

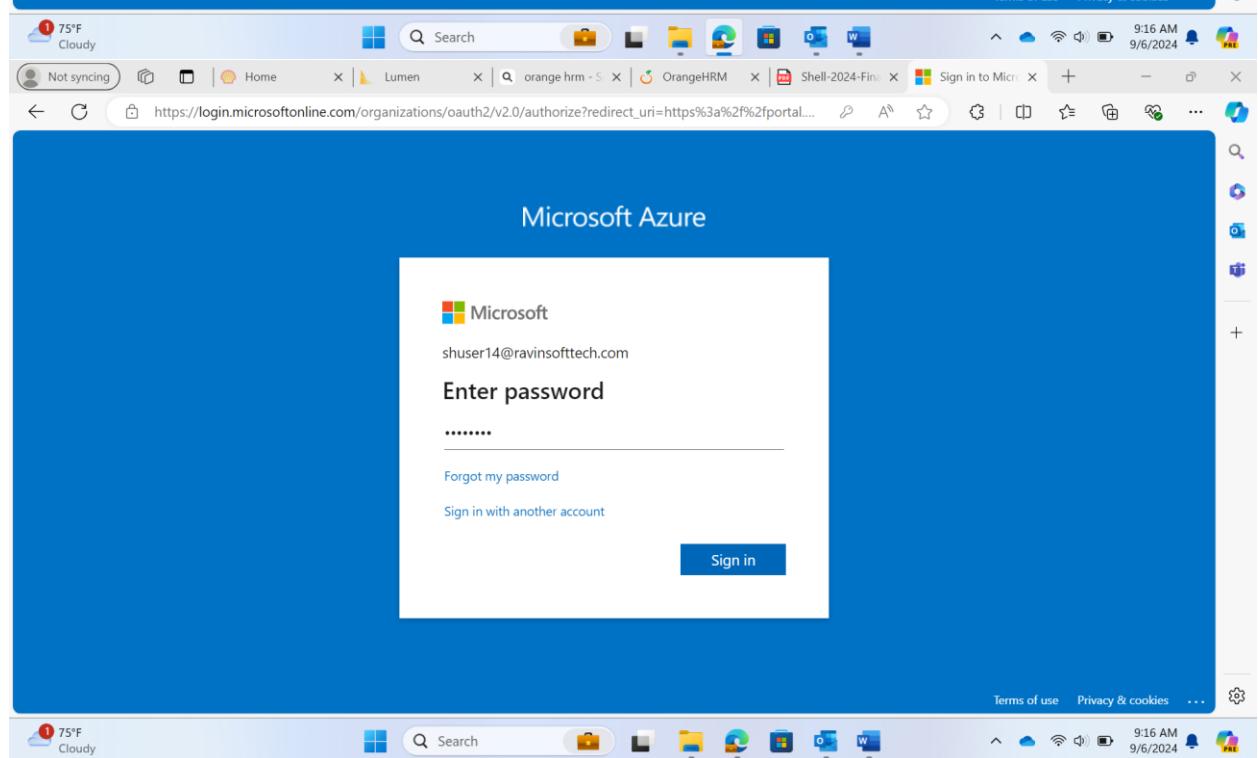
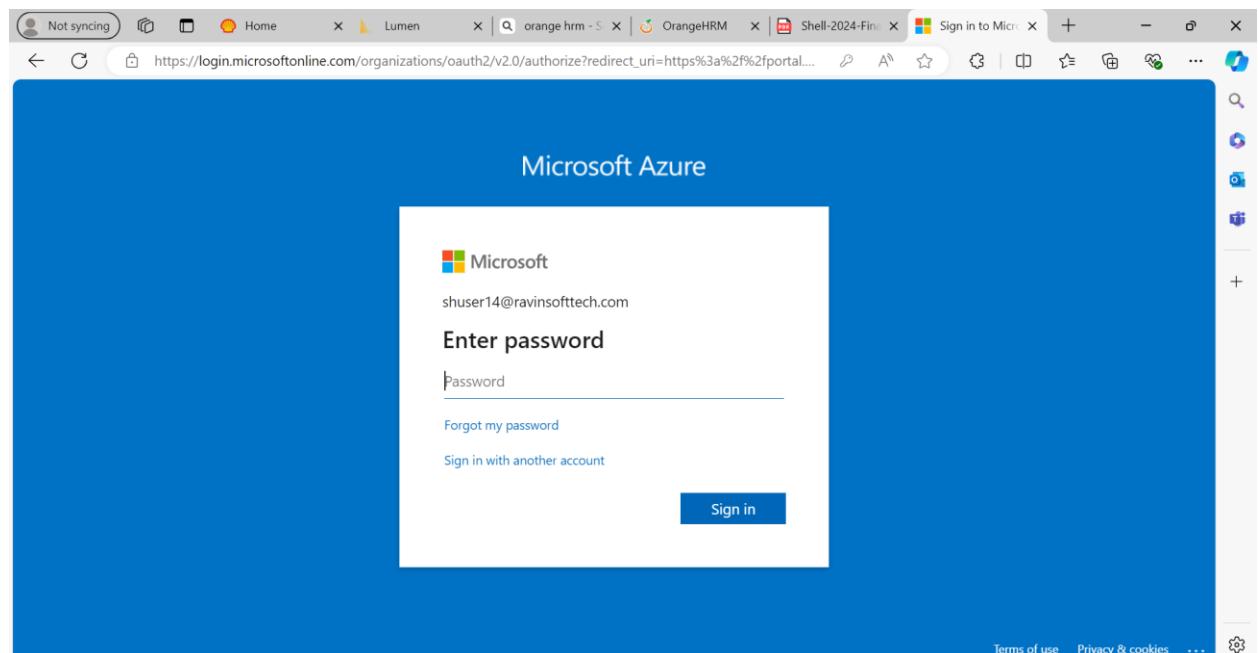
CASE STUDY DOCUMENTATION

Name: Neha Ann Shygen

Github Repo link: [nehaannshygen/Case_study_project_Neha \(github.com\)](https://github.com/nehaannshygen/Case_study_project_Neha)

Create Azure VM

Enter username and Password



Click on create a resource

The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with tabs like 'Home', 'Lumen', 'orange hr m...', 'OrangeHRM', 'Shell-2024-Fin...', and 'Create a resource'. Below the navigation bar is the search bar with the placeholder 'Search resources, services, and docs (G+/-)'. On the left, there's a sidebar titled 'Get Started' with sections for 'Recently created' and 'Categories' (including AI + Machine Learning, Analytics, Blockchain, Compute, Containers, Databases, Developer Tools, DevOps, Identity, and Integration). The main content area displays 'Popular Azure services' such as Virtual machine, Web App, SQL Database, Function App, and Key Vault, each with a 'Create' button and documentation links. To the right, there's a section for 'Popular Marketplace products' featuring Windows Server 2019 Datacenter, Ubuntu Server 20.04 LTS, Ubuntu Server 22.04 LTS, Red Hat Enterprise Linux 7.4, and SendGrid Essentials 50K, also with 'Create' buttons. The bottom of the screen shows the Windows taskbar with various pinned icons and system status.

Creating a VM by filling in all the required details

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The top navigation bar includes 'Create a resource' and the 'Virtual machine' option. The main form has three tabs at the top: 'Help me create a low cost VM', 'Help me create a VM optimized for high availability', and 'Help me choose the right VM size for my workload'. The 'Subscription' dropdown is set to 'RDBG' and the 'Resource group' dropdown is set to 'RDBG'. To the right, a panel shows 'Estimated monthly cost' as ₹4,166.22 / month with a 'View cost details' link. Below this, the 'Instance details' section includes fields for 'Virtual machine name' (set to 'VMUSERNEHA0806'), 'Region' (set to '(US) East US'), 'Availability options' (set to 'Availability zone'), and 'Zone options' (set to 'Self-selected zone'). At the bottom, there are buttons for '< Previous', 'Next : Disks >', 'Review + create', and 'Give feedback'. The bottom of the screen shows the Windows taskbar.

Not syncing Home Lumen orange hrms OrangeHRM Shell-2024-Fin Create a virtual ... Microsoft Azure Search resources, services, and docs (G+) Copilot shuser14@ravinsofttech... RAVINSOFTTE...

Home > Create a resource > Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Zone options Self-selected zone Choose up to 3 availability zones, one VM per zone Azure-selected zone (Preview) Let Azure assign the best zone for your needs Using an Azure-selected zone is not supported in region 'East US'.

Availability zone * Zone 1 You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type Standard

Image * Windows 10 Pro, version 22H2 - x64 Gen2 [See all images](#) [Configure VM generation](#) This image is compatible with additional security features. [Click here to swap to the Trusted launch security type](#)

Estimated monthly cost ₹4,166.22 / month [View cost details](#)

< Previous Next : Disks > Review + create Give feedback

75°F Cloudy 9:20 AM 9/6/2024

This screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The user has selected a 'Self-selected zone' for the availability zone. They have chosen the 'Standard' security type and the 'Windows 10 Pro, version 22H2 - x64 Gen2' image. The estimated monthly cost is displayed as ₹4,166.22. The interface includes navigation buttons like '< Previous' and 'Next : Disks >' along with a 'Review + create' button.

Not syncing Home Lumen orange hrms OrangeHRM Shell-2024-Fin Create a virtual ... Microsoft Azure Search resources, services, and docs (G+) Copilot shuser14@ravinsofttech... RAVINSOFTTE...

Home > Create a resource > Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Image * Windows 10 Pro, version 22H2 - x64 Gen2 [See all images](#) [Configure VM generation](#) This image is compatible with additional security features. [Click here to swap to the Trusted launch security type](#)

VM architecture Arm64 x64 Arm64 is not supported with the selected image.

Run with Azure Spot discount

Size * Standard_B2s - 2 vcpus, 4 GiB memory (₹2,526.46/month) [See all sizes](#) Item(s) availability based on policy assignment(s) for the selected scope

Estimated monthly cost ₹4,166.22 / month [View cost details](#)

< Previous Next : Disks > Review + create Give feedback

https://portal.azure.com/?feature.token caching=true&feature.internalgraphapi version=true# create/Mi...

75°F Cloudy 9:21 AM 9/6/2024

This screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The user has selected the 'x64' VM architecture. They have chosen the 'Standard_B2s' size, which offers 2 vcpus and 4 GiB memory at an estimated monthly cost of ₹2,526.46. The estimated monthly cost for the full configuration is ₹4,166.22. The interface includes navigation buttons like '< Previous' and 'Next : Disks >' along with a 'Review + create' button.

Not syncing Home Lumen orang Shell- Create A Copilot Microsoft Azure Search resources, services, and docs (G+) shuser14@ravinsofttech... RAVINSOFTTE...

Home > Create a resource > Create a virtual machine

⚠️ Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Administrator account

Username * vmuser Password * Confirm password *

Estimated monthly cost ₹3,985.52 / month View cost details

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * None Allow selected ports

< Previous Next : Disks > Review + create Go to microsoft.com/fwlink/?LinkId=2126834

76°F Mostly cloudy 10:38 AM 9/6/2024

Not syncing Home Lumen orang Shell- Create A Copilot Microsoft Azure Search resources, services, and docs (G+) shuser14@ravinsofttech... RAVINSOFTTE...

Home > Create a resource > Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * None Allow selected ports

Estimated monthly cost ₹4,166.22 / month View cost details

Select inbound ports * HTTP (80), HTTPS (443), SSH (22), RDP (3389)

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Licensing

I confirm I have an eligible Windows 10/11 license with multi-tenant hosting rights.

< Previous Next : Disks > Review + create Go to microsoft.com/fwlink/?LinkId=2126834

75°F Cloudy 9:23 AM 9/6/2024

Not syncing Home Lumen orange hrms OrangeHRM Shell-2024-Fin Create a virtual ... Microsoft Azure Search resources, services, and docs (G+) Copilot shuser14@ravinsofttech... RAVINSOFTTECH (RAVINSOFTTE...)

Home > Create a resource >

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

VM disk encryption
Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host Encryption at host is not registered for the selected subscription. [Learn more about enabling this feature](#)

OS disk

OS disk size OS disk type * The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

< Previous Next : Networking > Review + create Give feedback

75°F Cloudy Search 9:25 AM 9/6/2024

Not syncing Home Lumen orange hrms OrangeHRM Shell-2024-Fin Create a virtual ... Microsoft Azure Search resources, services, and docs (G+) Copilot shuser14@ravinsofttech... RAVINSOFTTECH (RAVINSOFTTE...)

Home > Create a resource >

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Delete with VM

Key management Enable Ultra Disk compatibility

Data disks for VMUSERNeha002
You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM
					<input type="checkbox"/>

Create and attach a new disk Attach an existing disk

< Previous Next : Networking > Review + create Give feedback

75°F Cloudy Search 9:25 AM 9/6/2024

Not syncing

Home | Lumen | orange | Shell- | Create a virtual machine | OrangeHRM | Orange | Test Case | TestCases | +

https://portal.azure.com/?feature.token caching=true&feature.internalgraphapiversion=true#create/Mi...

Microsoft Azure Search resources, services, and docs (G+/)

Copilot

shuser14@ravinsofttech... RAVINSOFTTECH (RAVINSOFTTECH)

Home > Create a resource >

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * (new) VMUSERNEHA0806-vnet Create new

Subnet * (new) default (10.0.0.0/24)

Public IP (new) VMUSERNEHA0806-ip Create new

NIC network security group (None) Basic Advanced

Public inbound ports * (None)

Estimated monthly cost ₹3,985.52 / month View cost details

< Previous Next : Management > Review + create Give feedback

76°F Mostly cloudy Search 10:37 AM 9/6/2024

Not syncing

Home | Lumen | orange hrms | OrangeHRM | Shell-2024-Final | Create a virtual machine | +

https://portal.azure.com/?feature.token caching=true&feature.internalgraphapiversion=true#create/Mi...

Microsoft Azure Search resources, services, and docs (G+/)

Copilot

shuser14@ravinsofttech... RAVINSOFTTECH (RAVINSOFTTECH)

Home > Create a resource >

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Basic Advanced

Public inbound ports * (None) Allow selected ports

Select inbound ports * HTTP (80), HTTPS (443), SSH (22), RDP (3389)

⚠️ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Delete public IP and NIC when VM is deleted

Estimated monthly cost ₹3,985.52 / month View cost details

< Previous Next : Management > Review + create Give feedback

75°F Cloudy Search 9:28 AM 9/6/2024

The screenshot shows the 'Create a virtual machine' wizard on the Microsoft Azure portal. The user has selected the 'None' option for load balancing. A validation error message states: 'The selected VM size does not support accelerated networking.' To the right, the estimated monthly cost is displayed as ₹3,985.52 / month.

Load balancing
You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Load balancing options

- None
- Azure load balancer
Supports all TCP/UDP network traffic, port-forwarding, and outbound flows.
- Application gateway
Web traffic load balancer for HTTP/HTTPS with URL-based routing, SSL termination, session persistence, and web application firewall.

Estimated monthly cost
₹3,985.52 / month

< Previous Next : Management > Review + create Give feedback

Validation passed

The screenshot shows the 'Create a virtual machine' wizard on the Microsoft Azure portal. The validation status is now 'Validation passed'. The estimated monthly cost is ₹4,986.52 / month.

Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Estimated monthly cost
₹4,986.52 / month

Price
1 X Standard B2s by Microsoft Subscription credits apply
3.4609 INR/hr Pricing for other VM sizes

TERMS
By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional

< Previous Next > Create Download a template for automation Give feedback

Azure VM Deployed

The screenshot shows the Microsoft Azure portal with a deployment titled "CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240906103418". The status bar indicates "Deployment is in progress". The deployment details table shows four resources: VMUSERNEHA0806 (Microsoft.Compute/virtualmachines), vmuserneha0806387_z1 (Microsoft.Network/networkInterfaces), VMUSERNEHA0806-nsg (Microsoft.Network/networkSecurityGroups), and VMUSERNEHA0806-ip (Microsoft.Network/publicIPAddresses). All resources are in a "Created" or "OK" state. The right sidebar features links for Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

The screenshot shows the Microsoft Azure portal with a deployment titled "CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240906103418". The status bar indicates "Your deployment is complete". The deployment details table shows the same four resources as before, all in a "Created" or "OK" state. The right sidebar features links for Cost Management, Microsoft Defender for Cloud, and Free Microsoft tutorials.

The screenshot shows the Microsoft Azure portal interface. The URL in the address bar is <https://portal.azure.com/?feature.token caching=true&feature.internalgraphapiversion=true#ravinsofttech...>. The user is signed in as shuser14@ravinsofttech... RAVINSOFTTECH (RAVINSOFTTECH).

The main content area displays the "VMUSERNEHA0806 | Connect" page for a Virtual machine. The "Connect" section is selected in the left sidebar. It shows the connection status: "Connecting using Public IP address | 4.242.57.88". The "Admin username" is set to "vmuser". The "Port" is listed as "3389" with a "Check access" link. A note states "Just-in-time policy Unsupported by plan".

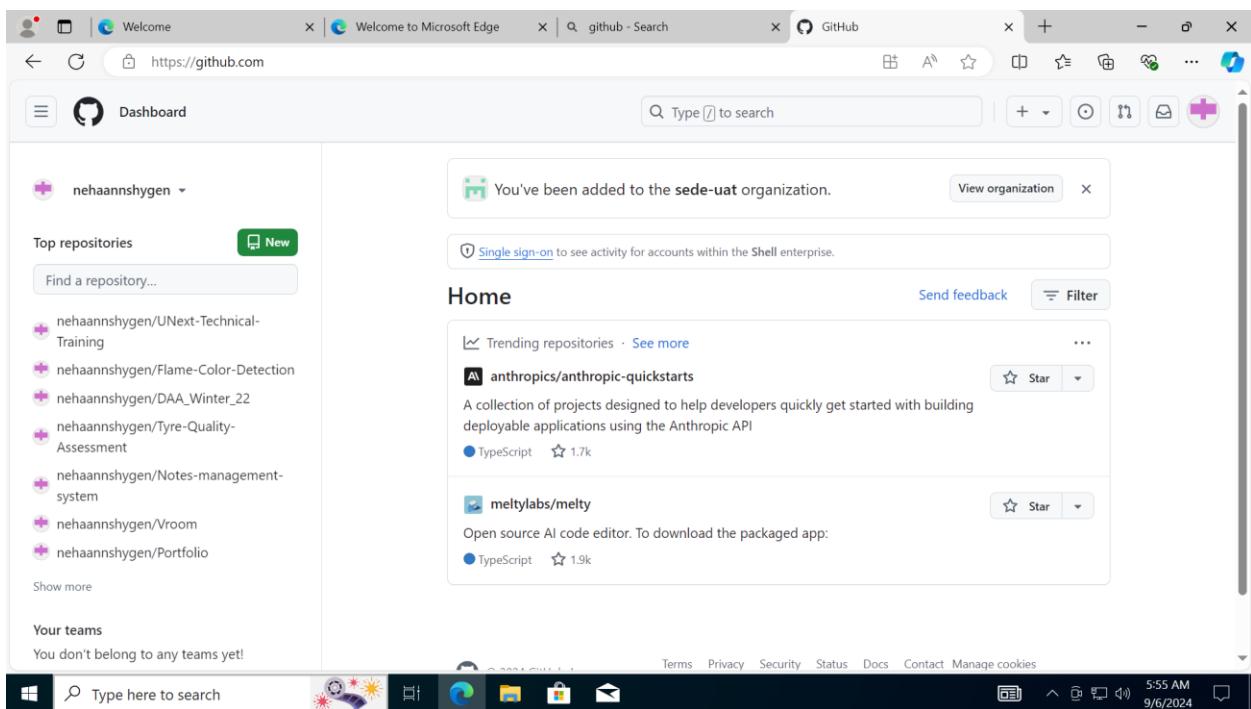
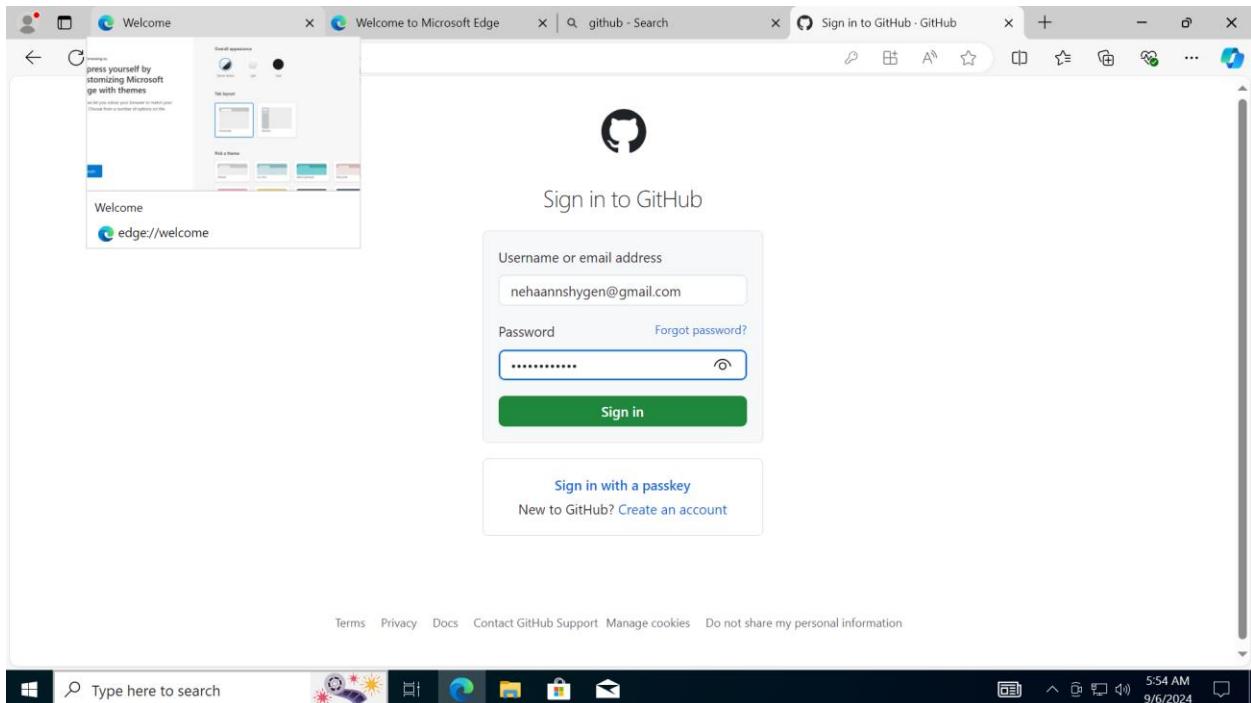
The "Most common" section contains a "Native RDP" option, which is described as "Connect via native RDP without any additional software needed. Recommended for testing only." It includes a "Public IP address (4.242.57.88)" link.

The bottom navigation bar shows the date and time as 10:47 AM 9/6/2024.

This screenshot is identical to the one above, showing the "VMUSERNEHA0806 | Connect" page. However, a download dialog box is overlaid on the screen. The dialog is titled "Downloads" and shows a single item: "VMUSERNEHA0806.rdp" with an "Open file" link. There is also a "See more" link at the bottom of the dialog.

Creating CI/CD Pipeline

Signing in and creating a repository in Github



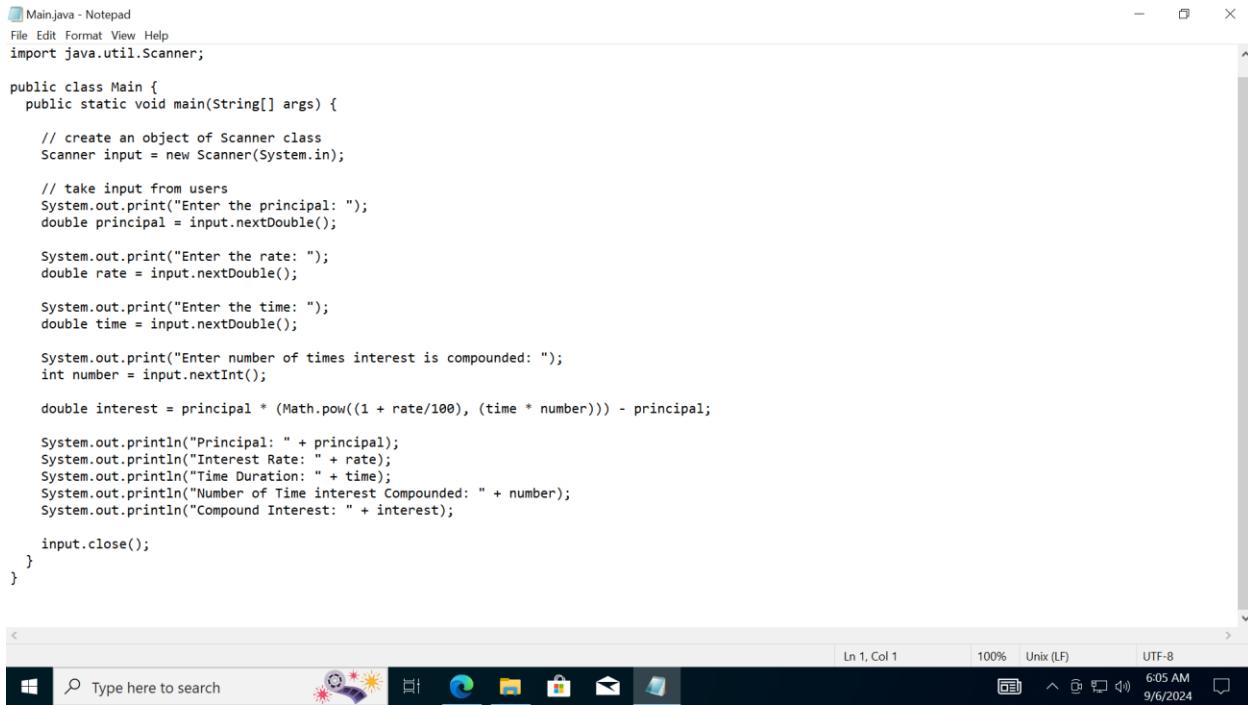
The screenshot shows the GitHub 'New repository' creation interface in Microsoft Edge. At the top, there are four tabs: 'Welcome', 'Welcome to Microsoft Edge', 'github - Search', and 'New repository'. The 'New repository' tab is active. Below the tabs, the URL is https://github.com/new. A blue banner at the top says 'single sign-on to see results in the sede-uat organization.' A 'Repository template' dropdown is set to 'No template'. A note below it says 'Start your repository with a template repository's contents.' Under 'Owner *', a dropdown says 'Choose an owner / Case_study_project_Neha'. A note below says 'Great repository names are short and memorable. Need inspiration? How about shiny-fishstick ?'. There is a 'Description (optional)' input field with a placeholder note 'Please choose an owner to see the available visibility options.' Under 'Initialize this repository with:', a checked checkbox 'Add a README file' is selected, with a note below it: 'This is where you can write a long description for your project. [Learn more about READMEs](#)'. An 'Add .gitignore' section shows a dropdown 'gitignore template: None'. A note below it says 'Choose which files not to track from a list of templates. [Learn more about ignoring files](#)'. The bottom right of the page shows the Windows taskbar with the Edge icon, the date '9/6/2024', and the time '5:56 AM'.

This screenshot continues the GitHub 'New repository' creation process. It shows the same basic structure as the first screenshot, but with additional fields filled in. The 'Add .gitignore' section now has a dropdown 'gitignore template: None'. The 'Choose a license' section has a dropdown 'License: None'. A large green 'Create repository' button is prominently displayed at the bottom right. The bottom right of the page shows the Windows taskbar with the Edge icon, the date '9/6/2024', and the time '5:56 AM'.

The screenshot shows the GitHub 'Create a new repository' interface in Microsoft Edge. The URL is <https://github.com/new>. The page title is 'Create a new repository'. It asks if the user already has a project repository elsewhere and provides a link to 'Import a repository'. A note states that required fields are marked with an asterisk (*). A blue box at the top right says 'Single sign-on to see results in the sede-ut organization.' Below this, there's a 'Repository template' section with a dropdown set to 'No template'. A note says 'Start your repository with a template repository's contents.' The 'Owner *' field is populated with 'nehaannshygen'. The 'Repository name *' field contains 'Case_study_project_Neha', which is noted as available. A note says 'Great repository names are short and memorable. Need inspiration? How about shiny-fishstick ?' There's a 'Description (optional)' input field and a 'Public' radio button selected, with a note that anyone on the internet can see it. There's also a 'Private' radio button. The bottom of the window shows the Windows taskbar with the date and time as 9/6/2024 5:57 AM.

The screenshot shows the GitHub repository upload interface in Microsoft Edge. The URL is https://github.com/nehaannshygen/Case_study_project_Neha/upload/main. The page title is 'nehaannshygen / Case_study_project_Neha'. The main content area has a large text input field with a file icon and the placeholder 'Drag files here to add them to your repository' or 'Or choose your files'. At the bottom left, there's a 'Commit changes' section with a plus icon, 'Add files via upload' button, and 'Add an optional extended description...' input field. The bottom of the window shows the Windows taskbar with the date and time as 9/6/2024 6:04 AM.

Java code : Compound Interest Calculator



```
Main.java - Notepad
File Edit Format View Help
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        // create an object of Scanner class
        Scanner input = new Scanner(System.in);

        // take input from users
        System.out.print("Enter the principal: ");
        double principal = input.nextDouble();

        System.out.print("Enter the rate: ");
        double rate = input.nextDouble();

        System.out.print("Enter the time: ");
        double time = input.nextDouble();

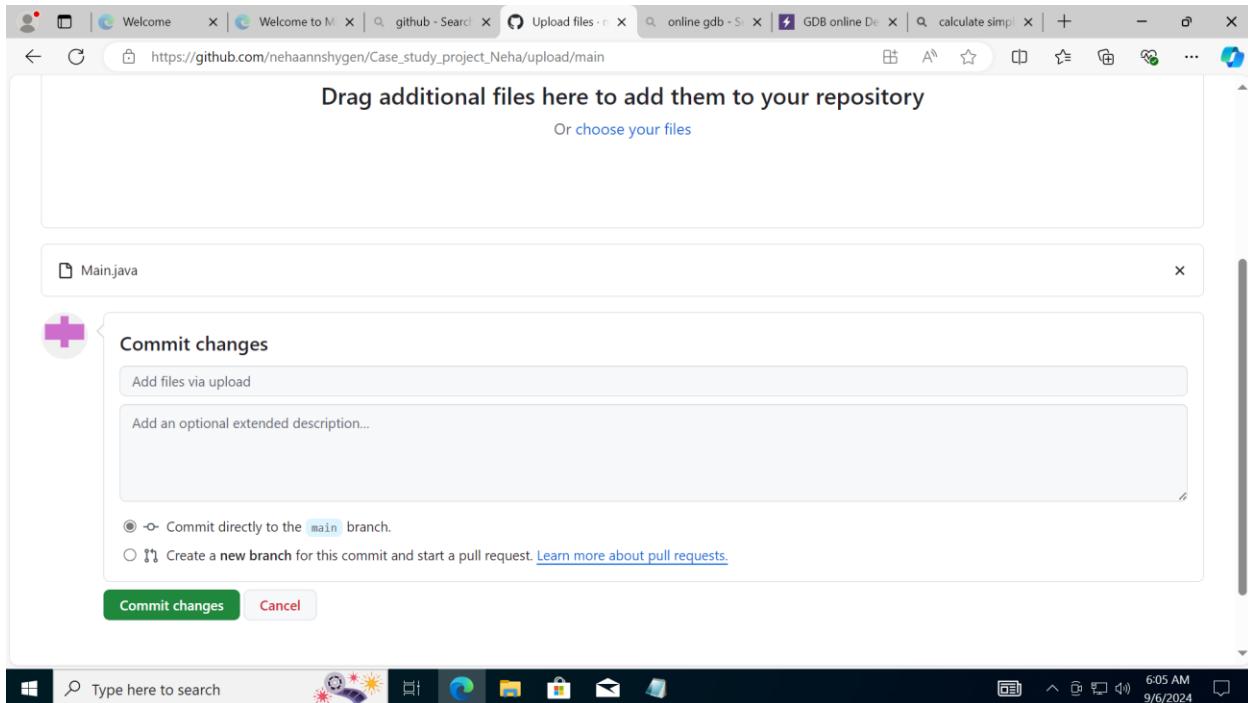
        System.out.print("Enter number of times interest is compounded: ");
        int number = input.nextInt();

        double interest = principal * (Math.pow((1 + rate/100), (time * number))) - principal;

        System.out.println("Principal: " + principal);
        System.out.println("Interest Rate: " + rate);
        System.out.println("Time Duration: " + time);
        System.out.println("Number of Time interest Compounded: " + number);
        System.out.println("Compound Interest: " + interest);

        input.close();
    }
}
```

Committing the code to main branch



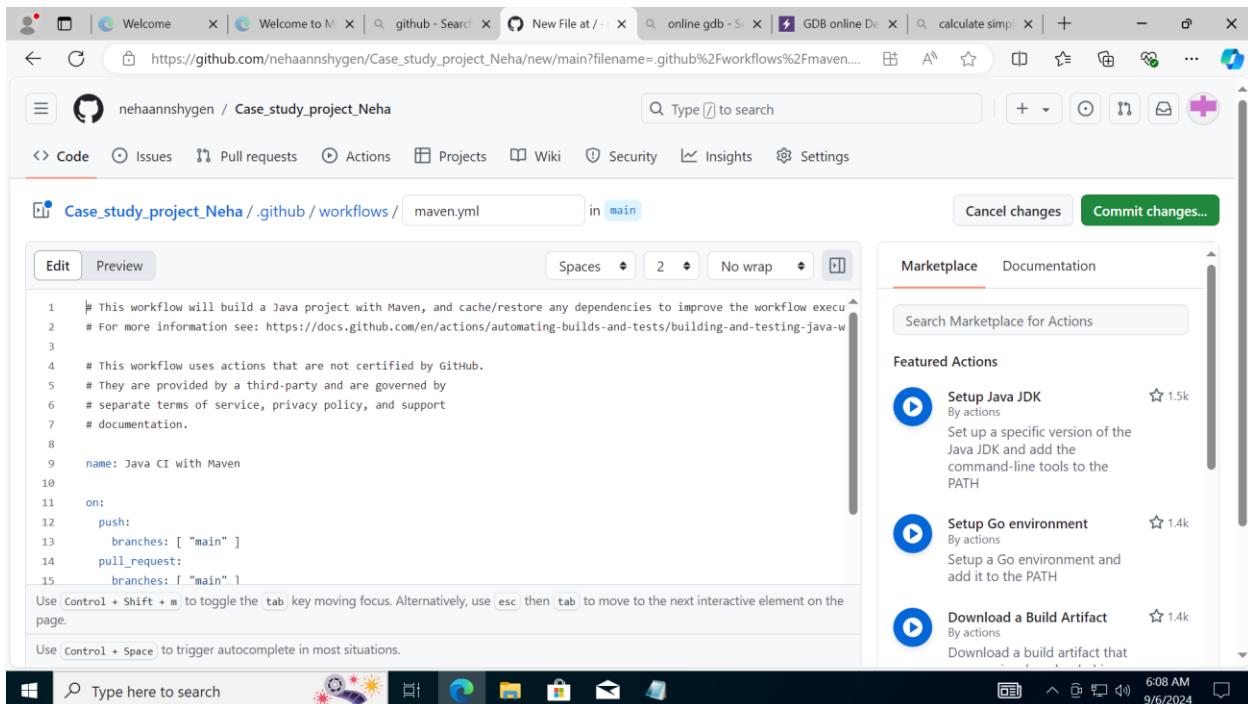
The screenshot shows a Microsoft Edge browser window with the URL https://github.com/nehaannshygen/Case_study_project_Neha/upload/main. The page displays a message: "Drag additional files here to add them to your repository" and "Or choose your files". Below this, there is a file selection dialog for "Main.java". A "Commit changes" modal is open, containing fields for "Add files via upload" and "Add an optional extended description...". At the bottom of the modal, there are two radio button options: "Commit directly to the `main` branch." (selected) and "Create a new branch for this commit and start a pull request." Below the radio buttons are two buttons: "Commit changes" (green) and "Cancel". The browser's address bar and taskbar are visible at the top and bottom of the window respectively.

The screenshot shows a GitHub repository page for 'Case_study_project_Neha'. The repository is public and has 1 branch and 0 tags. The main file listed is 'Main.java', which was added via upload. The README file was also added via upload. The repository has 2 commits, with the latest being an initial commit by 'nehaannshygen' 9 minutes ago. On the right side, there is an 'About' section with a note: 'No description, website, or topics provided.' It also shows statistics: 1 star, 1 watching, and 0 forks. Below that is a 'Releases' section stating 'No releases published' and a 'Create a new release' link. At the bottom is a 'Packages' section indicating 'No packages published'. The browser's address bar shows the URL: https://github.com/nehaannshygen/Case_study_project_Neha/tree/main.

Github Actions: Java with VM

The screenshot shows the GitHub Actions search results for the query 'java with maven'. It found 2 workflows. The first is 'Publish Java Package with Maven' by GitHub Actions, which builds a Java package using Maven and publishes it to GitHub Packages. The second is 'Java with Maven' by GitHub Actions, which builds and tests a Java project with Apache Maven. Both workflows have a 'Configure' button and a 'Java' badge. The browser's address bar shows the URL: https://github.com/nehaannshygen/Case_study_project_Neha/actions/new?category=none&query=java+with+maven.

Configuring maven.yaml file

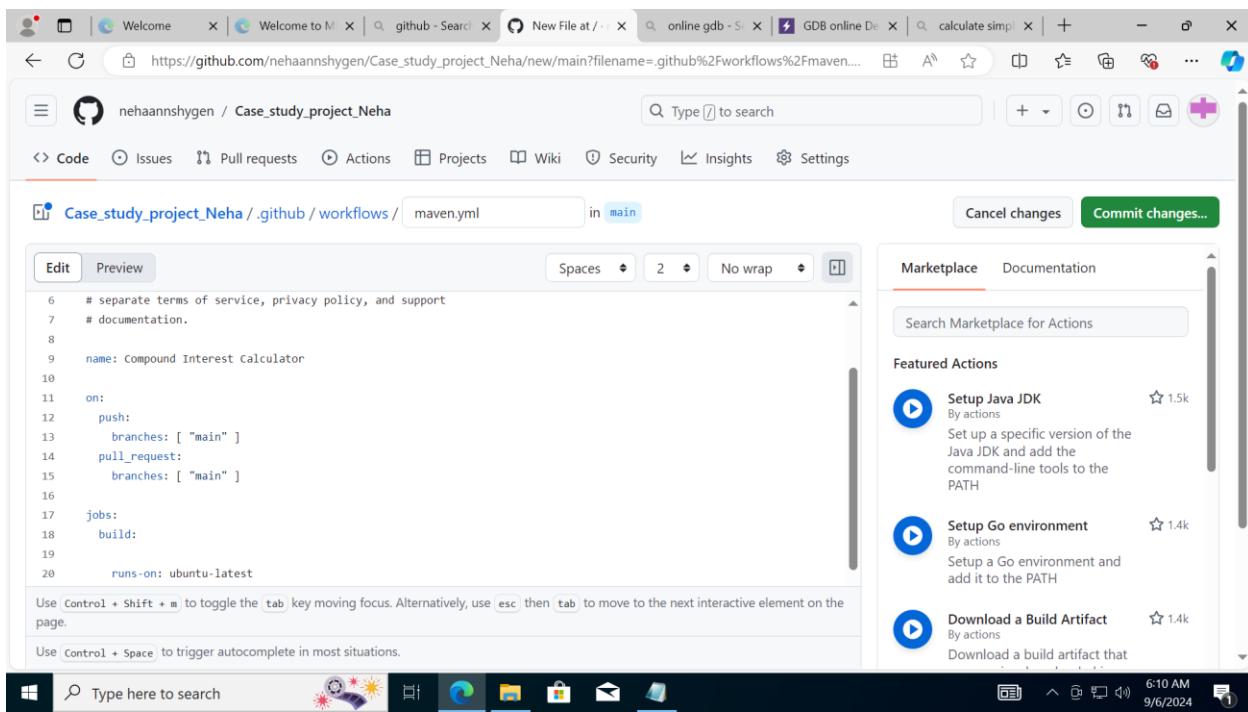


The screenshot shows the GitHub Actions workflow configuration page for a repository named 'Case_study_project_Neha'. The file being edited is 'maven.yaml' in the 'main' branch. The code content is as follows:

```
1  # This workflow will build a Java project with Maven, and cache/restore any dependencies to improve the workflow execution
2  # For more information see: https://docs.github.com/en/actions/automating-builds-and-tests/building-and-testing-java-w
3
4  # This workflow uses actions that are not certified by GitHub.
5  # They are provided by a third-party and are governed by
6  # separate terms of service, privacy policy, and support
7  # documentation.
8
9  name: Java CI with Maven
10
11 on:
12   push:
13     branches: [ "main" ]
14   pull_request:
15     branches: [ "main" ]
```

Below the code editor, there are instructions for navigating the page: 'Use Control + Shift + m to toggle the tab key moving focus. Alternatively, use esc then tab to move to the next interactive element on the page.' and 'Use Control + Space to trigger autocomplete in most situations.'

The GitHub interface includes a search bar, a navigation bar with links like 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. On the right, there are buttons for 'Cancel changes' and 'Commit changes...'. A sidebar on the right is titled 'Marketplace' and 'Documentation', with a search bar for 'Search Marketplace for Actions'. It lists three featured actions: 'Setup Java JDK' (1.5k stars), 'Setup Go environment' (1.4k stars), and 'Download a Build Artifact' (1.4k stars).



The screenshot shows the GitHub Actions workflow configuration page for the same repository. The file being edited is 'maven.yaml' in the 'main' branch. The code content is as follows:

```
6  # separate terms of service, privacy policy, and support
7  # documentation.
8
9  name: Compound Interest Calculator
10
11 on:
12   push:
13     branches: [ "main" ]
14   pull_request:
15     branches: [ "main" ]
16
17 jobs:
18   build:
19
20   runs-on: ubuntu-latest
```

Below the code editor, there are instructions for navigating the page: 'Use Control + Shift + m to toggle the tab key moving focus. Alternatively, use esc then tab to move to the next interactive element on the page.' and 'Use Control + Space to trigger autocomplete in most situations.'

The GitHub interface is identical to the first screenshot, including the search bar, navigation bar, and marketplace sidebar.

Changing permissions in Github settings

The screenshot shows the GitHub Actions settings page for a repository. It includes sections for GitHub Apps, Email notifications, and Workflow permissions. Under Workflow permissions, it specifies default permissions for GITHUB_TOKEN and allows GitHub Actions to create and approve pull requests.

Workflow permissions

Choose the default permissions granted to the GITHUB_TOKEN when running workflows in this repository. You can specify more granular permissions in the workflow using YAML. [Learn more about managing permissions](#).

Read and write permissions
Workflows have read and write permissions in the repository for all scopes.

Read repository contents and packages permissions
Workflows have read permissions in the repository for the contents and packages scopes only.

Choose whether GitHub Actions can create pull requests or submit approving pull request reviews.

Allow GitHub Actions to create and approve pull requests

The screenshot shows the GitHub repository page for 'Case_study_project_Neha'. It displays the .github/workflows directory, which contains a single file named 'maven.yml' created 24 minutes ago by 'nehaannshygen'. The repository also includes files like 'Main.java', 'README.md', and 'pom.xml'.

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

.github/workflows

Name	Last commit message	Last commit date
maven.yml	Create maven.yml	24 minutes ago

Adding pom.xml file

The screenshot shows a GitHub repository page for 'Case_study_project_Neha'. In the left sidebar, under 'Files', the 'pom.xml' file is selected. The main content area displays the XML code for the pom.xml file:

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
<modelVersion>4.0.0</modelVersion>
<groupId>com.example</groupId>
<artifactId>my-app</artifactId>
<version>1.0-SNAPSHOT</version>
<packaging>jar</packaging>
<name>My Application</name>
<url>http://maven.apache.org</url>
<properties>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
</properties>
```

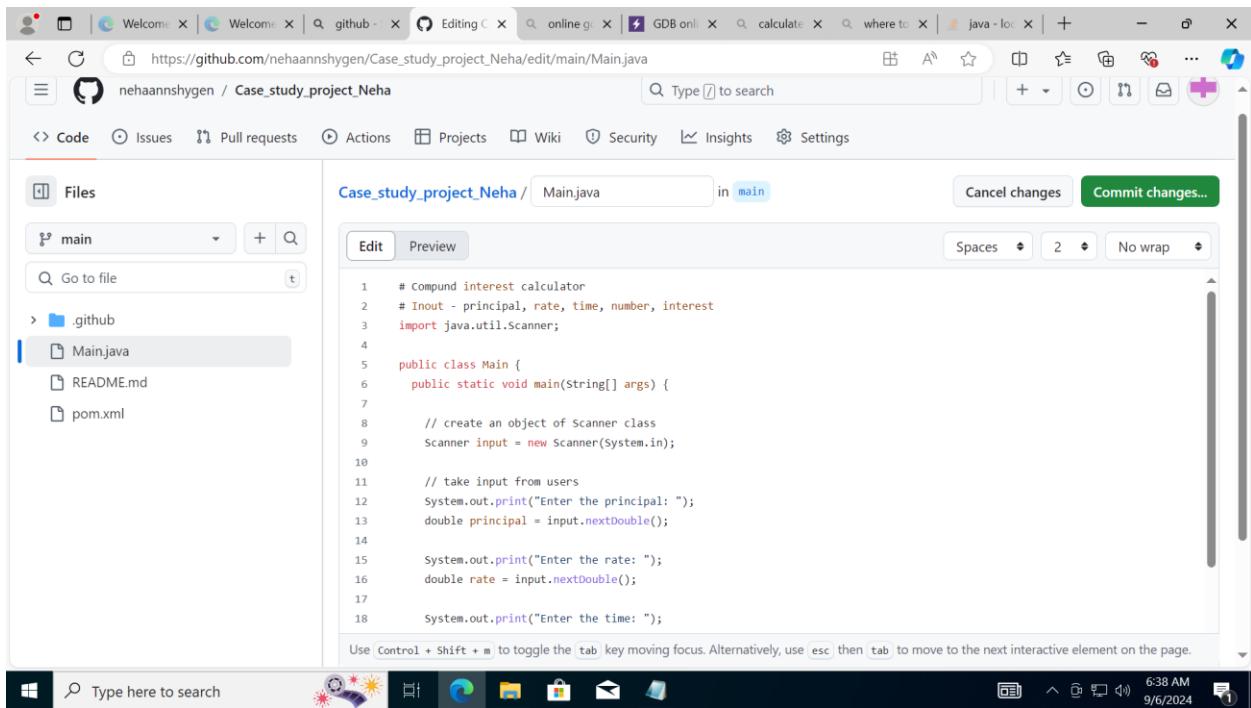
A commit message 'Add files via upload' by 'nehaannshygen' is visible above the code editor.

First successful build

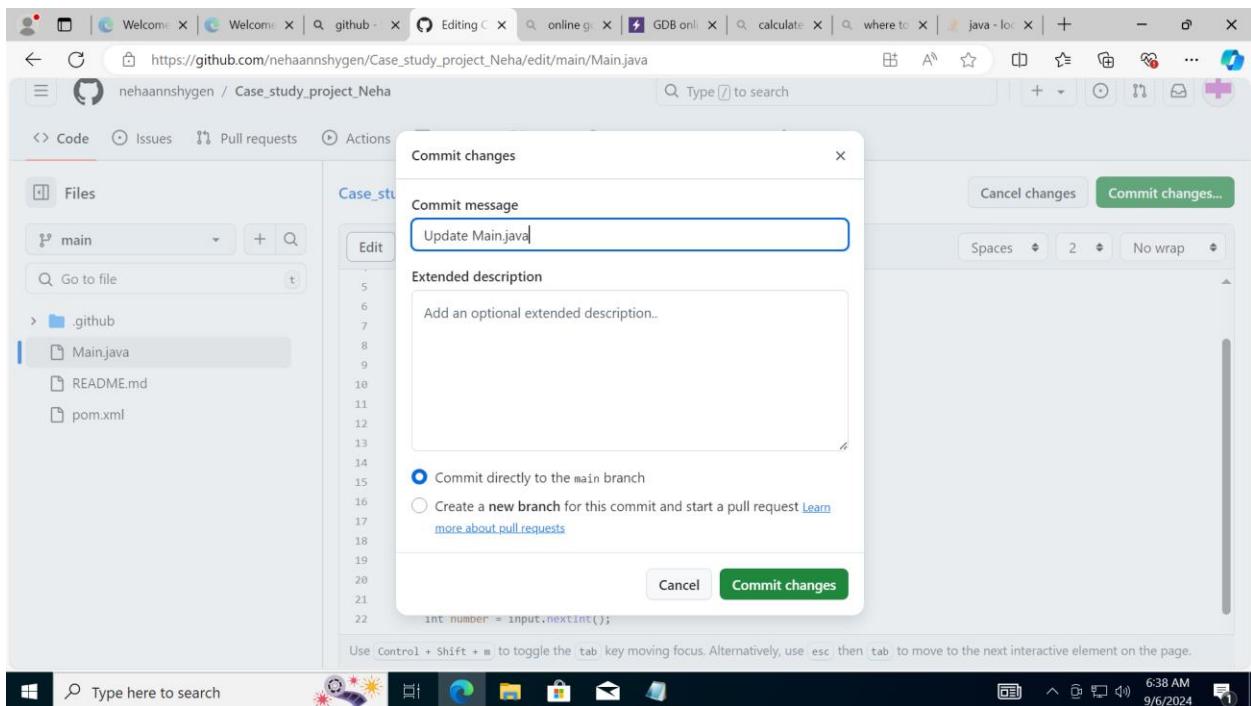
The screenshot shows the GitHub Actions page for the same repository. The 'Actions' tab is selected. A message 'Workflow run deleted successfully.' is displayed. On the left, the 'Actions' sidebar lists 'All workflows' and sections for 'Management' (Caches, Attestations, Runners). The main area shows the 'All workflows' section with a table of '6 workflow runs':

Event	Status	Branch	Actor
✓ Delete .github/workflows/gradle.yml	Success	main	nehaannshygen
✓ Add files via upload	Success	main	nehaannshygen
✗ Update Main.java	Failure	main	nehaannshygen
✓ Delete .github/workflows/gradle.yml	Success	main	nehaannshygen
✓ Add files via upload	Success	main	nehaannshygen
✗ Update Main.java	Failure	main	nehaannshygen

Committing changes to code



```
1  # Compound interest calculator
2  # Inout - principal, rate, time, number, interest
3  import java.util.Scanner;
4
5  public class Main {
6      public static void main(String[] args) {
7
8          // create an object of Scanner class
9          Scanner input = new Scanner(System.in);
10
11         // take input from users
12         System.out.print("Enter the principal: ");
13         double principal = input.nextDouble();
14
15         System.out.print("Enter the rate: ");
16         double rate = input.nextDouble();
17
18         System.out.print("Enter the time: ");
19
20         System.out.print("Enter the number: ");
21         int number = input.nextInt();
22
23         double interest = principal * rate * number / 100;
24
25         System.out.println("The interest is " + interest);
26     }
27 }
```



Successful build after updating the code

The screenshot shows the GitHub Actions page for the repository "Case_study_project_Neha". The left sidebar shows "All workflows" for the "Compound Interest Calculator" project. The main area displays "7 workflow runs" with the following details:

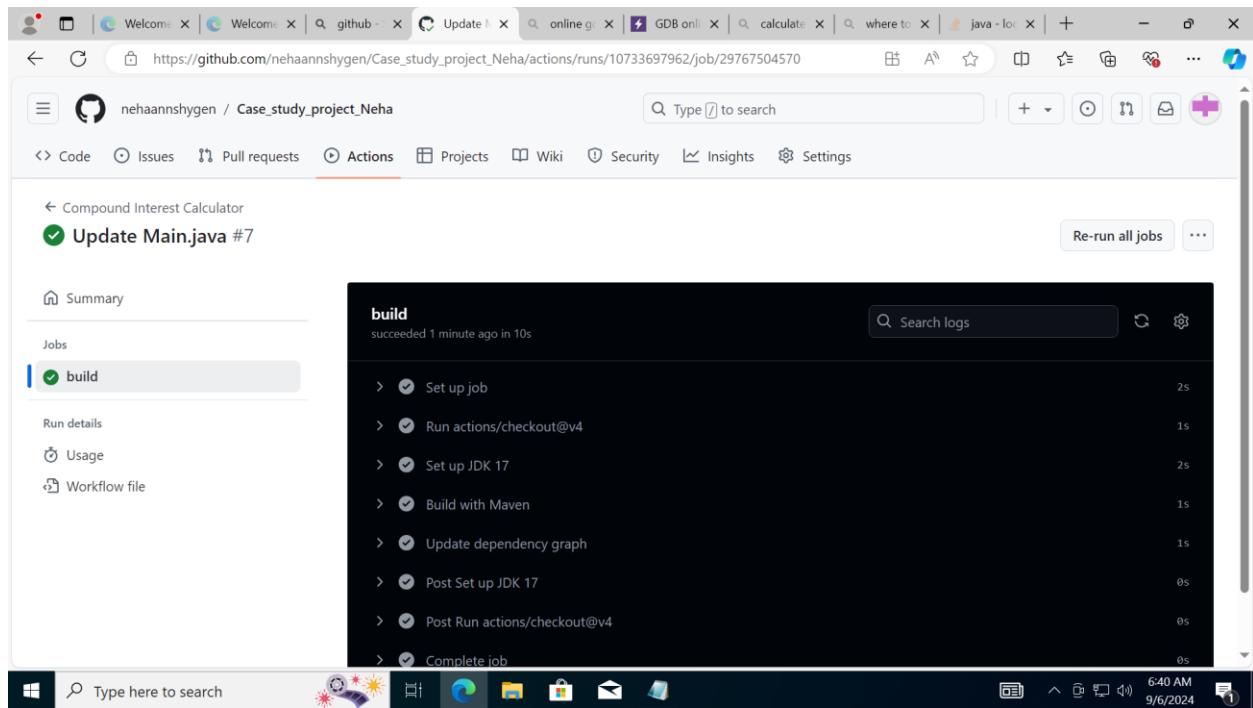
Workflow	Event	Status	Branch	Actor	Time
Update Main.java	now	Success	main	nehaannshygen	20s
Delete .github/workflows/gradle.yml	4 minutes ago	Success	main	nehaannshygen	23s
Add files via upload	6 minutes ago	Success	main	nehaannshygen	30s
Update Main.java	8 minutes ago	Failure	main	nehaannshygen	-
Update Main.java	8 minutes ago	Success	main	nehaannshygen	-
Update Main.java	8 minutes ago	Success	main	nehaannshygen	-
Update Main.java	8 minutes ago	Success	main	nehaannshygen	-

The screenshot shows the details of the latest successful workflow run for "Update Main.java #7". The summary table shows:

Triggered via	Status	Total duration	Artifacts
nehaannshygen pushed 32324c3 main	Success	20s	-

The "maven.yml" section shows a single job named "build" which completed successfully in 10s.

The "Annotations" section shows 2 warnings and 3 notices.



User stories and Test Cases

To create a new user story click on new work item and click on issue

Work items

A screenshot of a web browser showing the "Work items" interface. At the top, there are buttons for "Recently updated" (with a dropdown arrow), "+ New Work Item" (with a dropdown arrow), and "Open in Queries". Below this is a search bar with the placeholder "Filter by keyword" and a "T" icon. The main area is currently empty, showing a light gray background.

USER STORY_0001: Login Page

As a user when I enter valid username and password and click on the Login button, then the system should allow me to access the home page.

Acceptance Criteria: When valid credentials are entered, the system should

- Allow the user to access the home page.
- Username should be of 5-20 characters.
- Password should contain alphanumeric values with at least 1 digit and 1 small case.

Priority: 1

Effort: 3

The screenshot shows a Jira issue page for a task titled "Login Page". The issue is unassigned and has a priority of 1 and an effort of 3. It is currently in the "To Do" state. The description of the task states: "As a user when I enter valid username and password and click on the Login button, then the system should allow me to access the home page." Acceptance Criteria include: "When valid credentials are entered, the system should • Allow the user to access the home page. • Username should be of 5-20 characters. • Password should contain alphanumeric values with at least 1 digit and 1 small case." The planning section shows the same priority and effort levels. Deployment and Development sections are also present.

TC_001: To test the login functionality of login page using valid credentials

Given the user can access the application [OrangeHRM \(orangehrmlive.com\)](http://orangehrmlive.com) in chrome browser

When user enters valid "username" and valid "password"

And user clicks on login button

Then the user should be redirected to the [Dashboard](#)

S. No.	Username	Password	Able to login?	Expected Outcome
1	Admin	admin123	Yes	Yes

TC_002: To test if username field is editable and if the user can enter text

Given the user can access the application [OrangeHRM \(orangehrmlive.com\)](http://orangehrmlive.com) in chrome browser

When user clicks on the “username” field

Then the user should be able to enter the “username”.

S. No.	Username
1	Admin
2	Admin123

TC_003: To test if password field is editable and if the user can enter text

Given the user can access the application [OrangeHRM \(orangehrmlive.com\)](http://orangehrmlive.com) in chrome browser

When user clicks on the “password” field

Then the user should be able to enter the “password”.

S. No.	Password
1	admin123

TC_004: To test if a relevant message is displayed when invalid credentials are entered. Given the user can access the application [OrangeHRM \(orangehrmlive.com\)](https://orangehrmlive.com) in chrome browser

When user enters invalid "username" or invalid "password"

And user clicks on login button

Then the user should get a message stating “Invalid credentials” above the username field.

S. No.	Username	Password
1	Admin	admin123

TC_005: To test the login functionality with an empty username or empty password.

Given the user can access the application [OrangeHRM \(orangehrmlive.com\)](https://orangehrmlive.com) in chrome browser

When user enters empty "username" or empty "password"

And user clicks on login button

Then the user should get a message stating “Required” below the respective empty field.

S. No.	Username	Password
1		admin123
2	Source	

TC_006: To test the login functionality with an invalid username or invalid password.

Given the user can access the application [OrangeHRM \(orangehrmlive.com\)](https://orangehrmlive.com) in chrome browser

When user enters invalid "username" or invalid "password"

And user clicks on login button

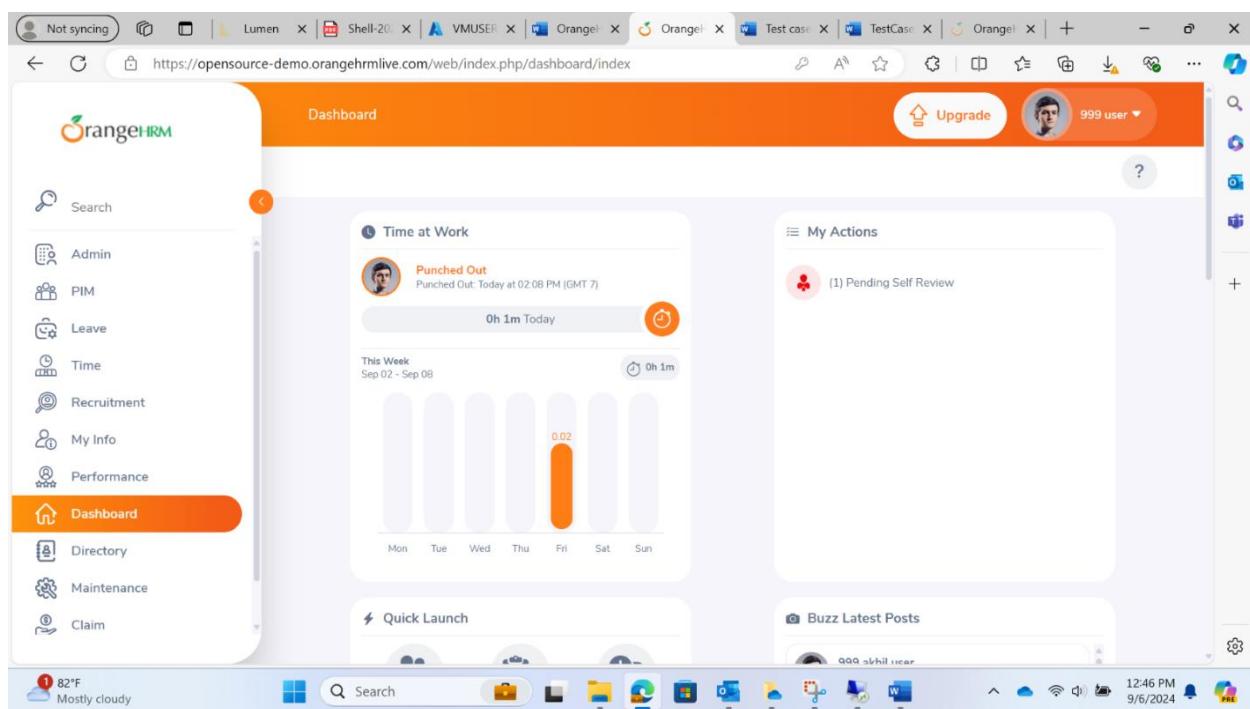
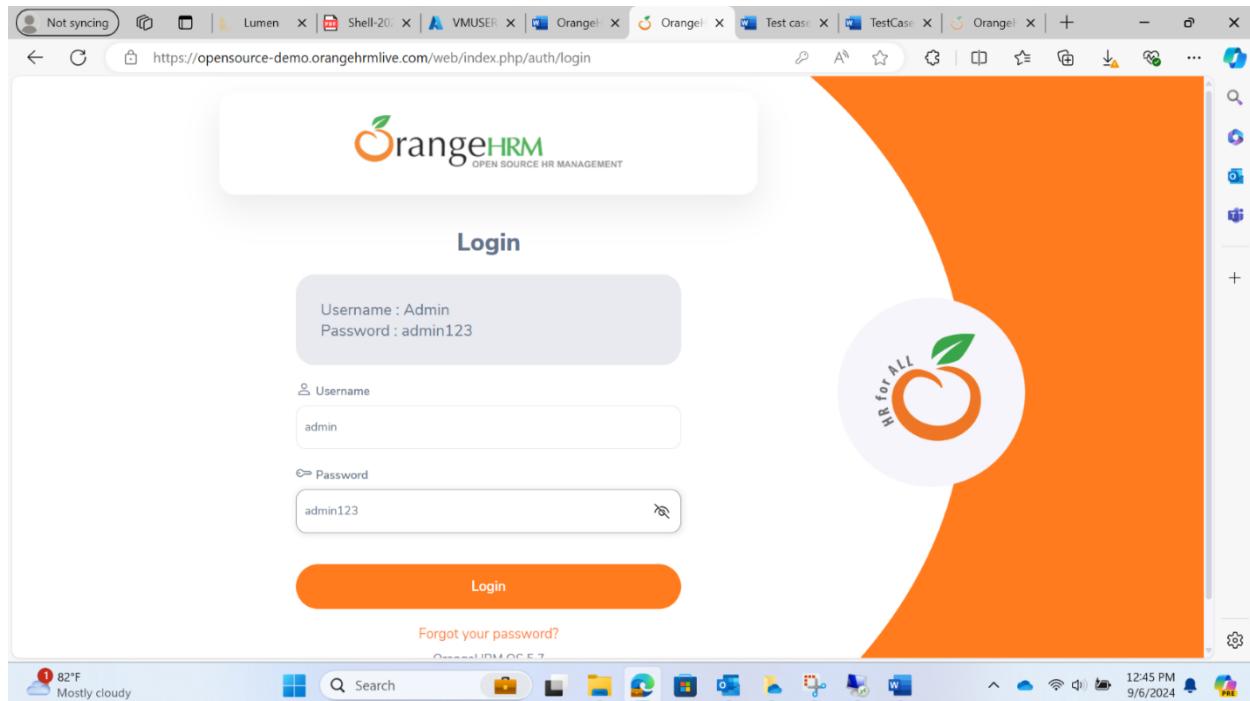
Then the user should get a message stating “Invalid credentials”.

S. No.	Username	Password	Actual outcome	Expected outcome
1	admin	admin123	Yes	No
2	Source	admin	No	No

Bug Report (BR_001):

- **Description of bug:** Login successful with invalid credentials
- **Steps to reproduce:** Open OrangeHRM in chrome browser, enter “admin” username and “admin123” password and click on login button. The user is able to successfully login
- **Time stamp:** 06/09/2024 12:50 PM
- **Severity:** High
- **Priority:** Major

- **Assignee:** Developer3
- **Screenshot**



Test cases for User_story1 on Azure Devops:

<p> 7 Login Page Unassigned State ● To Do</p>	<p><input checked="" type="checkbox"/> 16 To test the login functionality of login page using valid credentials Unassigned State ● To Do</p>	<p><input checked="" type="checkbox"/> 17 To test if username field is editable and if the user can enter text Unassigned State ● Doing</p>	<p><input checked="" type="checkbox"/> 18 To test if password field is editable and if the user can enter text Unassigned State ● Done</p>
<p></p>	<p><input checked="" type="checkbox"/> 19 To test if a relevant message is displayed when invalid credentials are entered. Unassigned State ● To Do</p>	<p><input checked="" type="checkbox"/> 20 To test the login functionality with an empty username or empty password. Unassigned State ● Doing</p>	

USER_STORY_002: Optional Fields in Configuration

As a user when I go to Optional Field in the dropdown menu of Configuration in PIM tab from Menu, then the system should allow me an option to “Show Deprecated Fields” and “Country Specific Information” or not.

Acceptance Criteria: When the Optional Field is selected from the dropdown menu of Configuration in PIM tab from Menu, the system should

- Allow the user to access the optional field page.
- A toggle button to “Show Deprecated Fields” or not.
- A toggle button to “Country Specific Information” or not.

Priority: 3

Effort: 2

The screenshot shows a Jira issue page for a new issue titled "Optional Fields in Configuration". The issue is unassigned and has 0 comments. The area is set to "Orange HRM Case study". The reason is "Added to back...". The iteration is also "Orange HRM Case study".

Description:

As a user when I go to Optional Field in the dropdown menu of Configuration in PIM tab from Menu, then the system should allow me an option to "Show Deprecated Fields" and "Country Specific Information" or not.

Acceptance Criteria: When the Optional Field is selected from the dropdown menu of Configuration in PIM tab from Menu, the system should

- Allow the user to access the optional field page.
- A toggle button to "Show Deprecated Fields" or not.
- A toggle button to "Country Specific Information" or not.

Planning:

Priority: 3
Effort: 2

Deployment:

Development:

+ Add link

TC_001: To test if the Optional Field Page can be accessed by clicking on Optional Fields in Configuration drop down

Given the user is logged in as an admin

When the user navigates to the "Configuration" dropdown menu in the "PIM" tab

And the user selects "Optional Field"

Then the system should allow the user to access the optional field page

TC_002: To test the functionality of "Show Nick Name, Smoker and Military Service in Personal Details" Toggle Button

Given the user is on the optional field page

When the user clicks on the toggle button of "Show Nick Name, Smoker and Military Service in Personal Details"

Then the system should allow the user to hide or show deprecated fields.

TC_003: To test the functionality of "Show SSN field in Personal Details" Toggle Button

Given the user is on the optional field page

When the user clicks on the toggle button of "Show SSN field in Personal Details"

Then the system should allow the user to hide or show SSN field in Personal Details.

TC_004: To test the functionality of "Show SIN field in Personal Details" Toggle Button

Given the user is on the optional field page

When the user clicks on the toggle button of "Show SIN field in Personal Details"

Then the system should allow the user to hide or show SIN field in Personal Details.

TC_005: To test the functionality of "Show US Tax Exemptions menu" Toggle Button

Given the user is on the optional field page

When the user clicks on the toggle button of “Show US Tax Exemptions menu”
Then the system should allow the user to hide or show US Tax Exemptions menu.

TC_006: To test the functionality of “Save” Button

Given the user is on the optional field page

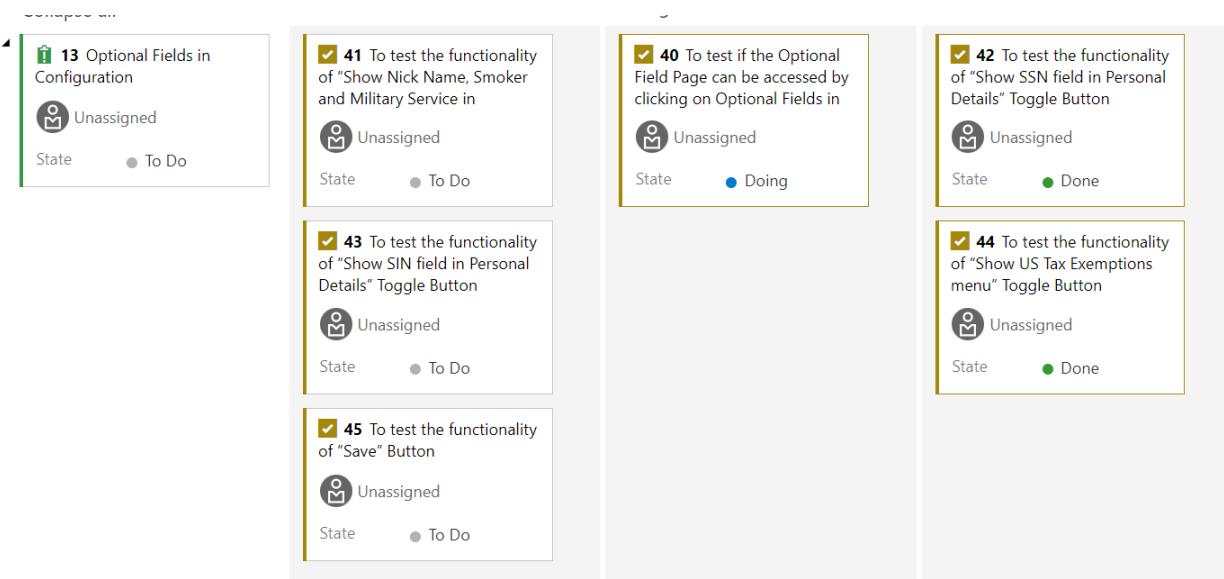
When the user clicks on the toggle button of fields as per requirement

And clicks on the “Save” button

Then the system should save the details

And show a message “Successfully saved”.

Test cases of User_Story 2 on Azure DevOps:



USER_STORY_003: Manage User Accounts in Admin Module

As a user, when I go to Admin->User management page of OrangeHRM application, the system should allow me to add, edit, and delete user accounts efficiently.

Acceptance Criteria:

- The system should allow the admin to access the User Management page from the Admin module.
- The system should provide options to add a new user, edit existing user details, and delete user accounts.

- The system should validate user input and display appropriate error messages for invalid data.
- The system should display a confirmation prompt before deleting a user account.
- The system should update the user list in real-time after any changes are made.

Priority: 1

Effort: 4

TC_001: To test if the User Management page in Admin Module is accessible or not.

Given the admin is logged in

When the admin navigates to the "Admin" module

And the admin selects "User Management"

Then the system should display the User Management page

TC_002: To test if a new user is being added or not.

Given the admin is on the User Management page

When the admin clicks on the "Add" button

And the admin enters valid user details

And the admin clicks on the "Save" button

Then the system should add the new user and display a success message

And the new user should appear in the user list

TC_003: To check if a new user can be edited or not.

Given the admin is on the User Management page

And there is at least one user in the user list

When the admin selects a user and clicks on the "Edit" button

And the admin updates the user details

And the admin clicks on the "Save" button

Then the system should update the user details and display a success message

And the updated user details should appear in the user list

TC_004: Delete User

Given the admin is on the User Management page

And there is at least one user in the user list

When the admin selects a user and clicks on the "Delete" button

Then the system should display a confirmation prompt

When the admin confirms the deletion

Then the system should delete the user and display a success message

And the user should be removed from the user list

TC_005: Input Validation for Adding User

Given the admin is on the User Management page

When the admin clicks on the "Add" button

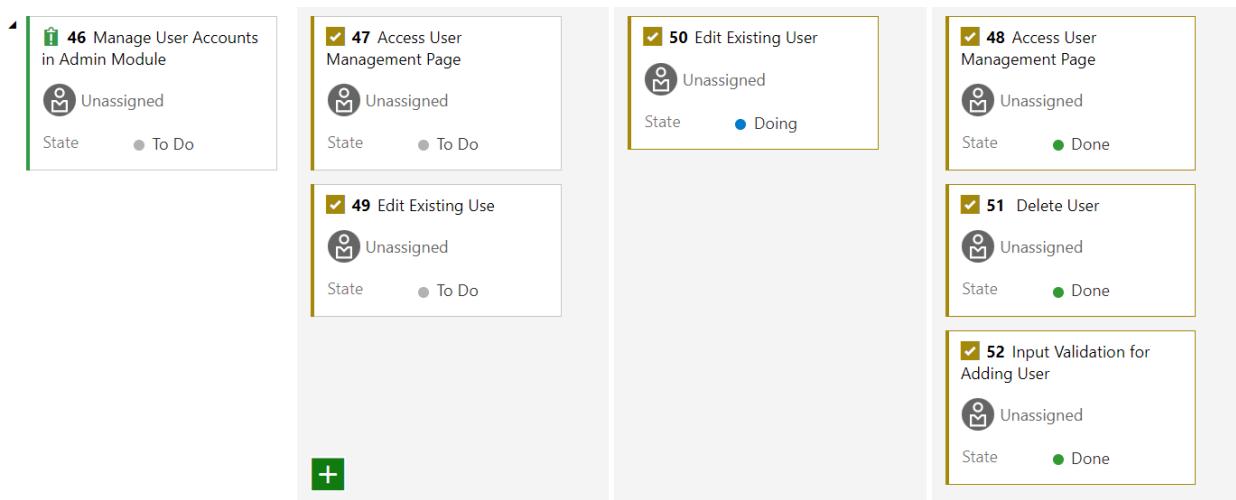
And the admin enters invalid user details (e.g., missing required fields)

And the admin clicks on the "Save" button

Then the system should display appropriate error messages for the invalid input

And the user should not be added to the user list

Test cases of User_Story 3 on Azure DevOps:



User_Story _004: TERMINATION REASONS

As a user when I go to “Termination Reasons” under “configuration” toggle under “PIM” tab then I should be able to add, edit and delete the termination terms of any employee.

Acceptance Criteria: When valid credentials are entered and select “Termination Reasons” page then:

- User should be able to add “Termination Reason” to the list.

- User should be able to edit the “Termination Reason” record of the employee.
- User should be able to delete the “Termination Reason” record of any employee.

Priority: 1

Effort: 4

The screenshot shows a Jira issue page for a new issue titled "Termination Reasons". The issue is currently unassigned and has 0 comments. The priority is set to 1 and effort to 4. The issue is in the "To Do" state and is part of the "Orange HRM Case study" project. The acceptance criteria and description are detailed below:

Description

As a user when I go to “Termination Reasons” under “configuration” toggle under “PIM” tab then I should be able to add, edit and delete the termination terms of any employee.

Acceptance Criteria: When valid credentials are entered and select “Termination Reasons” page then:

- User should be able to add “Termination Reason” to the list.
- User should be able to edit the “Termination Reason” record of the employee.
- User should be able to delete the “Termination Reason” record of any employee.

Planning

Priority: 1
Effort: 4

Deployment

Development

+ Add link

TC_001

Description: To validate the functionality of the “Add” button

Given the user is logged in to the website “<https://opensource-demo.orangehrmlive.com/web/index.php/auth/login>” in chrome web browser using the valid username “Admin” and valid password “admin123” and he is in the “Termination Reasons” tab under “Configuration” dropdown in “PIM” tab.

When the user clicks on the “Add” button

Then the user should be redirected to the page (<https://opensource-demo.orangehrmlive.com/web/index.php/pim/saveTerminationReasons>) which asks the user to type in the termination reason.

Bug Report

Description: The field ask for Name on termination reason page instead of reason which may create a confusion

Steps to reproduce:

- Open chrome browser
- Open the site <https://opensource-demo.orangehrmlive.com/web/index.php/auth/login>

- Login using username: ‘Admin’ and password: admin123
- From the list select ‘PIM’ then go to ‘Configuration’ then go to ‘Termination Reason’ and click on ‘Add’ button. The input field is showing to input ‘Name’ instead it should ask to enter the ‘Reason’

Time Stamp: 06/09/2024 10:55 AM

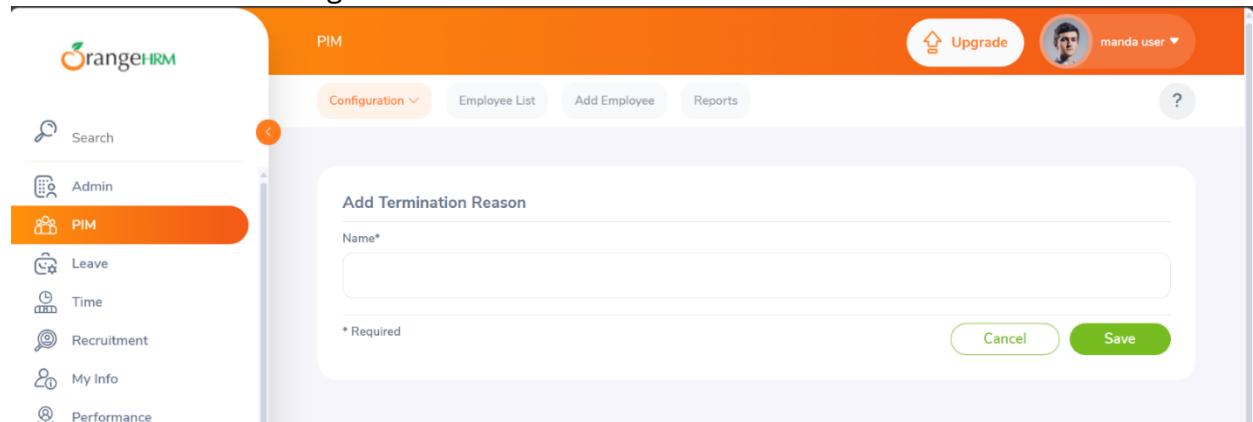
Severity: Low

Priority: Minor

Assignee: problem_dev

Expected Result: The user should be asked to enter Reason instead of Name.

Screenshot or recording:



TC_002

Description: To check whether the Termination Reason input field in accepting text input. Given the user is logged in to the website “<https://opensource-demo.orangehrmlive.com/web/index.php/auth/login>” in chrome web browser using the valid username “Admin” and valid password “admin123” and in the “Add” page in “Termination Reasons” tab under “Configuration” dropdown in “PIM” tab.

When the user clicks in the text field

Then the text field should accept user input

TC_003

Description: To validate the functionality of “Cancel” button on adding to the list on “Termination Reasons”.

Given the user is logged in to the website “<https://opensource-demo.orangehrmlive.com/web/index.php/auth/login>” in chrome web browser using the valid username “Admin” and valid password “admin123” and in the “Add” page in “Termination Reasons” tab under “Configuration” dropdown in “PIM” tab.

When the user clicks on the “Cancel” button

Then the user should be redirected to the previous page (<https://opensource-demo.orangehrmlive.com/web/index.php/pim/viewTerminationReasons>)

TC_004

Description: To validate the functionality of “Save” button on adding to the list on “Termination Reasons”.

Given the user is logged in to the website “<https://opensource-demo.orangehrmlive.com/web/index.php/auth/login>” in chrome web browser using the valid username “Admin” and valid password “admin123” and in the “Add” page in “Termination Reasons” tab under “Configuration” dropdown in “PIM” tab.

When the user clicks on the “Save” button after adding the valid input

Then the inputshould be added to the list and the user should be redirected to (<https://opensource-demo.orangehrmlive.com/web/index.php/pim/viewTerminationReasons>)

Bug Report (Flaky Bug)

Description: The ‘Add’ button is not working few times

Steps to reproduce:

- Open chrome browser
- Open the site <https://opensource-demo.orangehrmlive.com/web/index.php/auth/login>
- Login using username: ‘Admin’ and password: admin123
- From the list select ‘PIM’ then go to ‘Configuration’ then go to ‘Termination Reason’ and click on ‘Add’ button. After entering the reason when the user clicks on save then a few times the data is not added to the list.

Time Stamp: 06/09/2024 11:55 AM

Severity: Low

Priority: Minor

Assignee: problem_dev

Expected Result: The input by user should be added to the list all the times.

TC_005

Description: To validate the functionality of checkbox in the ‘Termination Reasons’ List

Given the user is logged in to the website “<https://opensource-demo.orangehrmlive.com/web/index.php/auth/login>” in chrome web browser using the valid username “Admin” and valid password “admin123” and in the “Add” page in “Termination Reasons” tab under “Configuration” dropdown in “PIM” tab.

When the user clicks on the checkbox of the termination reason in the list

Then the user should be able to select that specific item from the list on which further functions can be performed that is deletion and updation

Test cases of User_Story 4 on Azure DevOps:

User Story 5

Title: Reporting Method Functionality

As a user, when I go to PIM tab, select Configuration and click on Reporting Methods, I should be redirected to a page where I can add new reporting methods, delete and edit existing reporting methods

ACCEPTANCE CRITERIA: When user clicks on Reporting Methods:

- Should be redirected to view reporting methods page
- Should be able to new reporting methods
- Should be able to edit and delete existing reporting methods

Priority: 4

Effort: 5

Description

As a user, when I go to PIM tab, select Configuration and click on Reporting Methods, I should be redirected to a page where I can add new reporting methods, delete and edit existing reporting methods

ACCEPTANCE CRITERIA: When user clicks on Reporting Methods:

- Should be redirected to view reporting methods page
- Should be able to new reporting methods
- Should be able to edit and delete existing reporting methods

Planning

Priority

3

Effort

5

Deployment

Development

+ Add link

TC_001

Description: To validate if the user is redirected to Reporting Methods page

Given the user is logged in to the website [OrangeHRM \(orangehrmlive.com\)](http://OrangeHRM (orangehrmlive.com)) using the valid username “Admin” and valid password “admin123”

When user clicks on PIM tab -> Configuration Drop down -> Reporting Methods

Then user should be navigated to Reporting Methods page <https://opensource-demo.orangehrmlive.com/web/index.php/pim/viewReportingMethods>

S. No.	Page Name	Page accessibility (Pass/Fail)	
		Actual	Expected
1	Reporting Methods	Pass	Pass

TC_002

Description: To validate if the user is redirected to save reporting method page

Given the user is on the Reporting Methods page <https://opensource-demo.orangehrmlive.com/web/index.php/pim/viewReportingMethods>

And user clicks on the Add button

Then the user should be redirected to Save reporting method page <https://opensource-demo.orangehrmlive.com/web/index.php/pim/saveReportingMethod>

S. No.	Page Name	Page accessibility (Pass/Fail)	
		Actual	Expected
1	Save Reporting Method	Pass	Pass

TC_003

Description: To validate if the user is able to add a new reporting method

Given the user is on the Save reporting method page <https://opensource-demo.orangehrmlive.com/web/index.php/pim/saveReportingMethod>

When user writes a new reporting method in the Name field

And clicks on the Save button

Then the new reporting method should get added the reporting methods list

S. No.	New reporting method	New reporting method getting added (Pass/Fail)	
		Actual	Expected
1	Test Report	Pass	Pass

TC_004

Description: To validate if the user is able to delete an existing reporting method

Given the user is on the Reporting Methods page <https://opensource-demo.orangehrmlive.com/web/index.php/pim/viewReportingMethods>

When the user clicks on the delete icon of any reporting method except Direct (as it is always in use)

And clicks on the Yes, Delete button

Then that reporting method should be deleted from the reporting methods

S. No.	Reporting method	Reporting method getting deleted (Pass/Fail)	
		Actual	Expected
1	Indirect	Pass	Pass
2	Test Report	Pass	Pass

TC_005

Description: To validate if the user is able to edit an existing reporting method

Given the user is on the Reporting Methods page <https://opensource-demo.orangehrmlive.com/web/index.php/pim/viewReportingMethods>

When the user clicks on the edit icon of any reporting method

And writes the new name of that reporting method and clicks on Save button

Then that reporting method's name should be edited

S. No.	Reporting method	Reporting method getting deleted (Pass/Fail)	
		Actual	Expected
1	Direct	Pass	Pass
2	Indirect	Pass	Pass
3	Test Report	Pass	Pass

Test cases of User Story 5 on Azure Devops:

The screenshot shows a Kanban board with four columns: Backlog, In Progress, Testing, and Done. The 'In Progress' column contains four items, each with a yellow checkmark indicating they are checked.

- 8 Reporting methods**: Unassigned, State: To Do.
- 21 To validate if the user is redirected to Reporting Methods page**: Unassigned, State: To Do.
- 67 To validate if the user is able to add a new reporting method**: Unassigned, State: Doing.
- 68 To validate if the user is able to delete an existing reporting method**: Unassigned, State: Done.

A green '+' button is located at the bottom left of the board.