Install OpenStack DevStack on Ubuntu Once you have successfully created the user 'stack' and assigned sudo privileges, switch to the user using the command. You'll need Git to clone the DevStack repository. Sample output: Using git, clone devstack's git repository as shown. Sample output : `su - stack sudo apt install git -y git clone https://git.openstack.org/openstack-dev/devstack` Page No 506 Lab on Cloud Computing Step 4: Create devstack configuration file : In this step, navigate to the devstack directory. Then create a local.conf configuration file. Paste the following content Step 5: Start DevStack Installation Run the stack.sh script to install OpenStack: `cd devstack vim local.conf`
`[[local|localrc]] # Password for KeyStone, Database, RabbitMQ and Service
ADMIN_PASSWORD=StrongAdminSecret DATABASE_PASSWORD=$ADMIN_PASSWORD`

RABBIT_PASSWORD=\$ADMIN_PASSWORD SERVICE_PASSWORD=\$ADMIN_PASSWORD # Host IP - get your Server/VM IP address from ip addr command HOST_IP=10.208.0.10 ./stack.sh

Practical: 05: Setting Up a Simple Website on GitHub:

Step 1: Search for GitHub in a browser. Page No 506 Lab on Cloud Computing Step 2: Log in to your GitHub account. Step 3: On the top-right corner, click the + icon, then select New repository from the dropdown. Step 4: Name your repository (e.g., my-website), set it to Public, and tick the "Initialize this repository with a README" option.. Page No 506 Lab on Cloud Computing Step 5: Click the "Create repository" button (bottom of the form). 2: Upload Your Website Files Step 1: Click the "Add file" button (top-right side). Page No 506 Lab on Cloud Computing Step 2: Select "Upload files" from the dropdown. Step 3: select all files(Ctrl + A) Page No 506 Lab on Cloud Computing Step 4: Drag and drop your website files (HTML, CSS, images) into the upload area or click the "choose your files" button to browse. Step 5: uploading the files Step 6: After uploading the files, scroll down and click the "Commit changes" button (bottom-left). Page No 506 Lab on Cloud Computing 3: create link Step 1: Click on the "Settings" tab (top-right corner of the repository page). Step 2: On the left sidebar, scroll down and select "Pages". Page No 506 Lab on Cloud Computing Step 3 : In the "Source" section, select the branch as "main" and folder as "/" (root)". Step 4 : click on save (wait for some time) Page No 506 Lab on Cloud Computing Step 5: create link for files are upload Step 6:uploading Page No 506 Lab on Cloud Computing Step 6: In the "Pages" section we can create link 4: View Your Live Website Step 1: copy the url paste on google chrome or (Click on the Visit site) Page No 506 Lab on Cloud Computing

Practical: 06: Introduction to Cloud CRM (Salesforce).

Step1: Go to Google Chrome. Page No 506 Lab on Cloud Computing Step 2: Search for “Developer Edition Signup” on a browser and click on the official link Step 3: Fill in your details: 1. First Name 2. Last Name 3. Email (Use a valid email address) 4. Job Title (Choose "Student" or leave it blank if not applicable) 5. Company (Use "Self" if not part of a company) 6. Country Page No 506 Lab on Cloud Computing Step 4: Click on: "Sign Me Up" (Right side button) Step 5: Verify your email: A) Go to Google Chrome. Page No 506 Lab on Cloud Computing B) Search for “Email” on a browser and click on the official link C) Check your inbox for the verification email from Salesforce. D) Click on the link in the email to verify your account.(Change Your Password) Page No 506 Lab on Cloud Computing 2: Log into Salesforce Developer Account Step1: Go to Google Chrome. Step 2: Search for “ Salesforce login ” on a browser and click on the official link Step 3: Enter your • Username (email you used for signing up) • Password Page No 506 Lab on Cloud Computing 3: Understand the Salesforce Interface Step 1:Enter Salesforce: Once logged in, you'll be in your Salesforce environment. Step 2:Go to the App Launcher: On the top left, you'll see the App Launcher (the icon with 9

dots). Step 3: Search for "Accounts": In the search bar within the App Launcher, type "Accounts" and select it. Page No 506 Lab on Cloud Computing Step 4: Create a New Account: Once you're in the Accounts section, click on the "New" button to create a new account. Step 5: Fill in Account Information: Provide the account details Page No 506 Lab on Cloud Computing Step 6: Save the New Account: After filling out the account details, click "Save" to create the new account. Step 7 : Open the New Account: Once saved, you'll be taken to the new account's page. Step 8: Create a New Contact: In the account's details page, look for the "Contacts" section and click "New" to add a new contact. Page No 506 Lab on Cloud Computing Step 9 : Fill in Contact Information: Enter the contact details, like: Step 10 : Send an Email: In the new contact's page, go to the "Activity" section on the right side. Step 11 : Here, you'll see an option to send an email. Page No 506 Lab on Cloud Computing Step 12: Here, send an email to Contact.

Practical: 07: : Data Analytics on the Cloud (Salesforce):

Step 1: Open Google Chrome Page No 506 Lab on Cloud Computing Step 2: search for salesforce login Step 3: Enter your username and password, and click the "Log in" button (top-right side). Step 4: Verify your identity in Salesforce Page No 506 Lab on Cloud Computing Step 5: Once logged in, you will be on the Salesforce dashboard. Step 6: Once logged in, you will be on the Salesforce dashboard. 2 .Navigate to the Reports Tab Step 1: Click the "App Launcher" button (top-left corner, represented by 9 dots). Page No 506 Lab on Cloud Computing Step 2: Search for "Reports" in the search bar and click on the "Reports" tab (left-side list). Step 3: This will take you to the Reports section where you can manage and create reports. Page No 506 Lab on Cloud Computing 3: Create a New Report Step 1: On the Reports page, click the "New Report" button (top-right corner). Step 2: Select All then you select the type of report you want to create (e.g., Accounts, Opportunities, Leads). Page No 506 Lab on Cloud Computing Step 3: Click the "Start Report" button (right). 4: Customize Your Report Step 1: Choose your data filters by clicking on the "Filters" pane (left side). Page No 506 Lab on Cloud Computing Step 2: Click on the Created Date Step 3: Click on the Range select All Time and Click on the Apply Page No 506 Lab on Cloud Computing Step 4: Click on Update Preview Automatically on the (top-right corner). Step 5: Add Filter Page No 506 Lab on Cloud Computing Step 6: I can select the Rating Step 7: Go to the Value and select any one from the dropdown list Page No 506 Lab on Cloud Computing Step 8: the report will be sorted according to the filters you've applied: Step 9: After running the report, click the "Save & Run" button (top- right corner). Page No 506 Lab on Cloud Computing Step 10: Enter a name for your report (e.g., "Sales Performance Report") and choose a folder to save it in. Step 11: Click the "Save" button (bottom-right). Page No 506 Lab on Cloud Computing 5. Create a Dashboard for Data Visualization Step 1: Go to the App Launcher button (top-left corner, represented by 9 dots). Page No 506 Lab on Cloud Computing Step 2: Search for "Dashboards" and click on it

(left-side list). Step 3: On the Dashboards page, click the "New Dashboard" button (top-right corner). Page No 506 Lab on Cloud Computing Step 4: Enter a dashboard name (e.g., "Sales Overview") and select a folder to save it in. Step 5: Click the "Create" button (bottom-right). Page No 506 Lab on Cloud Computing 6: Add Components to the Dashboard Step 1: Click on "Add Component" (top-right corner). Step 2: Click on the Chart or Table Step 3: Choose a report from the list (you can use the one you created earlier). Page No 506 Lab on Cloud Computing Step 4: Click the "Add" button (bottom-right). Step 5: You can drag and drop components on the dashboard to arrange them. Page No 506 Lab on Cloud Computing Step 6: You can also add an image to your dashboard by clicking on the "Widget" dropdown and clicking on "Image" button: Step 7: You can now browse and select an image you would like to add to your dashboard scale(stretch) click on add Page No 506 Lab on Cloud Computing 7: Save and View the Dashboard Step 1: After adding all necessary components, click the "Save" button (top- right corner) Step 2: Click the "Done" button (bottom-right) to view your completed dashboard. Page No 506 Lab on Cloud Computing

Practical: 08: : Introduction to Amazon AWS S3:

Step 1: Go to Google. Step 2: Search for the official AWS website (or directly go to aws.amazon.com). Page No. Step 3: Once you're on the official AWS website, click on "Create an AWS account" at the top right. Step 4: Enter your root user email address and AWS account name, then click on "Verify email address". Page No. Step 5: Enter the verification code that you received in your email. Step 6 : Set a password for your AWS account and confirm it by entering it again. Page No. Step 7 : Fill in your contact information (full name, phone number, address, etc.). Step 8: Enter your billing information (credit/debit card number, etc.). Step 9: Ensure your card has domestic e-commerce transactions activated. If it's not activated, you won't be able to complete the signup process. Page No. (If you can enter the AWS cloud) Once domestic e-commerce transactions are activated, you can successfully enter the AWS cloud platform. Step 1: Now you are in the AWS Management Console (Dashboard). Page No. Step 2: In the search bar at the top left, type S3 Step 3: select S3 from the dropdown. Step 4: On the Amazon S3 page, click on "Create bucket". Page No. Step 5: In the Create bucket page, Step 6: choose an AWS Region (select the region closest to you), Step 7: Enter a name for your bucket (make sure it is globally unique). Page No. Step 8: Scroll down to the Block Public Access section. Uncheck the box to allow public access (if you want your site to be publicly accessible). Step 9: Scroll down and click on "Create bucket". Step 10: You will see a message indicating that the bucket was successfully created. Page No. Step 11: Click on the name of the newly created bucket. Step 12: In the bucket, click on "Upload" to upload your website files (HTML, CSS, etc.). Step 13: Click on "Add files" to upload your files. Step 14: Select your HTML and CSS files and click "Open". Page No. Step 15: Click "Upload" to upload the files to your bucket. Step 16: A pop-up will appear, showing that the upload was successful. Step 17:

Click "Close" to return to the bucket page. Page No. Step 18: Back in the bucket page Step 19: Go to the "Permissions" tab in your bucket settings. Step 20: Scroll down to the Bucket Policy section and click "Edit". Page No. Step 21: By default, access is private. You need to add a bucket policy to make the files public Step 22: Click on the save Changes Step 23: Bucket policy Page No. Step 24: Click on Edit Step 25: Generate the policy: Paste the following code into the Bucket Policy editor: { "Version": "2012-10-17", "Statement": [{ "Effect": "Allow", "Principal": "*", "Action": "s3:GetObject", "Resource": "arn:aws:s3:::your-bucket-name/*" }] } Page No. Step 26: Click on the Save Changes Step 27: Back in the bucket page Step 28: Click on the name of the newly created bucket. Page No. Step 29: Click on the upload the files on your bucket. Step 30: Object url is there click on that Page No. Step 31: You can access your file