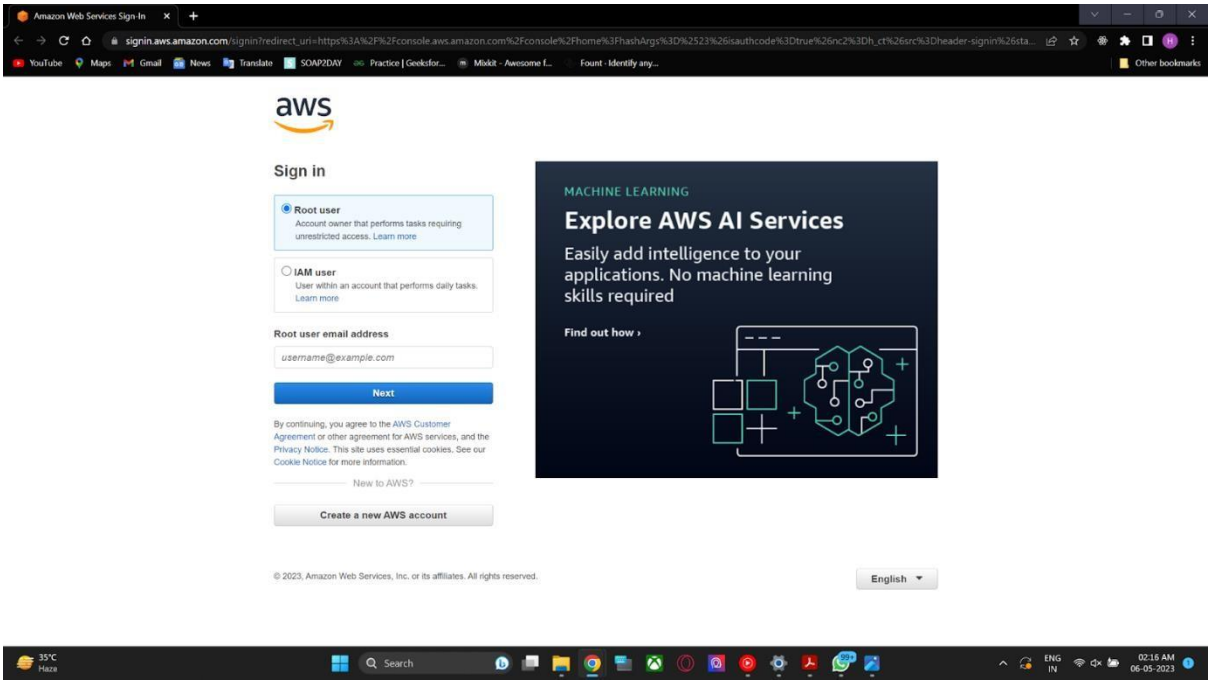
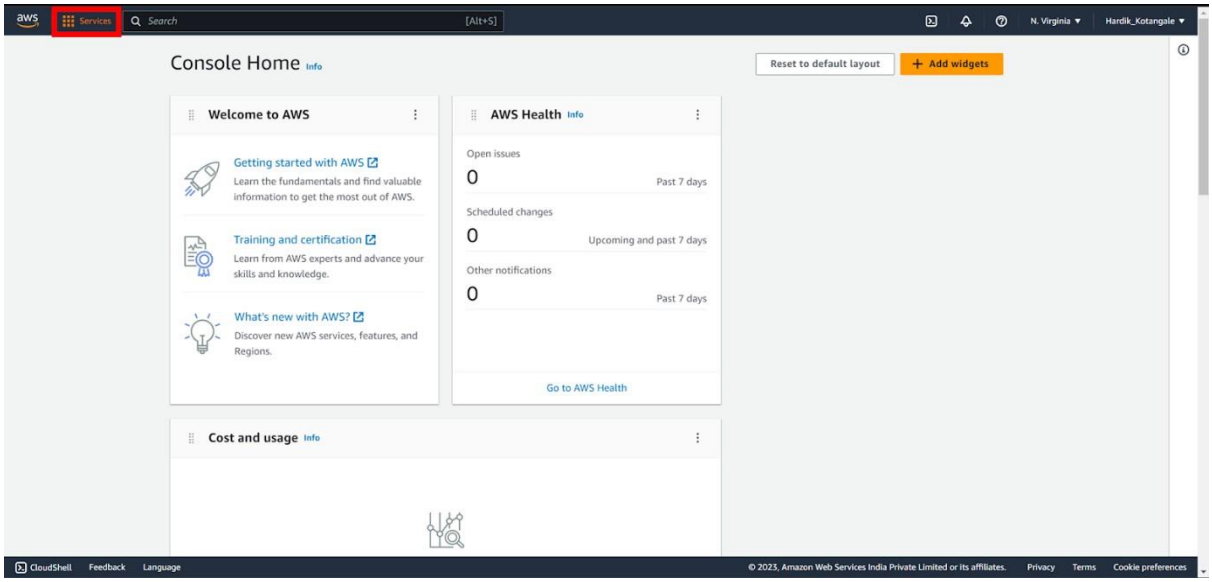
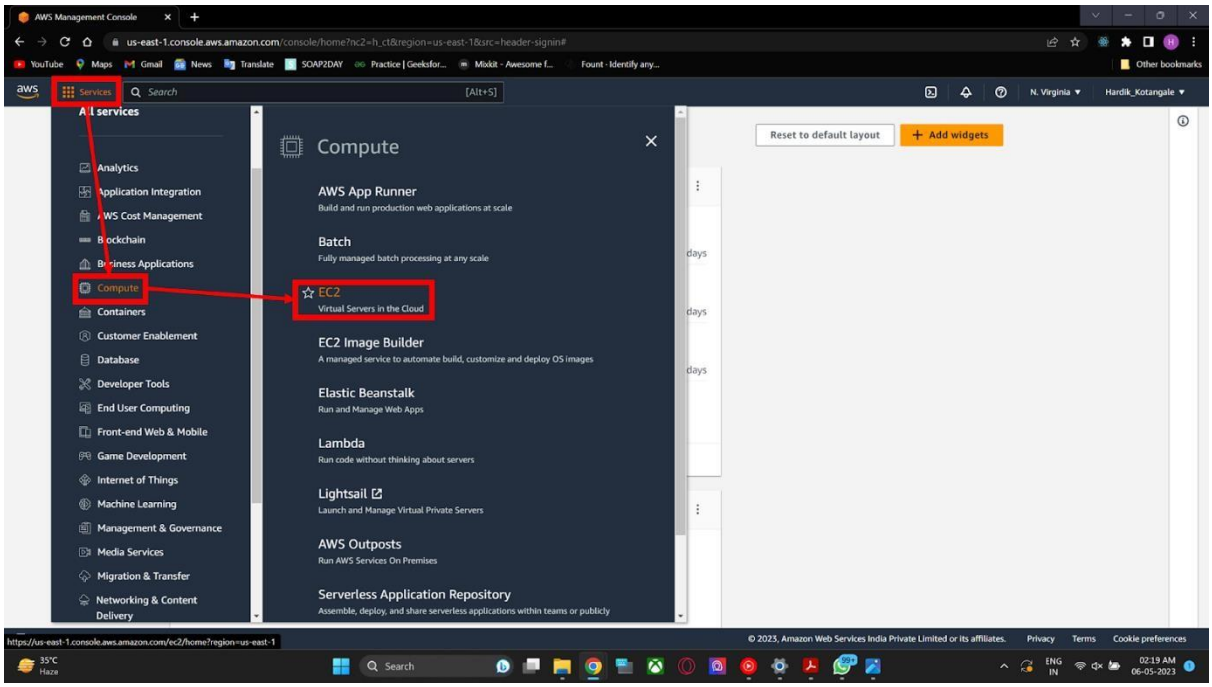
Implementation

Step 1 :- Sign in to AWS Account
https://signin.aws.amazon.com/signin?redirect_uri=https%3A%2F%2Fconsole.aws.amazon.com%2Fconsole%2Fhome%3FhashArgs%3D%2523%26isauthcode%3Dtrue%26nc2%3Dh_ct%26src%3Dheader-signin%26state%3DhashArgsFromTB_eu-north-1_522611e77e2d291b&client_id=arn%3Aaws%3Asignin%3A%3A%3Aconsole%2Fcanvas&forceMobileApp=0&code_challenge=9IbjLkDwSPZ5p9SWe-PveqynNv5PaUI_IIBU2gzi6dU&code_challenge_method=SHA-256

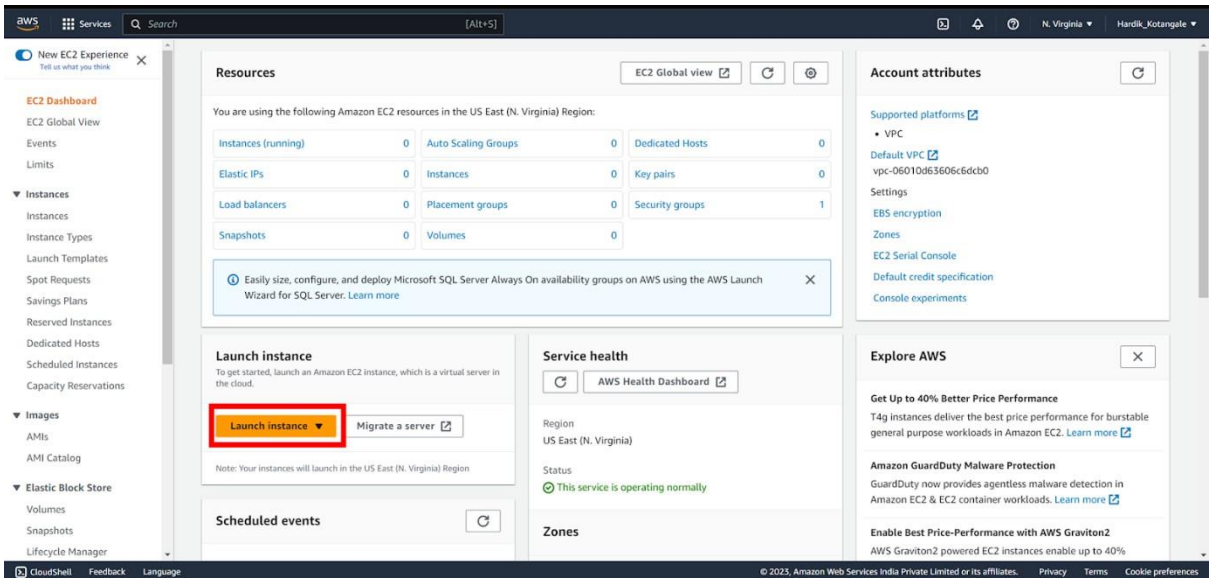


Step 2:-To run an instance, you can navigate to the AWS services menu, select the "Computing" option, and then choose "EC2". This will take you to the EC2 dashboard where you can launch and manage your instances.

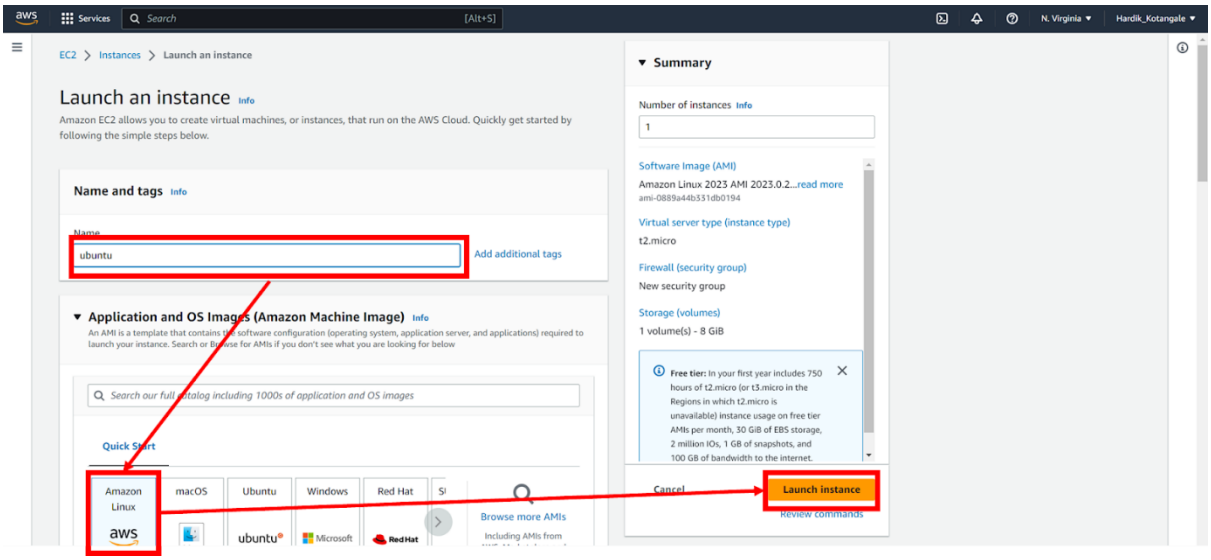




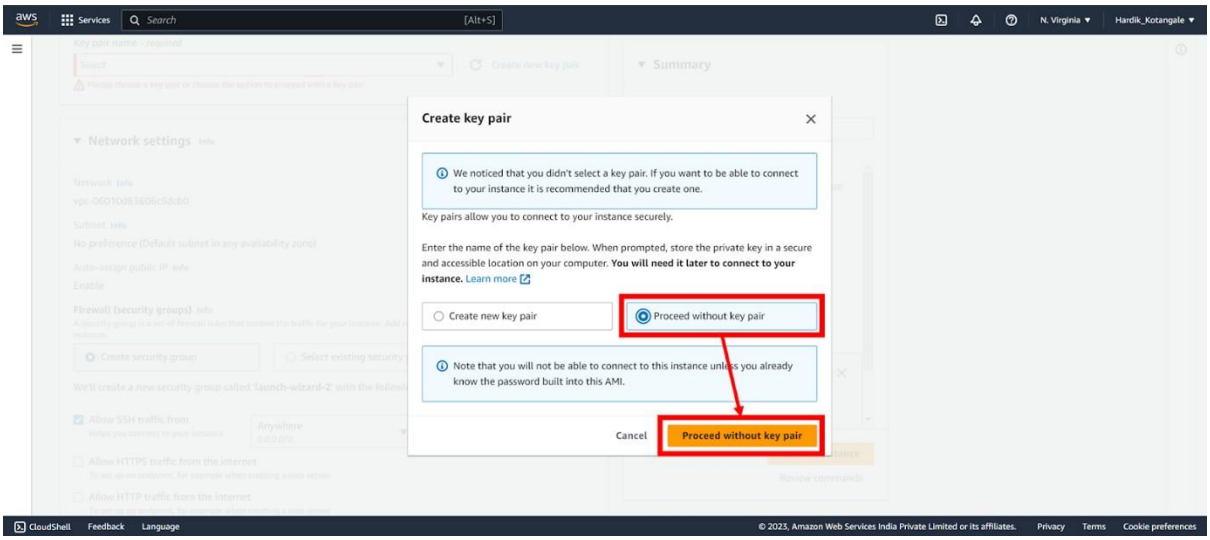
Step 3 :- To set up the instance, we have to click on "Launch Instance".



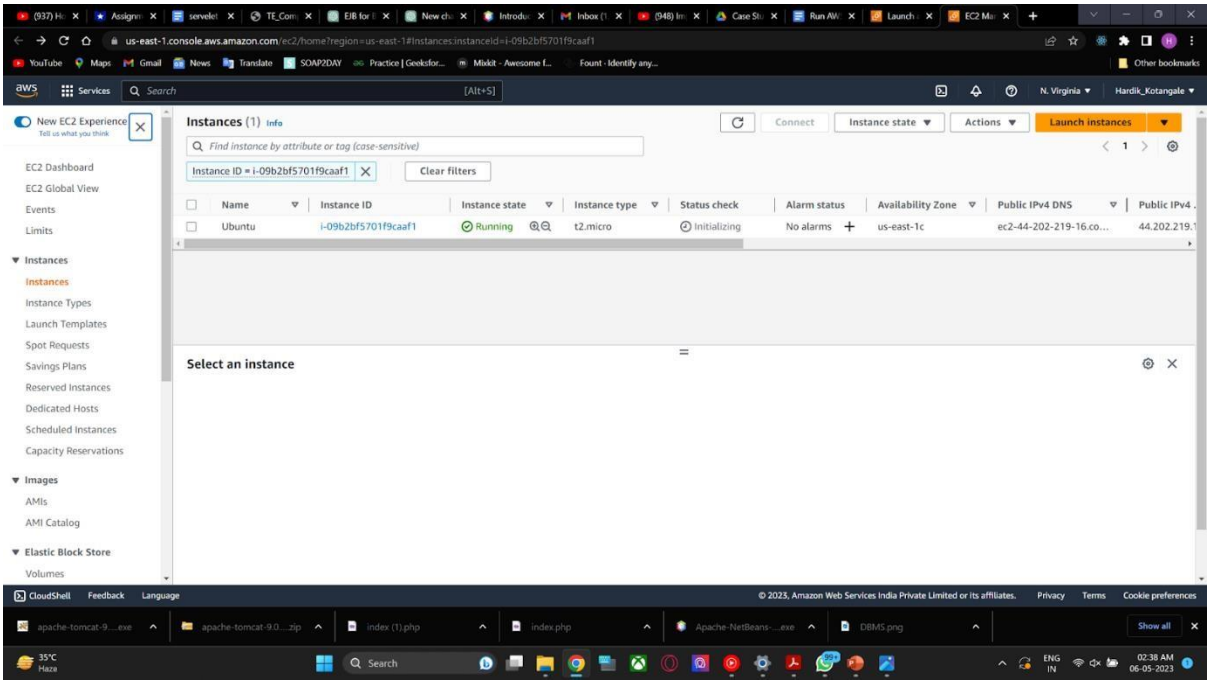
Step 4:- You need to provide a name for the instance. From there, you can select the operating system or application that you want to run on the instance.Then click on launch instance



Step 5:-To proceed without a key pair, select the "Proceed without a key pair" option and click on it.



Step 6:- Monitor your instance

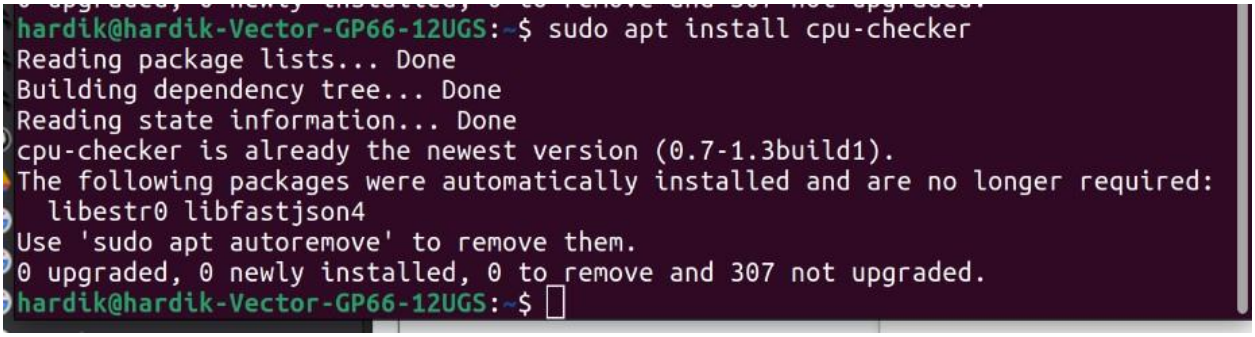


Before you begin with installing KVM, check if your CPU supports hardware virtualization via egrep command:

1.egrep -c '(vmx|svm)' /proc/cpuinfo

To install cpu-checker, run the following command:

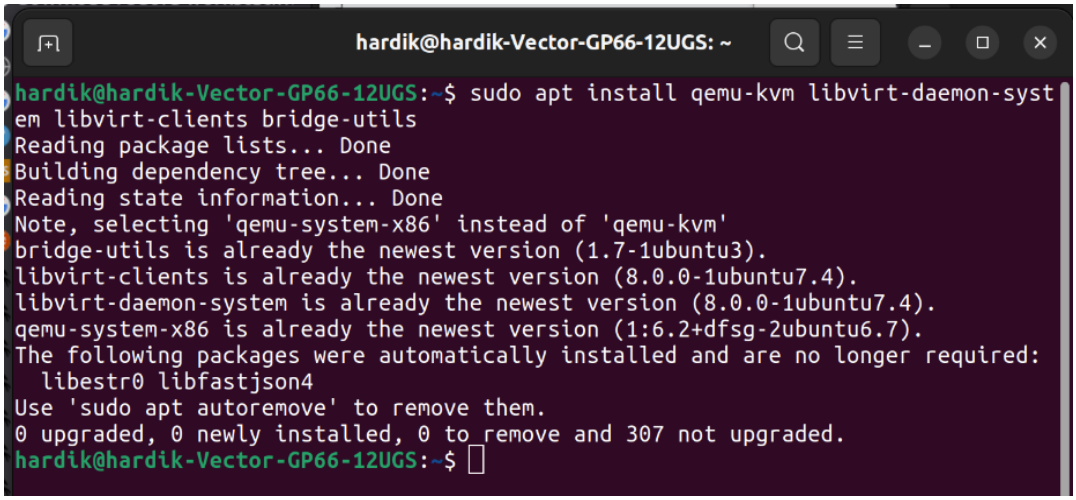
2.sudo apt install cpu-checker



First, update the repositories:

3.sudo apt update

Then, install essential KVM packages with the following command:
4.sudo apt install qemu-kvm libvirt-daemon-system libvirt-clients bridge-utils

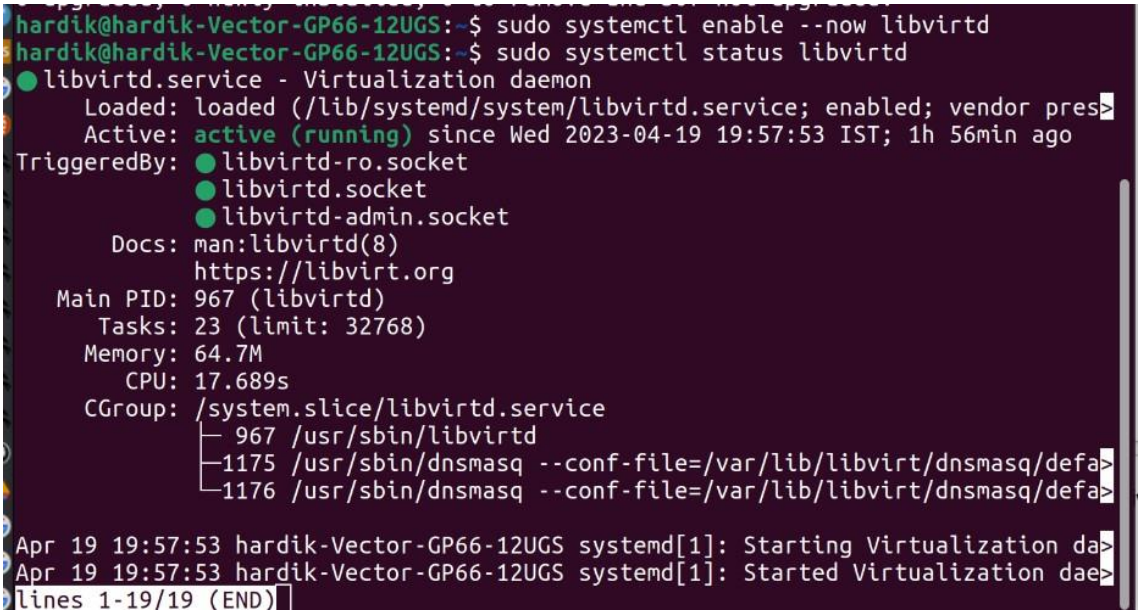


To activate virtualization daemon with the following command:

sudo systemctl enable --now libvirtd

use the systemctl command to check the status of libvirtd:

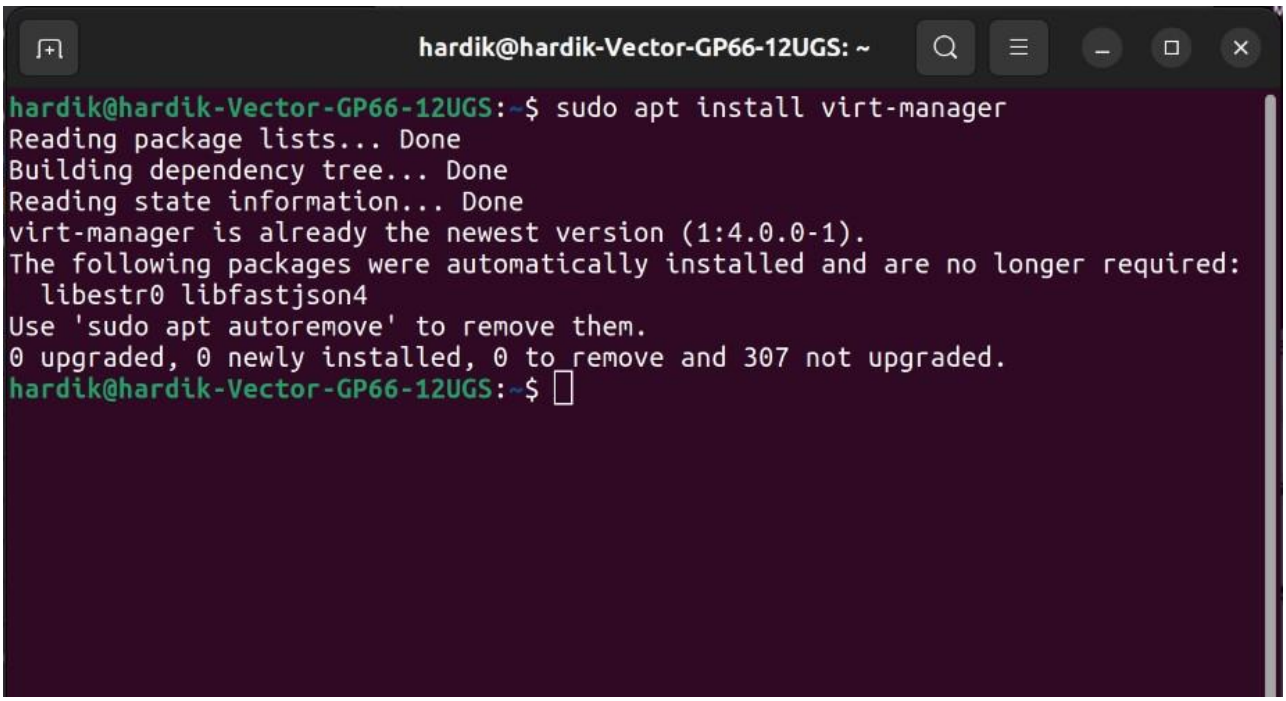
6.sudo systemctl status libvirtd



Press **Q or Ctrl + C** to quit the status screen.

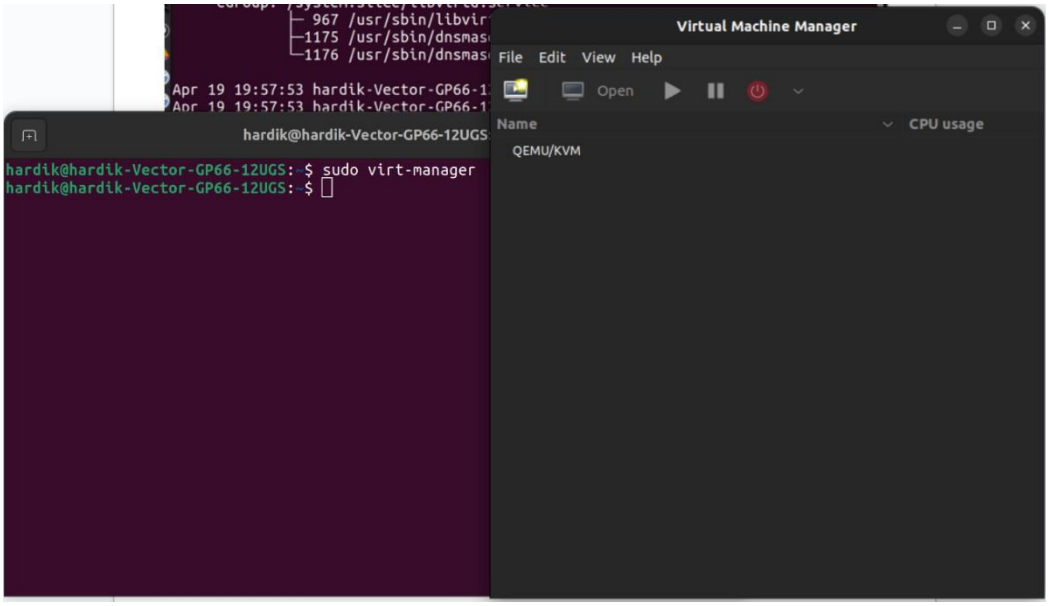
To create a Virtual machine in Ubuntu we need to install virt-manager, a tool for creating and managing VMs:

7.sudo apt install virt-manager

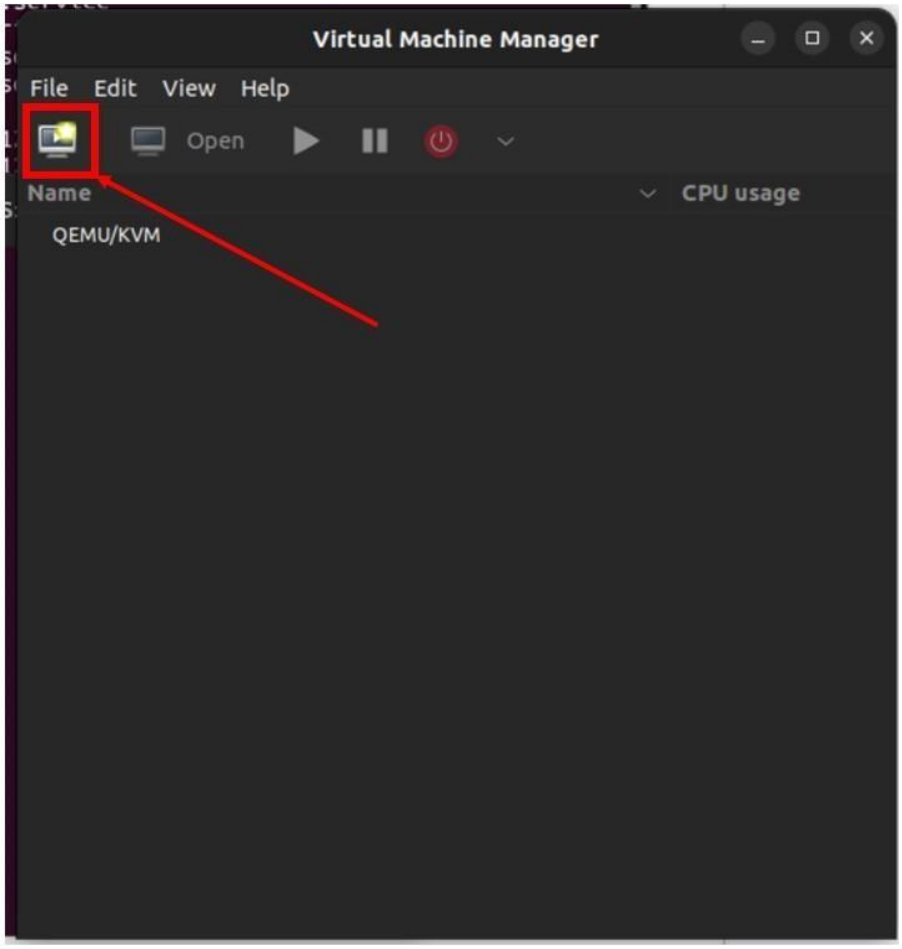


To start virtual machine GUI

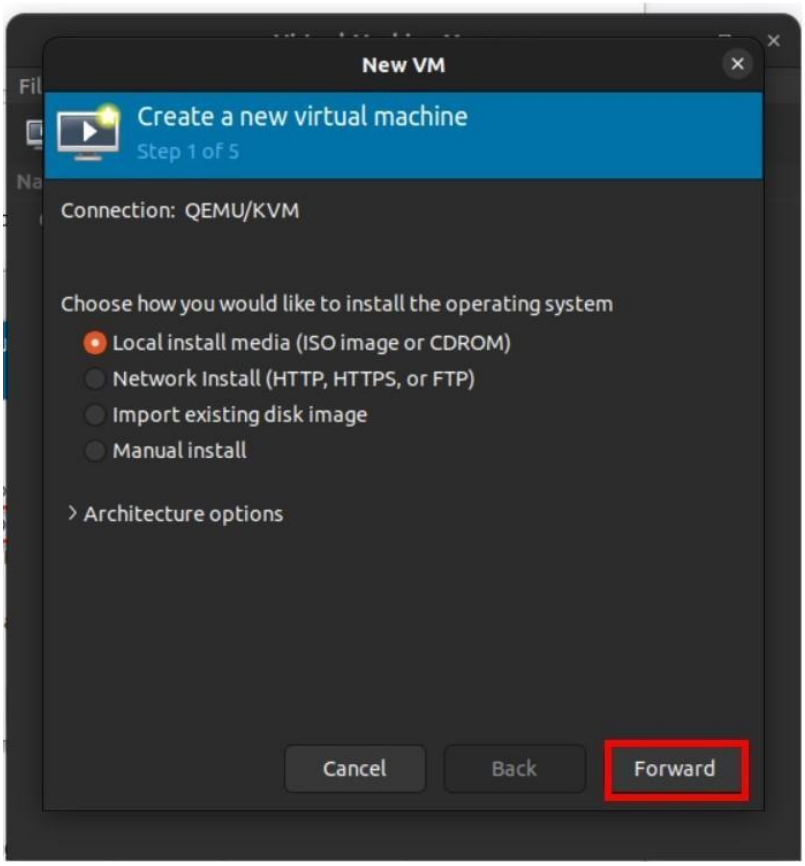
8.sudo virt-manager



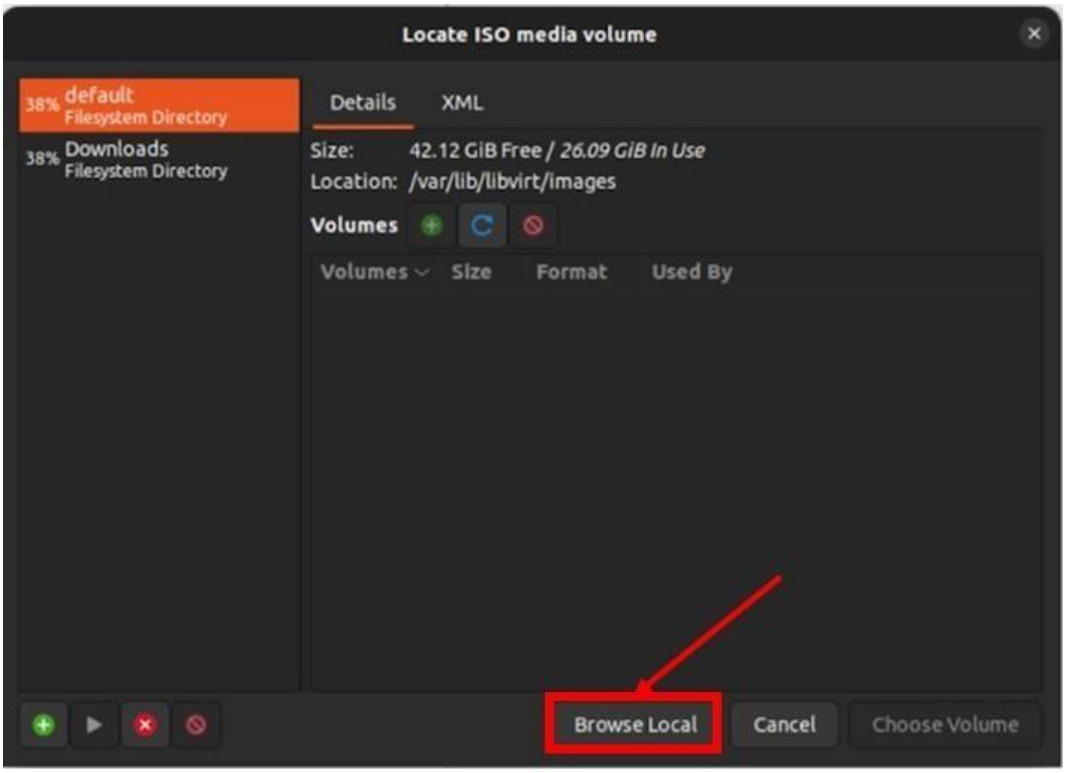
In the first window, click the computer icon in the upper-left corner.



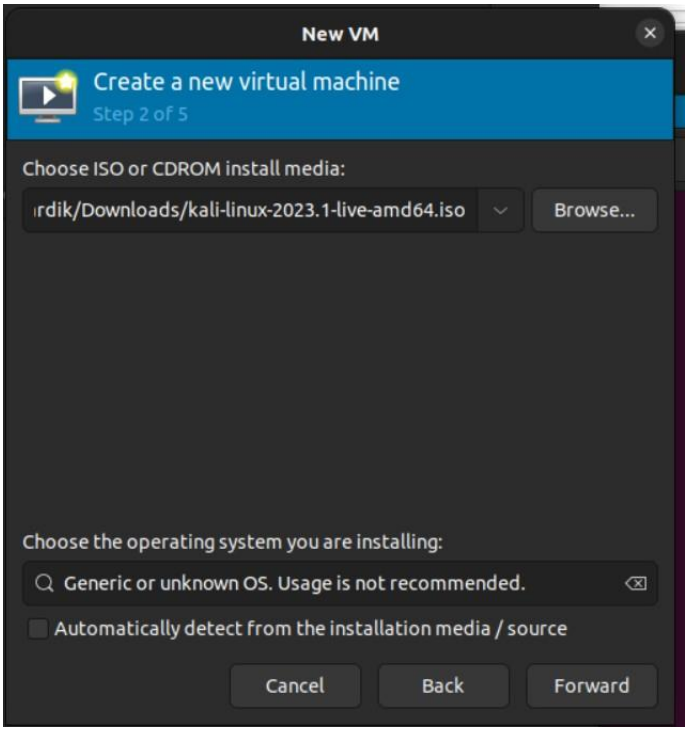
In the dialogue box that opens, select the option to install the VM using an ISO image. Then click **Forward**.



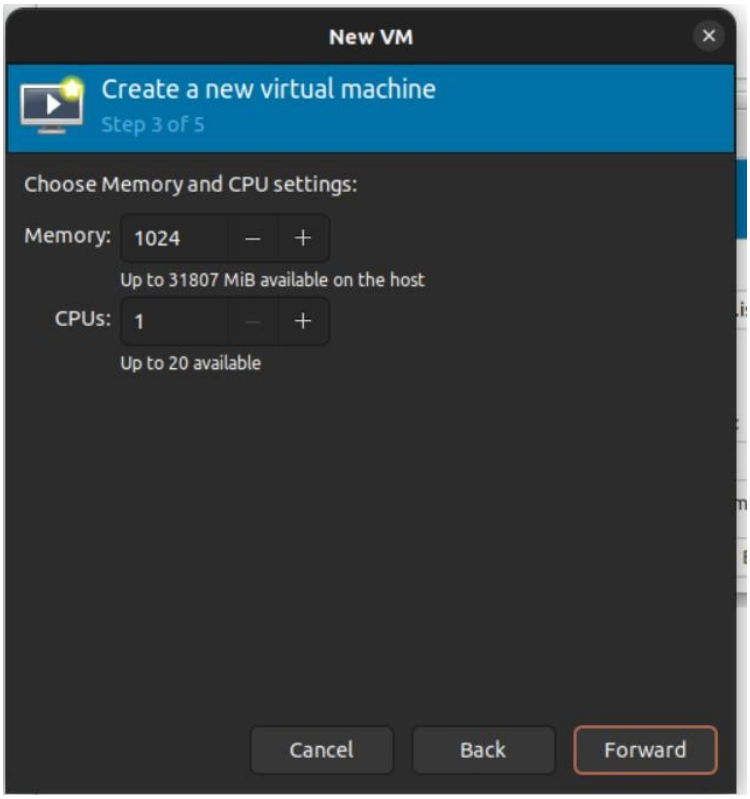
In the next dialogue, click **Browse Local** and navigate to the path where you stored the ISO you wish to install.



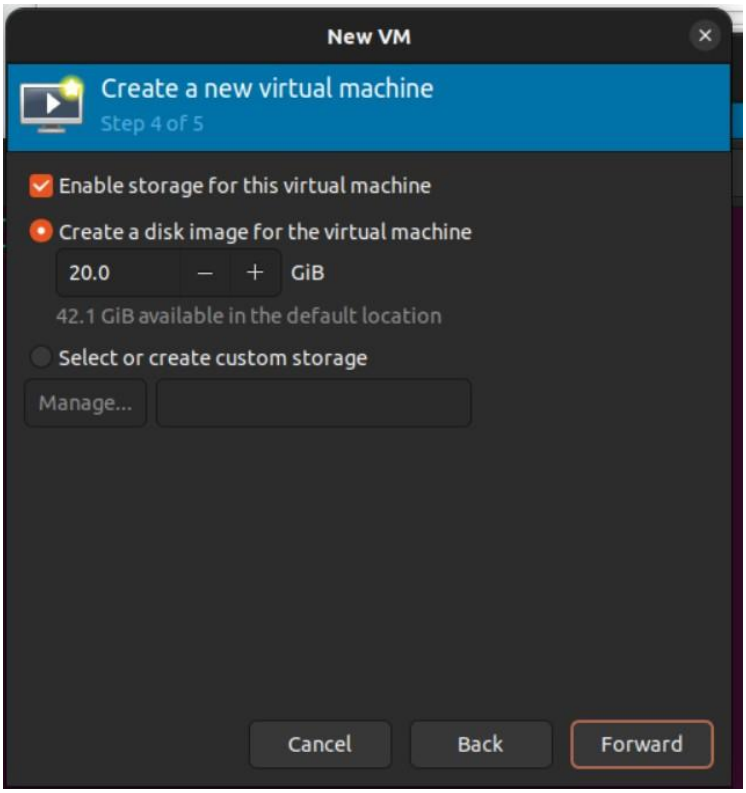
Type **Generic or Unknown OS** if Operating System is not detected.Then Click on Forward



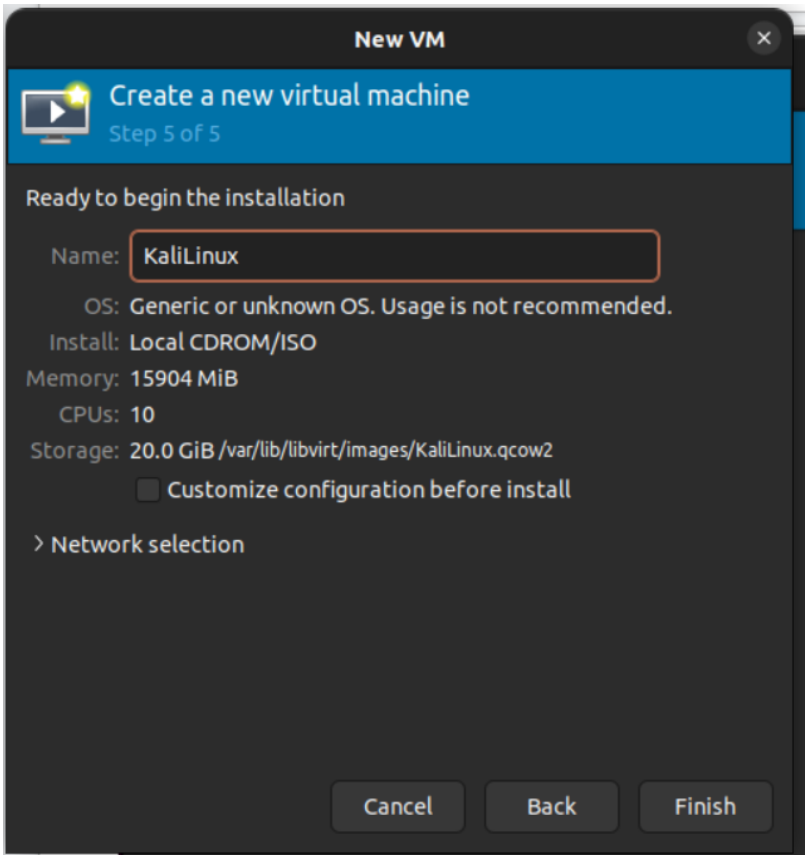
Enter the **amount of RAM** and the **number of CPUs** you wish to allocate to the VM and proceed to the next step.



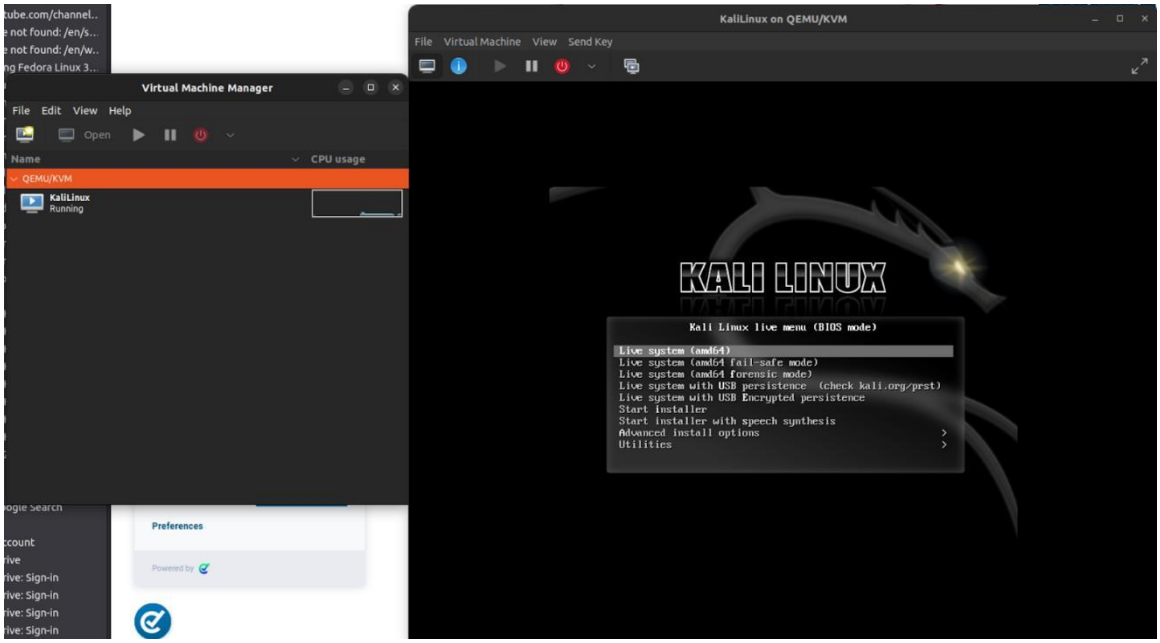
Allocate **hard disk space** to the VM. Click Forward to go to the last step.



Specify the **name for your VM** and click Finish to complete the setup



The VM starts automatically, prompting you to start installing the OS that’s on the ISO file.



CODE:-

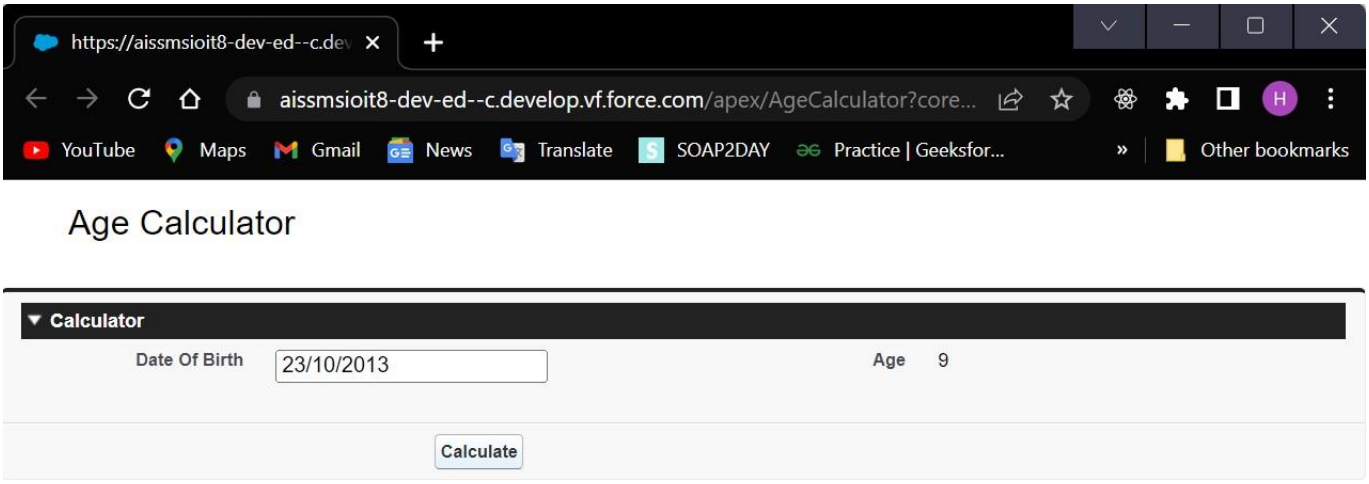
AgeCalculator.apxc

```
public class AgeCalculator {
  public Date birthdate {get; set;}
  public integer result {get; set;}
  // Define a method to calculate the age in years based on a birthdate
  public void calculateAge() {
    Date today = Date.today();
    Integer years = today.year() - birthdate.year();
    if (birthdate.month() > today.month() ||
        (birthdate.month() == today.month() && birthdate.day() > today.day())) {
      years--;
    }
    result = years;
  }}
```

AgeCalculator.vfp

```
<apex:page controller="AgeCalculator">
<apex:sectionHeader subtitle="Age Calculator"/>
<apex:form >
<apex:pageBlock >
<apex:pageBlockButtons location="bottom">
<apex:commandButton value="Calculate" action="{!calculateAge}" reRender="res"/>
</apex:pageBlockButtons>
<apex:pageBlockSection title="Calculator">
<apex:inputText label="Date Of Birth" html-placeholder="Date Of Birth"
value="{!birthdate}"/>
<apex:outputText label="Age" value="{!result}" id="res"/>
</apex:pageBlockSection>
</apex:pageBlock>
</apex:form>
</apex:page>
```

OUTPUT:-


https://aissmsioit8-dev-ed--c.dev
aissmsioit8-dev-ed--c.develop.vf.force.com/apex/AgeCalculator?core...
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Other bookmarks
Age Calculator
Calculator
Date Of Birth
23/10/2013
Age
9
Calculate

CODE:-

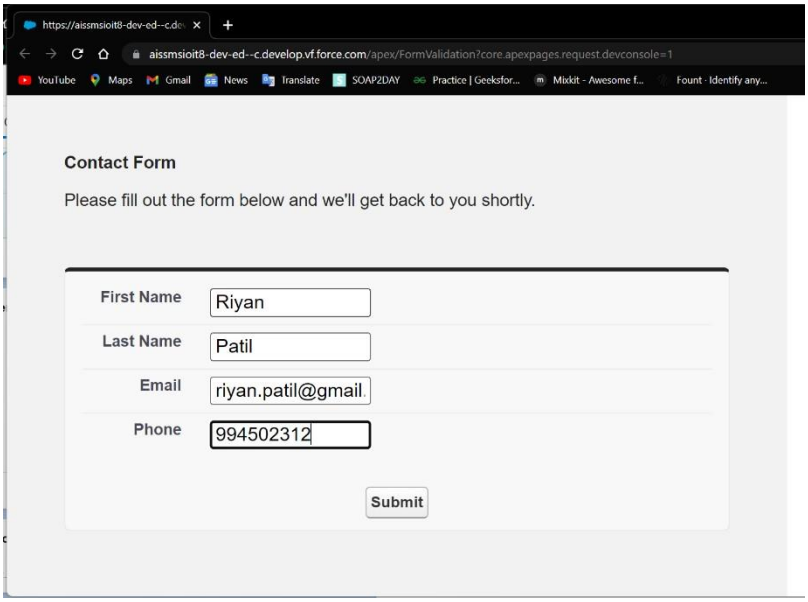
FormValidation.apxc

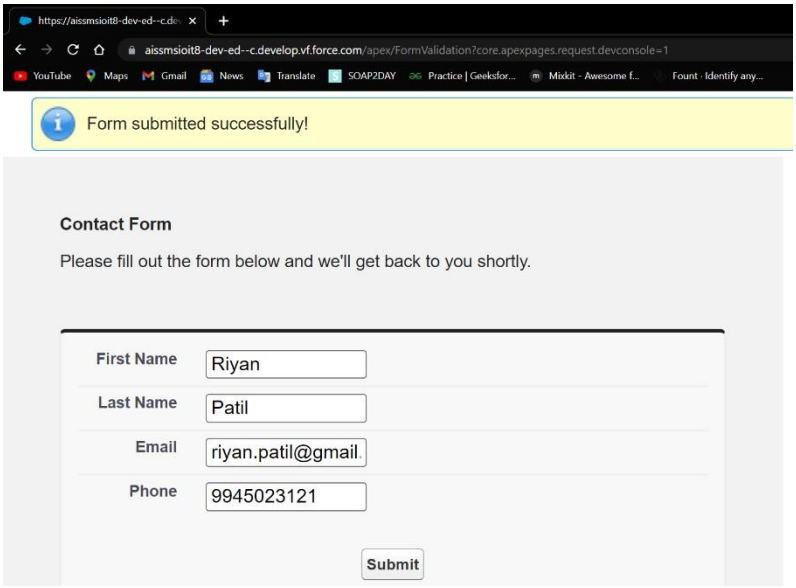
```
public class FormValidation {

    public String firstName { get; set; }
    public String lastName { get; set; }
    public String email { get; set; }
    public String phone { get; set; }

    public void submit() {

        // Perform form validation
        if (String.isBlank(firstName)) {
            ApexPages.addMessage(new ApexPages.Message(ApexPages.Severity.ERROR,
'First name is required.'));
        }
        if (String.isBlank(lastName)) {
            ApexPages.addMessage(new ApexPages.Message(ApexPages.Severity.ERROR,
'Last name is required.'));
        }
        if (String.isBlank(email) || !Pattern.matches('[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\\.[a-
zA-Z]{2,}', email)) {
            ApexPages.addMessage(new ApexPages.Message(ApexPages.Severity.ERROR,
'Please enter a valid email address.'));
        }
        if (String.isBlank(phone) || !Pattern.matches('\\d{10}', phone)) {
            ApexPages.addMessage(new ApexPages.Message(ApexPages.Severity.ERROR,
'Please enter a valid phone number.'));
        }

        // If there are no validation errors, save the form data
        if (ApexPages.getMessages().isEmpty()) {
            // Code to save the form data
            // ...
            ApexPages.addMessage(new ApexPages.Message(ApexPages.Severity.INFO, 'Form
submitted successfully!'));
        }
    }
}
```

FormValidation.vfp

```
<apex:page controller="FormValidation" showHeader="false" sidebar="false" >
   <apex:form style="align-items:center;">
      <apex:pageMessages />
      <div style="padding: 40px; width: 50%; background-color: #f2f2f2;">
         <h2 style="margin-bottom: 10px;">Contact Form</h2>
         <p style="margin-bottom: 40px;">Please fill out the form below and we'll get back to
you shortly.</p>
         <apex:pageBlock >
            <apex:pageBlockSection columns="1" >
               <apex:inputText value="{!firstName}" label="First Name" required="true"
style="width: 30%;" />
               <apex:inputText value="{!lastName}" label="Last Name" required="true"
style="width: 30%;" />
               <apex:inputText value="{!email}" label="Email" required="true" style="width:
30%;" />
               <apex:inputText value="{!phone}" label="Phone" required="true" style="width:
30%;" />
            </apex:pageBlockSection> <div style="text-align: center; margin-top: 20px;">
            <apex:commandButton value="Submit" action="{!submit}" styleClass="my-
button" />
            </div>
         </apex:pageBlock>
      </div>
   </apex:form>
</apex:page>
```

OUTPUT:-


https://aissmsioit8-dev-ed--c.develop.vf.force.com/apex/FormValidation?core.apexpages.request.devconsole=1
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Mixkit - Awesome f...
Fount - Identify any...
Contact Form
Please fill out the form below and we'll get back to you shortly.
First Name
Riyan
Last Name
Patil
Email
riyan.patil@gmail.
Phone
994502312
Submit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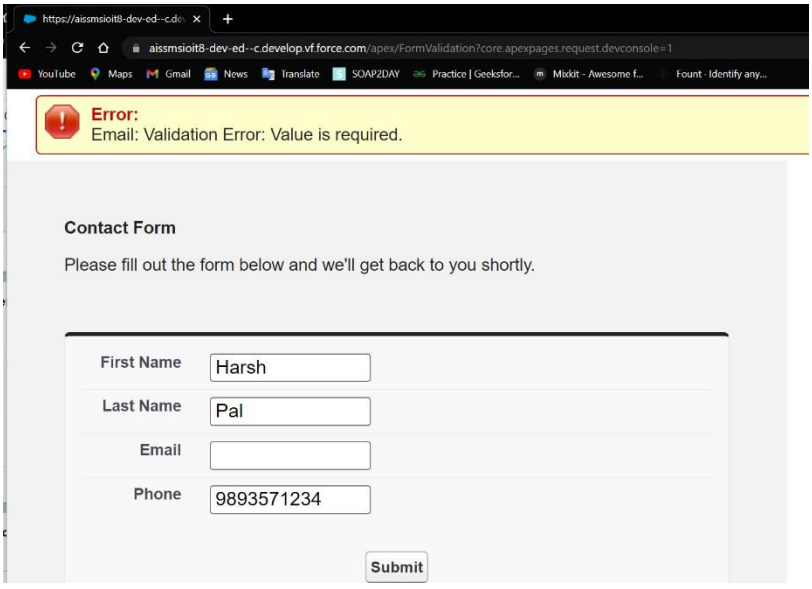
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Mixkit - Awesome f...
Fount - Identify any...
Form submitted successfully!
Contact Form
Please fill out the form below and we'll get back to you shortly.
First Name
Riyan
Last Name
Patil
Email
riyan.patil@gmail.
Phone
9945023121
Submit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YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Mixkit - Awesome f...
Fount - Identify any...
Error:
Email: Validation Error: Value is required.
Contact Form
Please fill out the form below and we'll get back to you shortly.
First Name
Harsh
Last Name
Pal
Email
Phone
9893571234
Submit

CODE:-

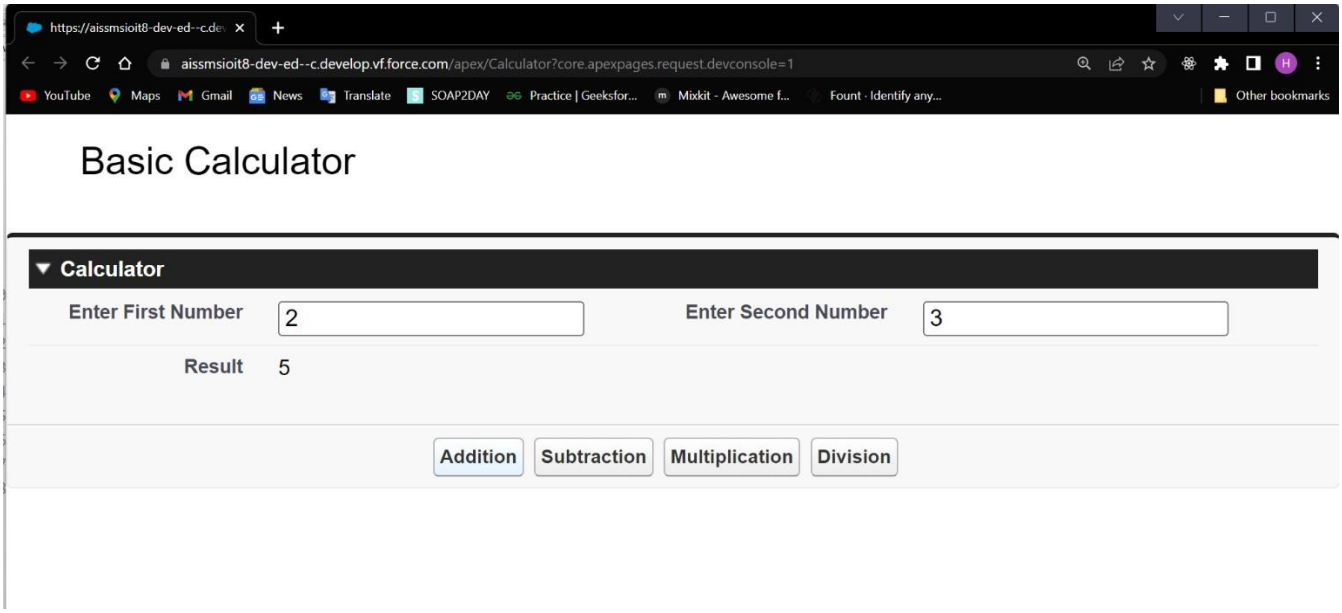
Calculator.apxc

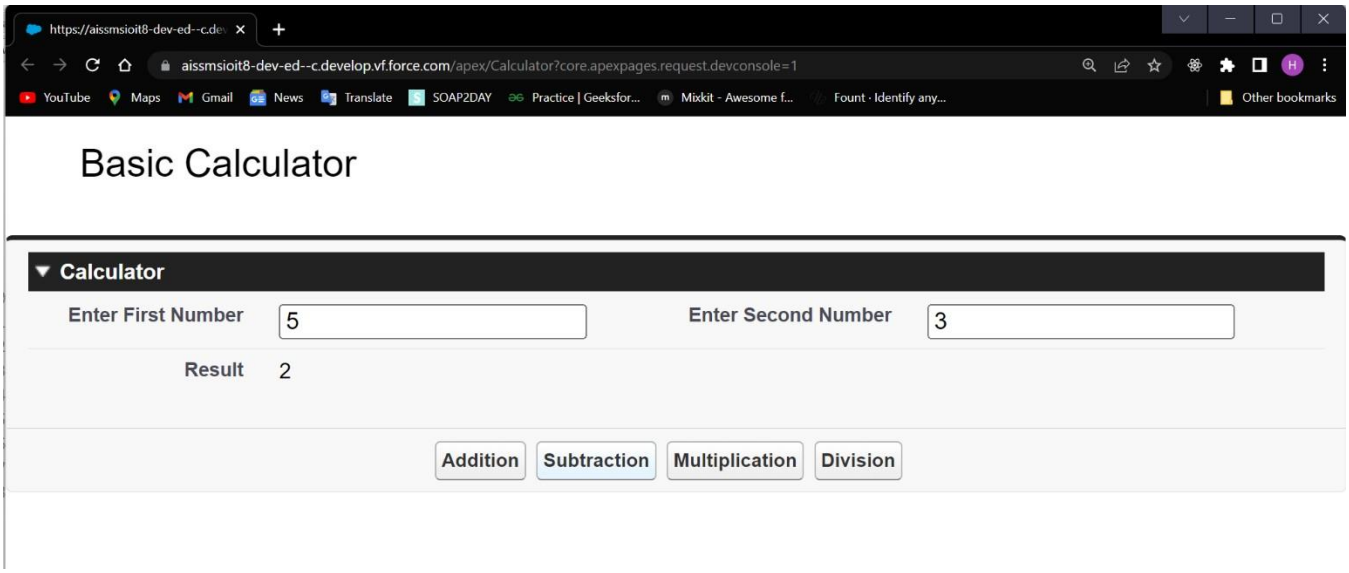
```
public class Calculator {

    public integer firstNumber {get; set;}
    public integer secondNumber {get; set;}
    public integer result {get; set;}
    public void addition() {
                result = firstNumber + secondNumber ;
    }
    public void subtraction() {
                result = firstNumber - secondNumber ;
    }
    public void Multiplication() {
                result = firstNumber * secondNumber ;
    }
    public void Division()
          result =  result = firstNumber / secondNumber
    }
}
```

Calculator.vfp

```
<apex:page controller="Calculator">
<apex:sectionHeader subtitle="Basic Calculator"/>
<apex:form >
<apex:pageBlock >
<apex:pageBlockButtons location="bottom">
<apex:commandButton value="Addition" action="{!addition}" reRender="res"/>
<apex:commandButton value="Subtraction" action="{!subtraction}" reRender="res"/>
<apex:commandButton value="Multiplication" action="{!Multiplication}" reRender="res"/>
<apex:commandButton value="Division" action="{!Division}" reRender="res"/>
</apex:pageBlockButtons>
<apex:pageBlockSection title="Calculator">
<apex:inputText label="Enter First Number" html-placeholder="First Number"
value="{!firstNumber}"/>
<apex:inputText label="Enter Second Number" html-placeholder="Second Number"
value="{!secondNumber}"/>
<apex:outputText label="Result" value="{!result}" id="res"/>
</apex:pageBlockSection>
</apex:pageBlock>
</apex:form>
</apex:page>
```

OUTPUT:-


https://aissmsioit8-dev-ed--c.de
aissmsioit8-dev-ed--c.develop.vf.force.com/apex/Calculator?core.apexpages.request.devconsole=1
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Mixkit - Awesome f...
Fount · Identify any...
Other bookmarks
Basic Calculator
Calculator
Enter First Number
2
Enter Second Number
3
Result
5
Addition
Subtraction
Multiplication
Division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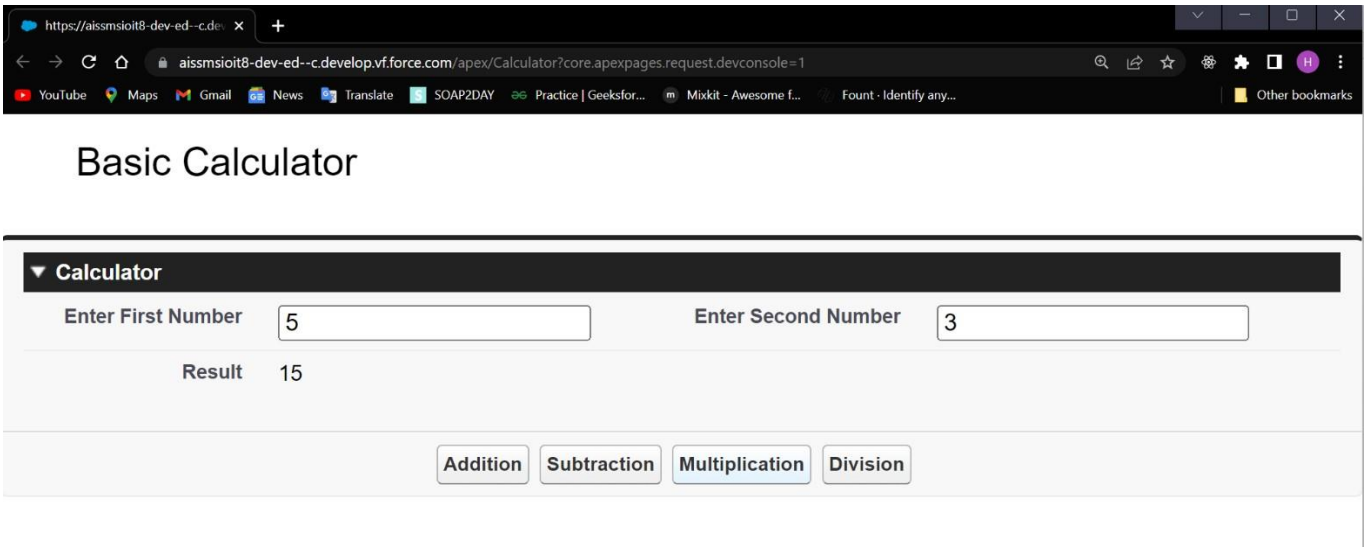
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Mixkit - Awesome f...
Fount · Identify any...
Other bookmarks
Basic Calculator
Calculator
Enter First Number
5
Enter Second Number
3
Result
2
Addition
Subtraction
Multiplication
Division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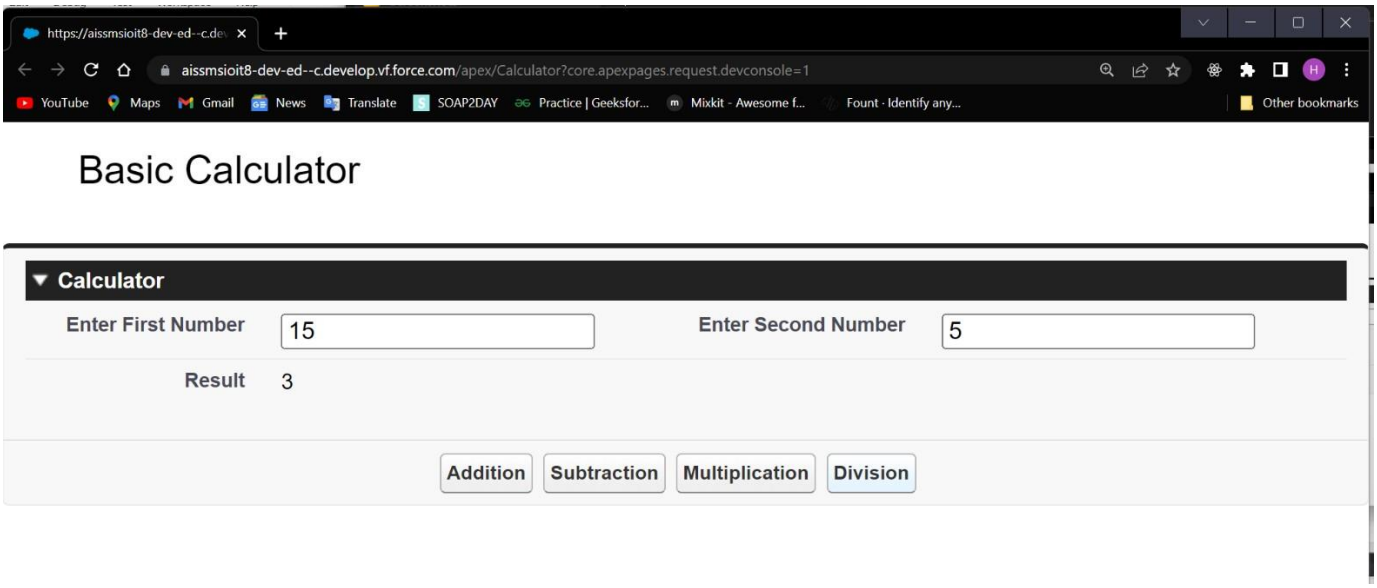
aissmsioit8-dev-ed--c.develop.vf.force.com/apex/Calculator?core.apexpages.request.devconsole=1
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Mixkit - Awesome f...
Fount · Identify any...
Other bookmarks
Basic Calculator
Calculator
Enter First Number
5
Enter Second Number
3
Result
15
Addition
Subtraction
Multiplication
Division


https://aissmsioit8-dev-ed--c.dev
aissmsioit8-dev-ed--c.develop.vf.force.com/apex/Calculator?core.apexpages.request.devconsole=1
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Mixkit - Awesome f...
Fount · Identify any...
Other bookmarks
Basic Calculator
Calculator
Enter First Number
15
Enter Second Number
5
Result
3
Addition
Subtraction
Multiplication
Division

CODE:-

Game.apxc

```
public class Game {
    public integer counter {get;set;}
    public integer totalCleared {get;set;}
    public Integer secCount {get;set;}

    public Set<Integer> alreadyUsed {get;set;}
    public List<Integer> shuffledNumbersByCh {get;set;}
    Public List<List<Integer>> numberList {get;set;}
    public Game () {
        totalCleared = 1;
        shuffleNumbers();
    }
    public void shuffleNumbers() {
        //set the range of numbers from to N
        Integer lsitSize = 25;
        alreadyUsed= new Set<Integer>();
        shuffledNumbersByCh = new List<Integer>();
        while(shuffledNumbersByCh .size() < lsitSize){
            shuffledNumbersByCh .add(getRandom(lsitSize));
        }
        for(integer i=0; i< shuffledNumbersByCh.size(); i++) {
            shuffledNumbersByCh[i] = shuffledNumbersByCh[i]+1;
        }
        system.debug('Final shuffled Numbers'+shuffledNumbersByCh );
        numberList = new List<List<Integer>>();
        List<Integer> rowList = new List<Integer>();
        Integer j =0;
        for(integer i =0; i<=24; i++) {
            J= i+1;
            rowList.add(shuffledNumbersByCh[i]);
            if(Math.Mod(j,5) ==0) {
                numberList.add(rowList);
                rowList = new List<Integer>();
            }
        }
    }
    public Integer getRandom(Integer shuffledMaxNumber){
        Integer randomNum;
        do {
            randomNum = (math.random() * shuffledMaxNumber).intValue();
```

```
        } while (alreadyUsed.contains(randomNum));
        alreadyUsed.add(randomNum);
        return randomNum;
    }
    public void updateCount() {
        counter = counter +1;
        totalCleared = totalCleared +1;
        system.debug('counter counter '+counter );
    }
}
```

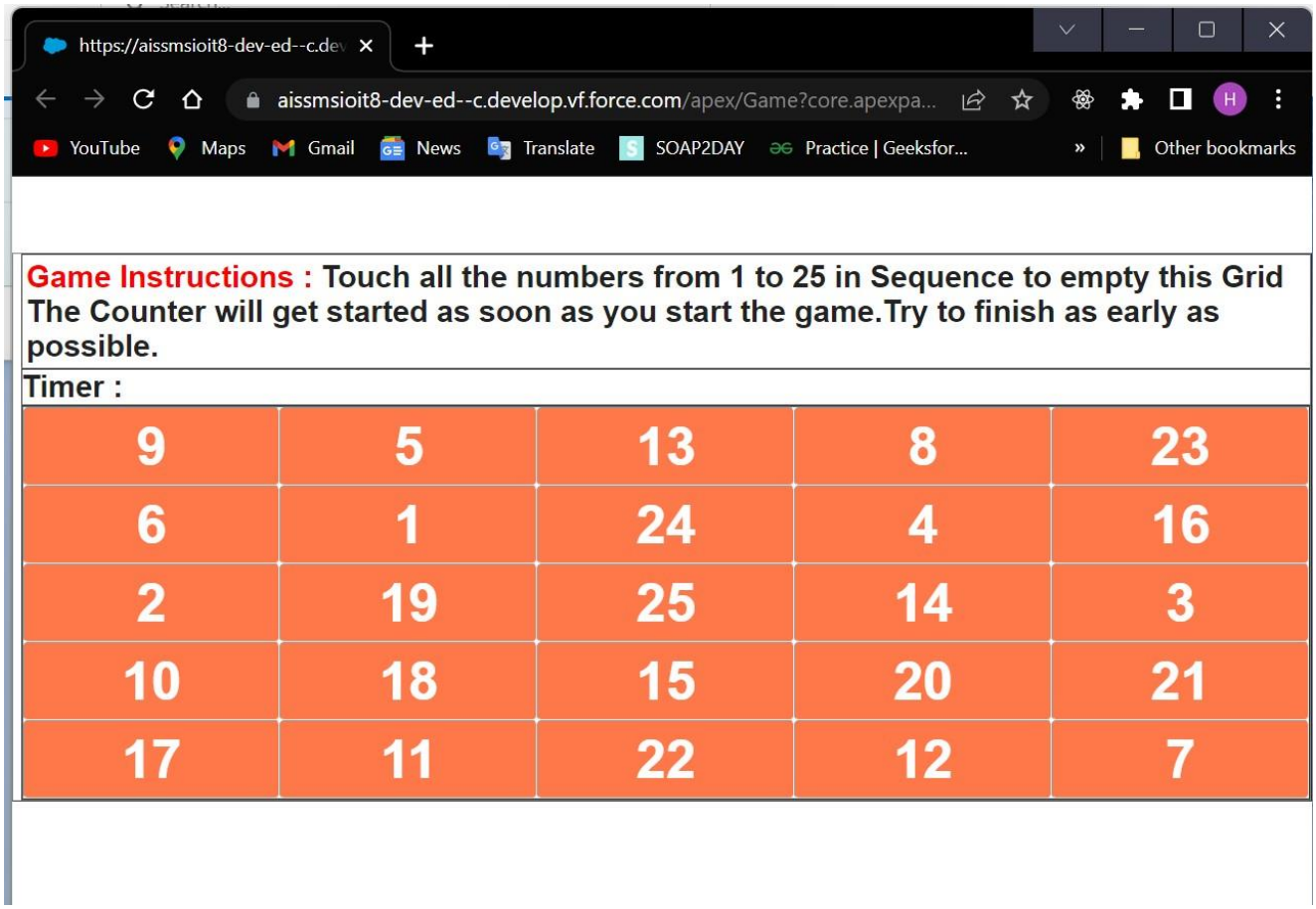
Game.vfp

```
<apex:page controller="Game" sidebar="false" showHeader="false" id="page1">
<apex:form id="form1">
<style>
    body{
    margin-top:50px;
    }
h1 {
    font-size:20px;
}
.grid-cell {
    width: 50px;
    height: 50px;
    border-radius: 3px;
    text-align:center;
    text-color:red;
    background: #FF7849;
    color:white;
    font-weight:bold;
    font-size:35px;
}
</style>
<script>
var startTimer;
function fun(rowIndex,columnIndex) {
    var myTable = document.getElementById('NumberTable');
    var previousValue = document.getElementById('page1:form1:displayCounter').value;
    var currentValue = myTable.rows[rowIndex].cells[columnIndex].innerHTML ;
    if(currentValue == 1) {
        startTime();
    }
    if(currentValue == +previousValue +1) {
        myTable.rows[rowIndex].cells[columnIndex].innerHTML = '';
        var totalClear = document.getElementById('page1:form1:displayCounter1').value;
```

```
        if(totalClear == 25) {
            var sec = document.getElementById("displayTime").innerHTML;
            document.getElementById("displayTime").innerHTML = "Great ..You cleared all
the numbers in "+sec+". Refresh the Browser Url to start new Game";
            stopTime();
        }
        updateCounter();
    }

}
function stopTime() {
    clearInterval(startTimer);
}
function startTime() {
    var sec = 0;
    startTimer = setInterval(
    function () {
        sec = sec + 1;
        document.getElementById("displayTime").innerHTML = sec + " Seconds!!!";
    }, 1000);
}
</script>
<body >
    <center>
<table  border="1" cellpadding="0" cellspacing ="0" id="table1" style="padding-left:5px;">
<tr><td>
<table >
<tr><td >
<h1>

   <b style="color:red; ">Game Instructions : </b>Touch all the numbers from 1 to 25 in
Sequence to empty this Grid
The Counter will get started as soon as you start the game.Try to finish as early as possible.
 </h1>
    </td>
</tr>
</table>
</td></tr>
<tr><td><h1>

    Timer :<b id="displayTime" style="Color:red;"></b></h1></td></tr>
<tr><td>
<table border="1" cellpadding="0" cellspacing = "0" id="NumberTable" width="100%" >
<apex:variable var="rowIndex" value="{!0}"/>
<apex:repeat value="{!numberList}" var="rowNums">
<tr style="border:1px"><apex:variable var="columnIndex" value="{!0}"/>
    <apex:repeat value="{!rowNums}" var="num">
```

```
        <td class="grid-cell" onClick="fun('{!rowIndex}','{!columnIndex}')"> {!num}</td>
        <apex:variable var="columnIndex" value="{!columnIndex+1}"/>
    </apex:repeat><apex:variable var="rowIndex" value="{!rowIndex+1}"/>
</tr>
</apex:repeat>
</table>
</td></tr></table>
        </center>

<apex:inputtext value="{!counter}" id="displayCounter" style="display:none;"/>
<apex:inputtext value="{!totalCleared}" id="displayCounter1" style="display:none;"/>
</body>
<button onclick="window.location.reload()" id="startGame" style="display:none;">Start
New Game</button>
<apex:actionFunction action="{!updateCount}" name="updateCounter"
rerender="displayCounter,displayCounter1">
</apex:actionFunction>
</apex:form>
</apex:page>
```

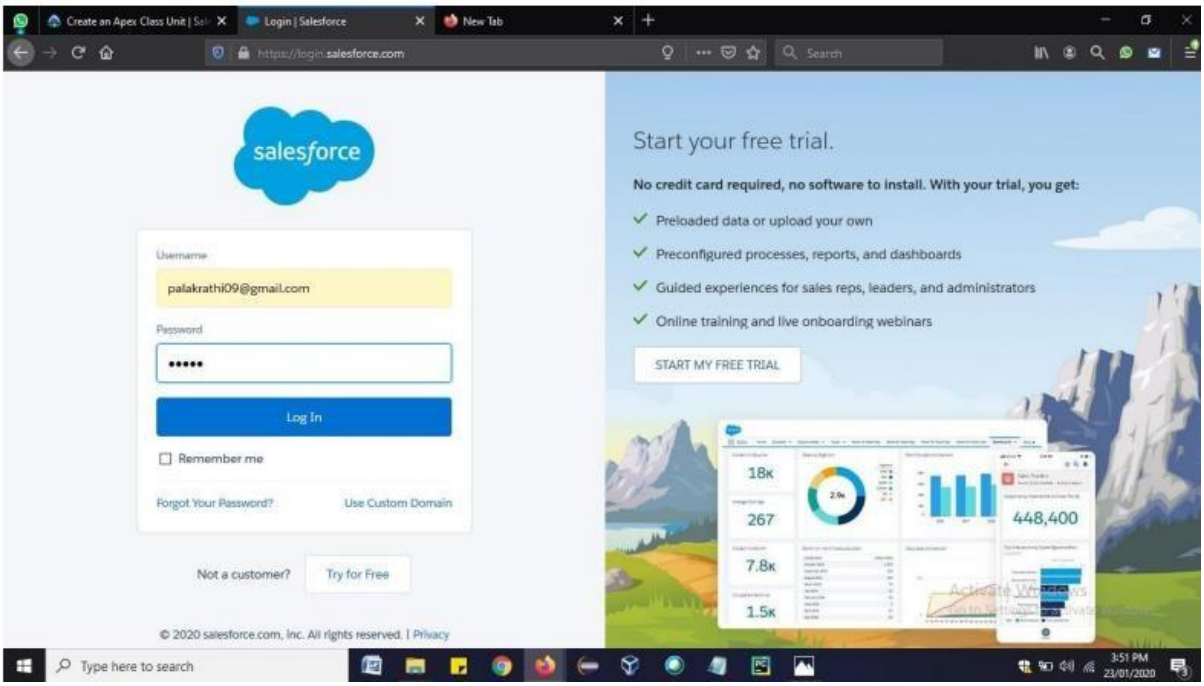
OUTPUT:-


https://aissmsioit8-dev-ed--c.dev
aissmsioit8-dev-ed--c.develop.vf.force.com/apex/Game?core.apexpa...
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Other bookmarks
Game Instructions : Touch all the numbers from 1 to 25 in Sequence to empty this Grid The Counter will get started as soon as you start the game.Try to finish as early as possible.
Timer :
9 5 13 8 23
6 1 24 4 16
2 19 25 14 3
10 18 15 20 21
17 11 22 12 7

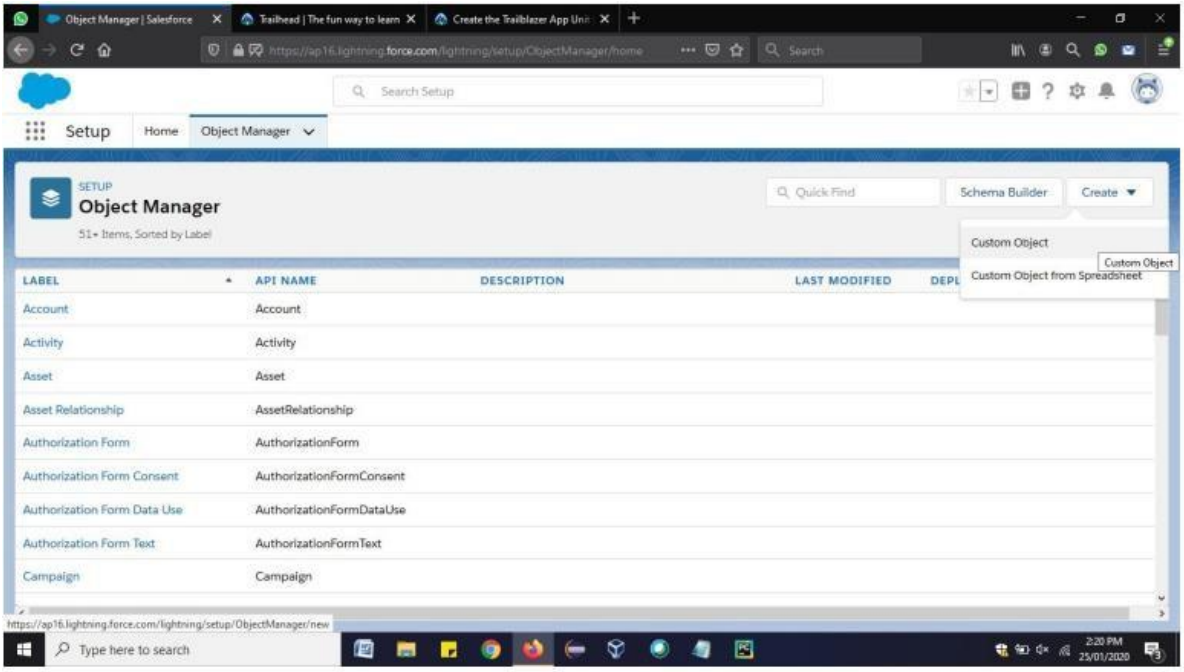

https://aissmsioit8-dev-ed--c.dev
aissmsioit8-dev-ed--c.develop.vf.force.com/apex/Game?core.apexpa...
YouTube
Maps
Gmail
News
Translate
SOAP2DAY
Practice | Geeksfor...
Other bookmarks
Game Instructions : Touch all the numbers from 1 to 25 in Sequence to empty this Grid The Counter will get started as soon as you start the game.Try to finish as early as possible.
Timer :Great ..You cleared all the numbers in 40 Seconds!!!. Refresh the Browser Url to start new Game

Implementation:

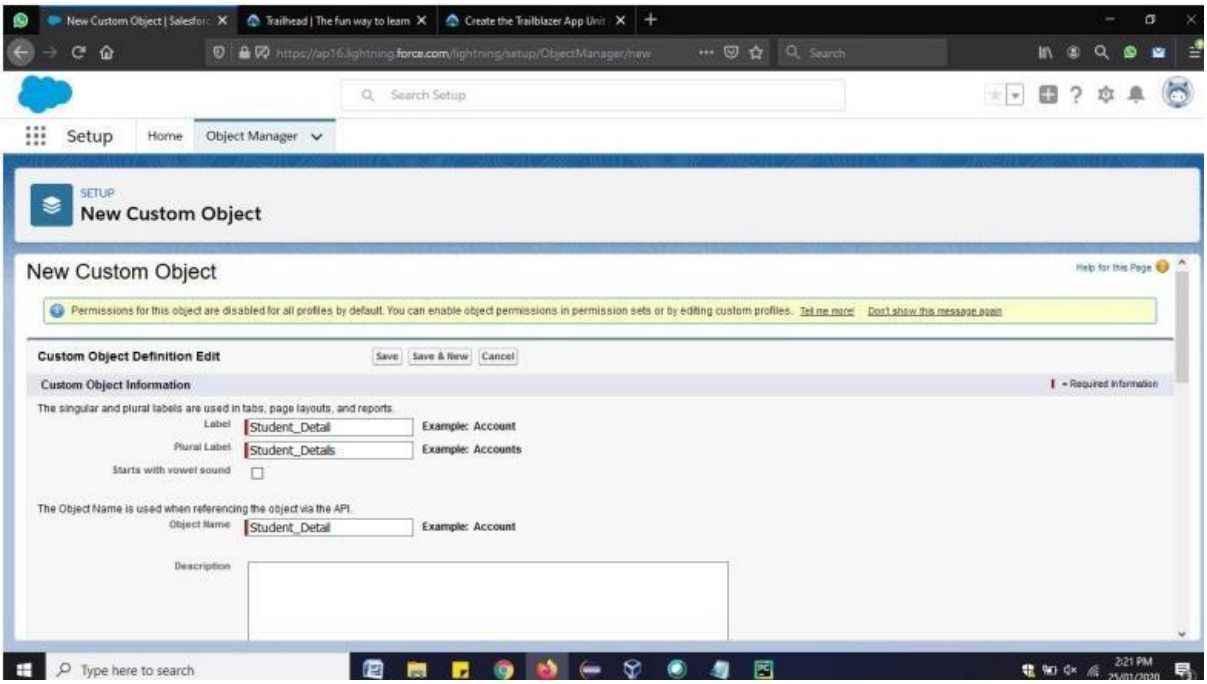
Step 1: Log into Salesforce Developer account.

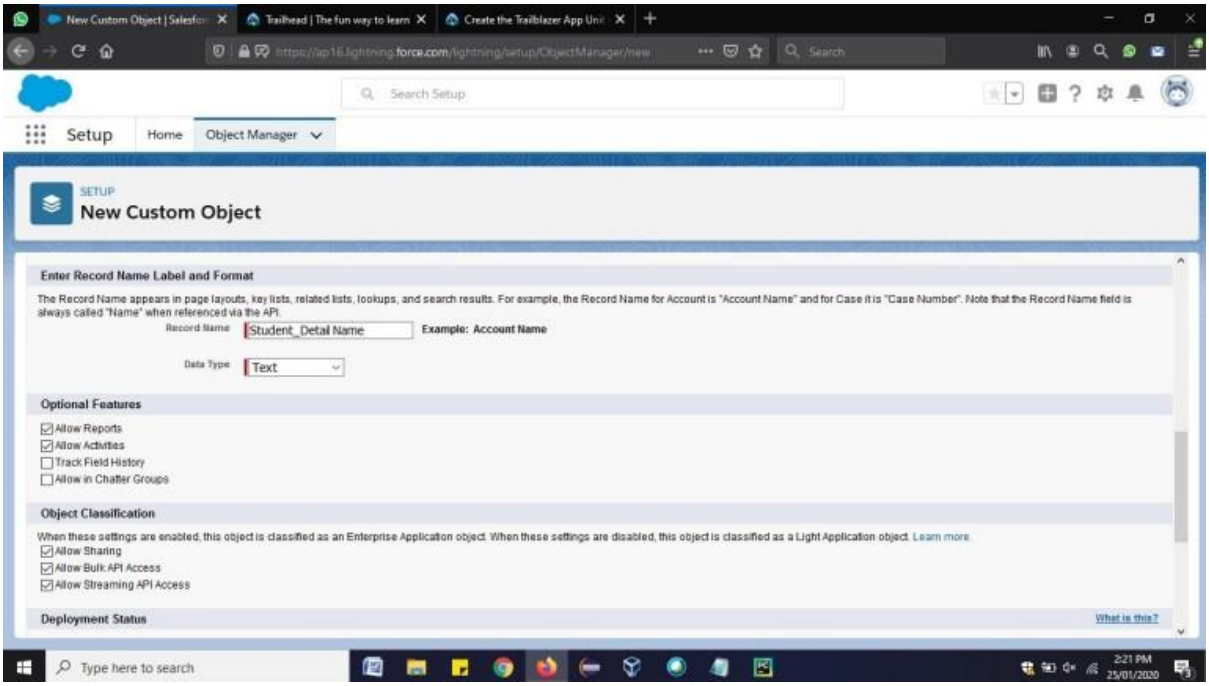


Step 2: Open Salesforce Lightning platform and click on Object Manager => Create => Custom Object.

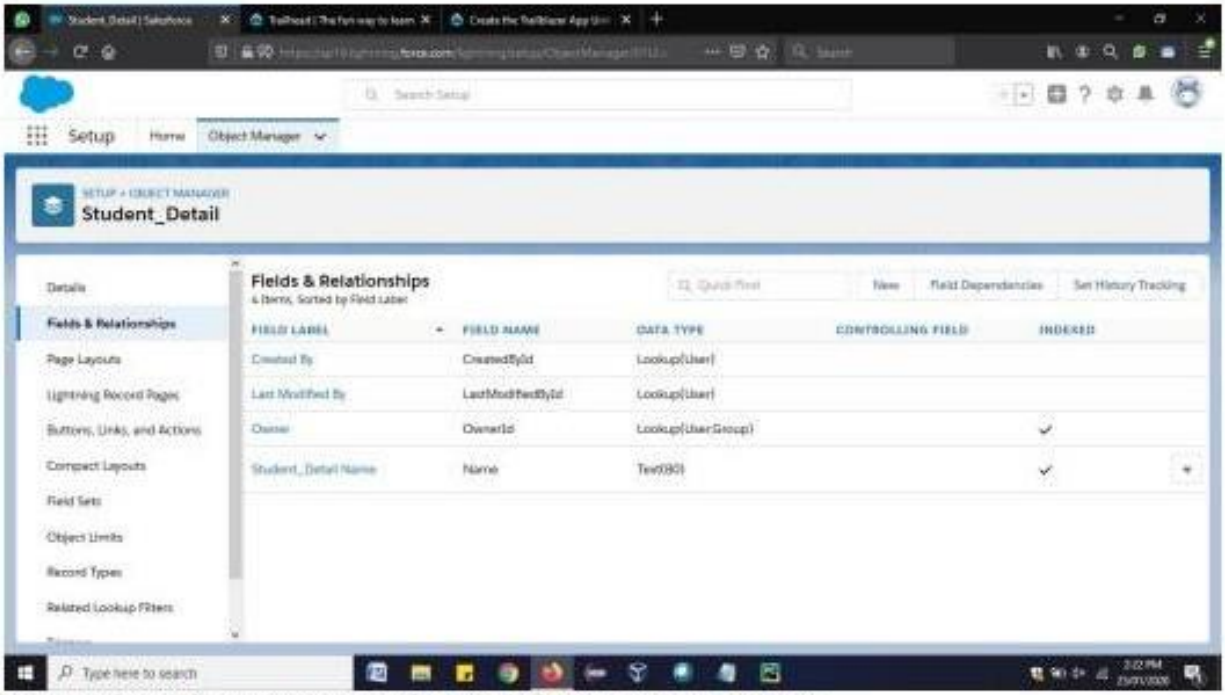


Step 3: Fill in the required fields and under Optional Features, select Allow Reports and Allow Activities. Click Save.

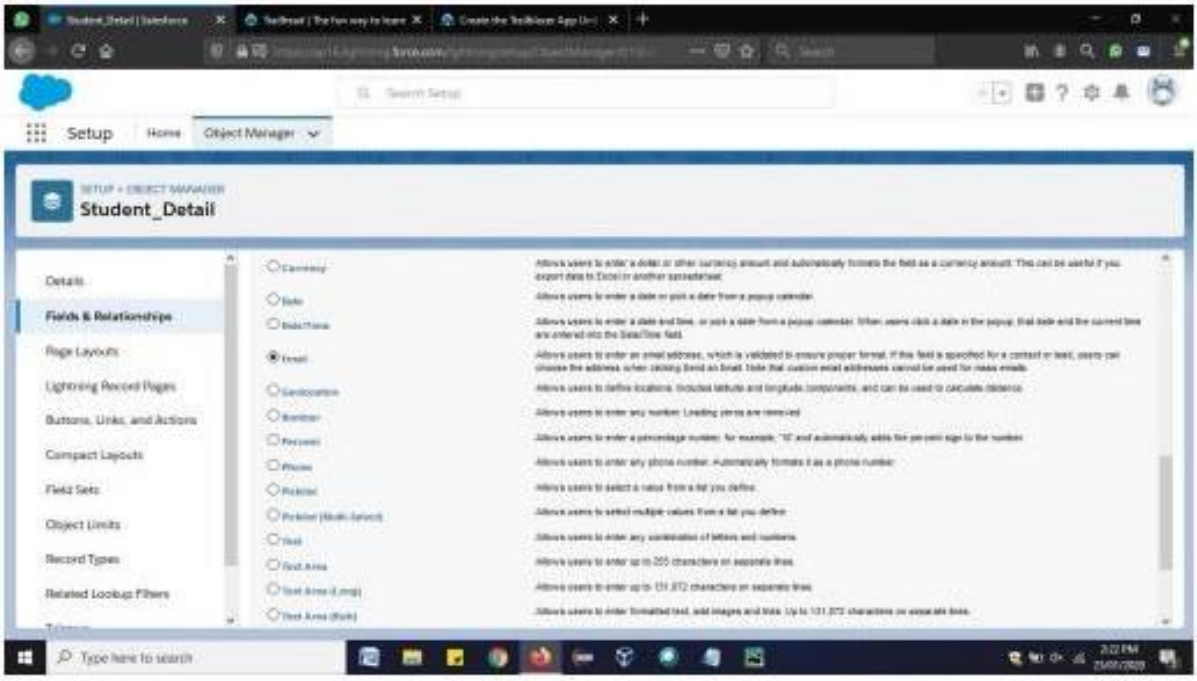




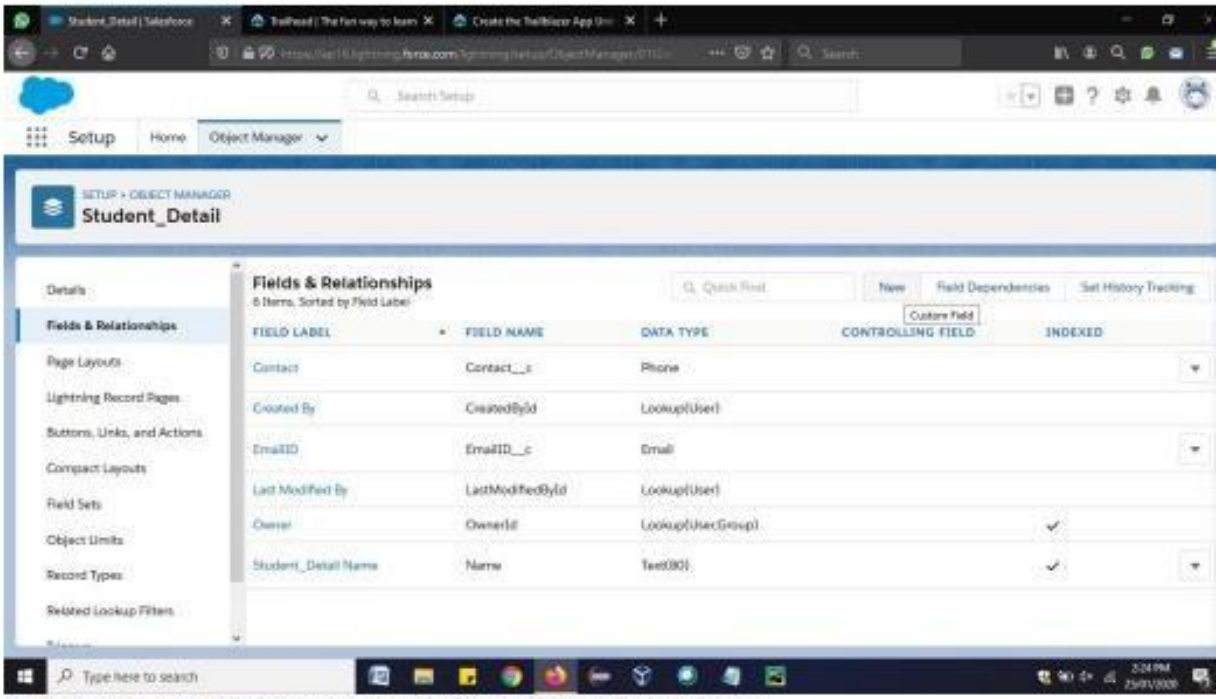
Step 4: Now, Click on Fields & Relations => New.



Step 5: Then select option “Email” and click Next-> Next -> Save.

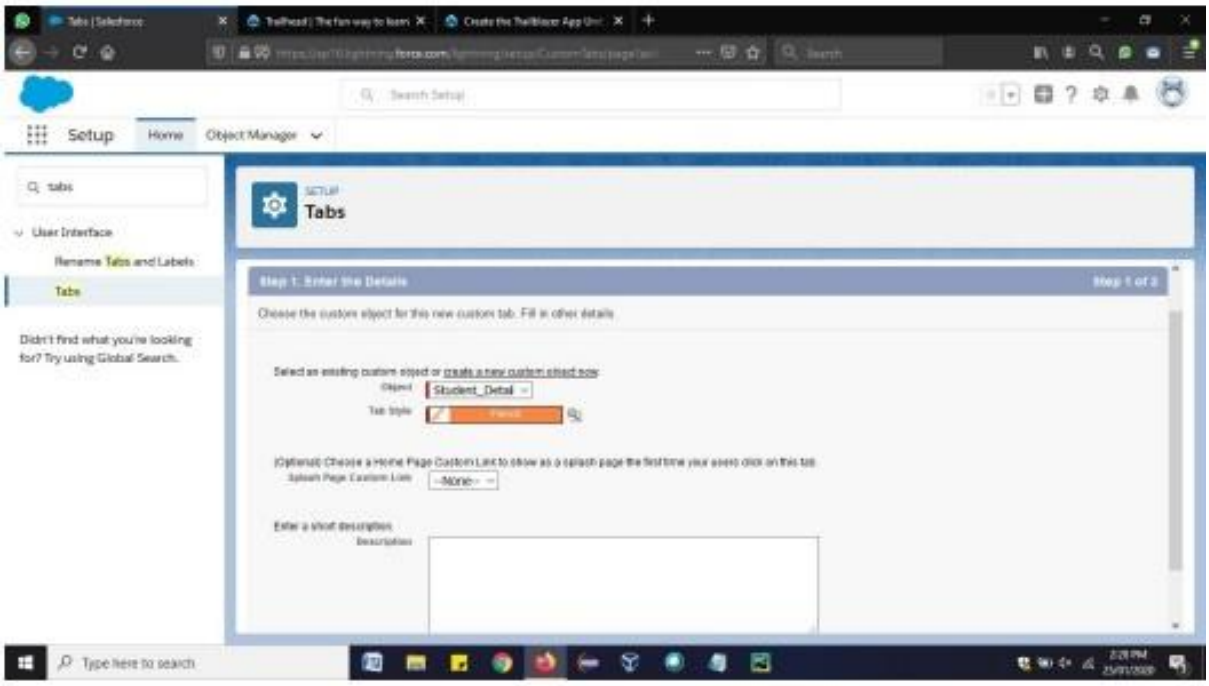


Step 6: Similarly. Repeat steps 4 and 5 to add more fields like Phone, Date of Birth. This is how the custom object will have the various fields.

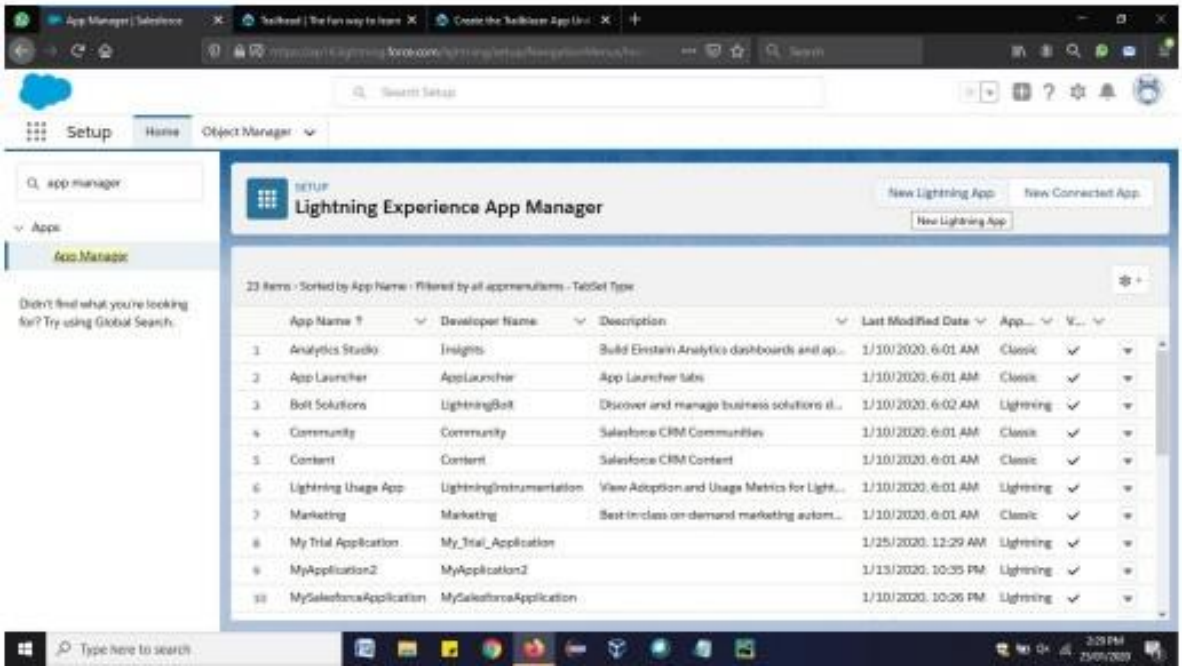


Step 7: Now go to Home => search for “Tabs”. Click on New.

Step 8: Enter the Object name and select any icon for tab style. Leave all defaults as it is. Click **Next, Next**, and **Save**.



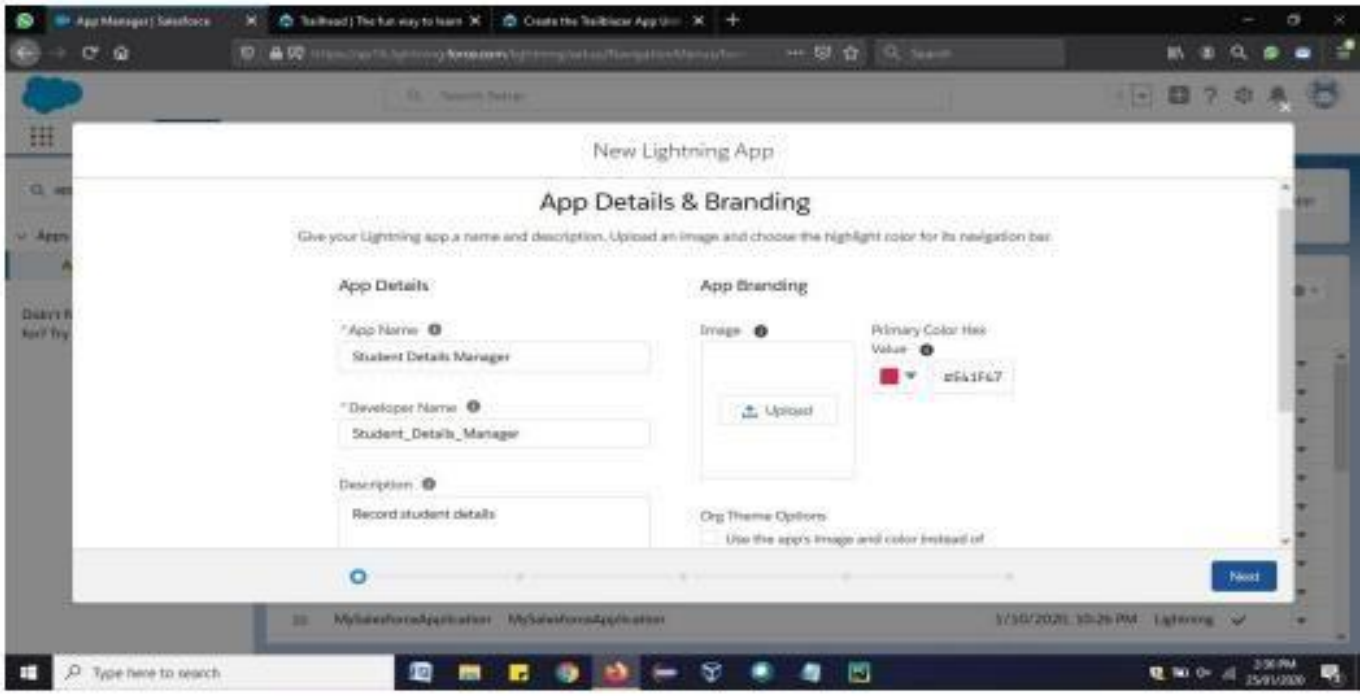
Step 9: In Setup, click **Home**. Enter "App Manager" in Quick Find and select **App Manager**. Click **New Lightning App**.



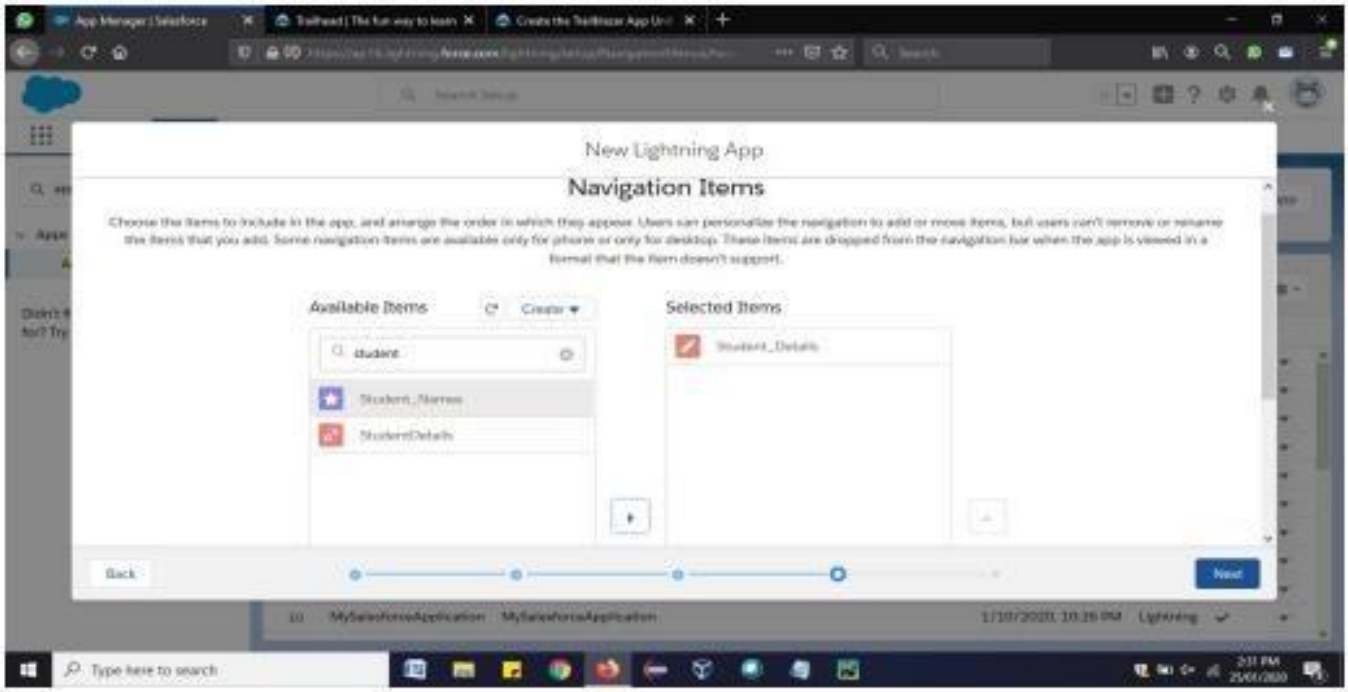
Step 10: Define the new Lightning app as follows:

App Name: Student Details Manager

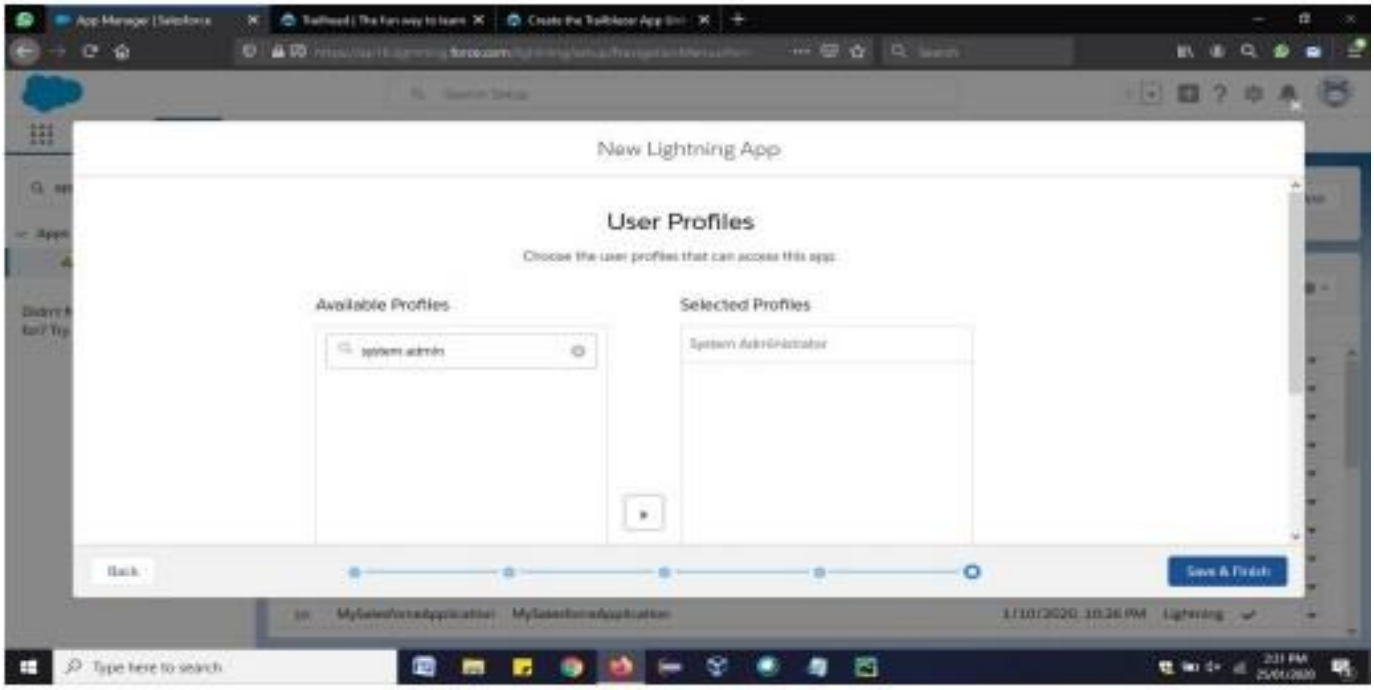
Developer Name: Student_Details_Manager. Click **Next**.



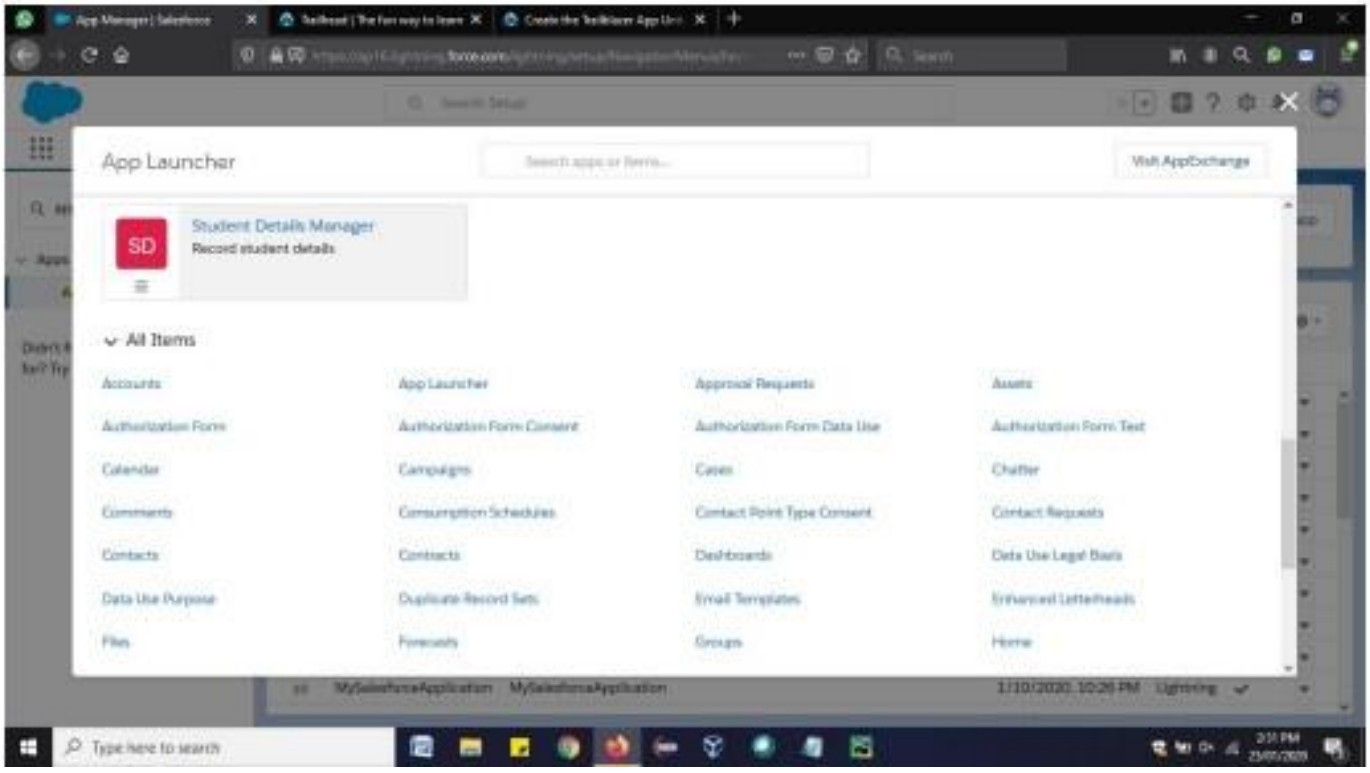
Step 11: On the App Options screen, leave the defaults as is and click **Next**. On the Utility Items screen, leave the defaults as is and click **Next**. On the Navigation Items screen, select **Student_Detail** and move them to the Selected Items box. Then click **Next**.

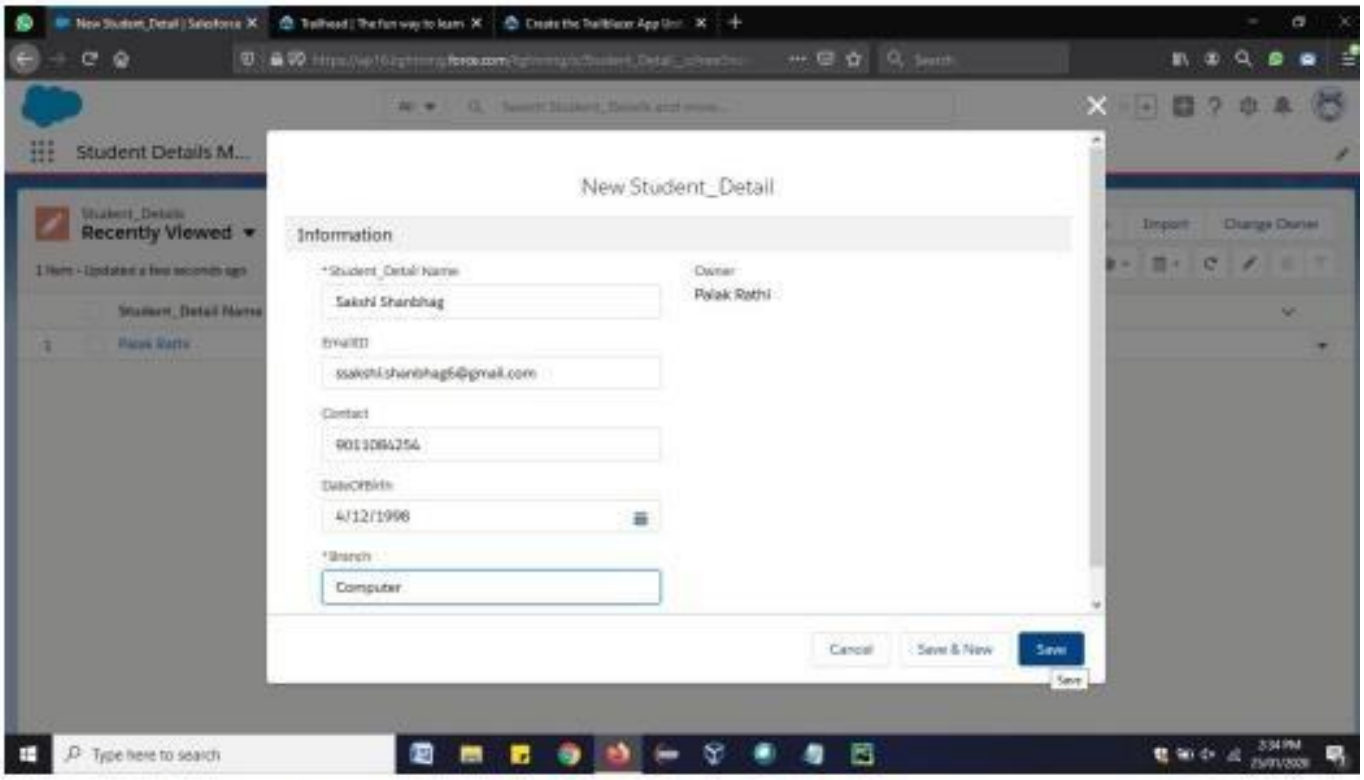


Step 12: On the Assign to User Profiles screen, select **System Administrator** and move it to Selected Profiles. Then click **Save & Finish**.

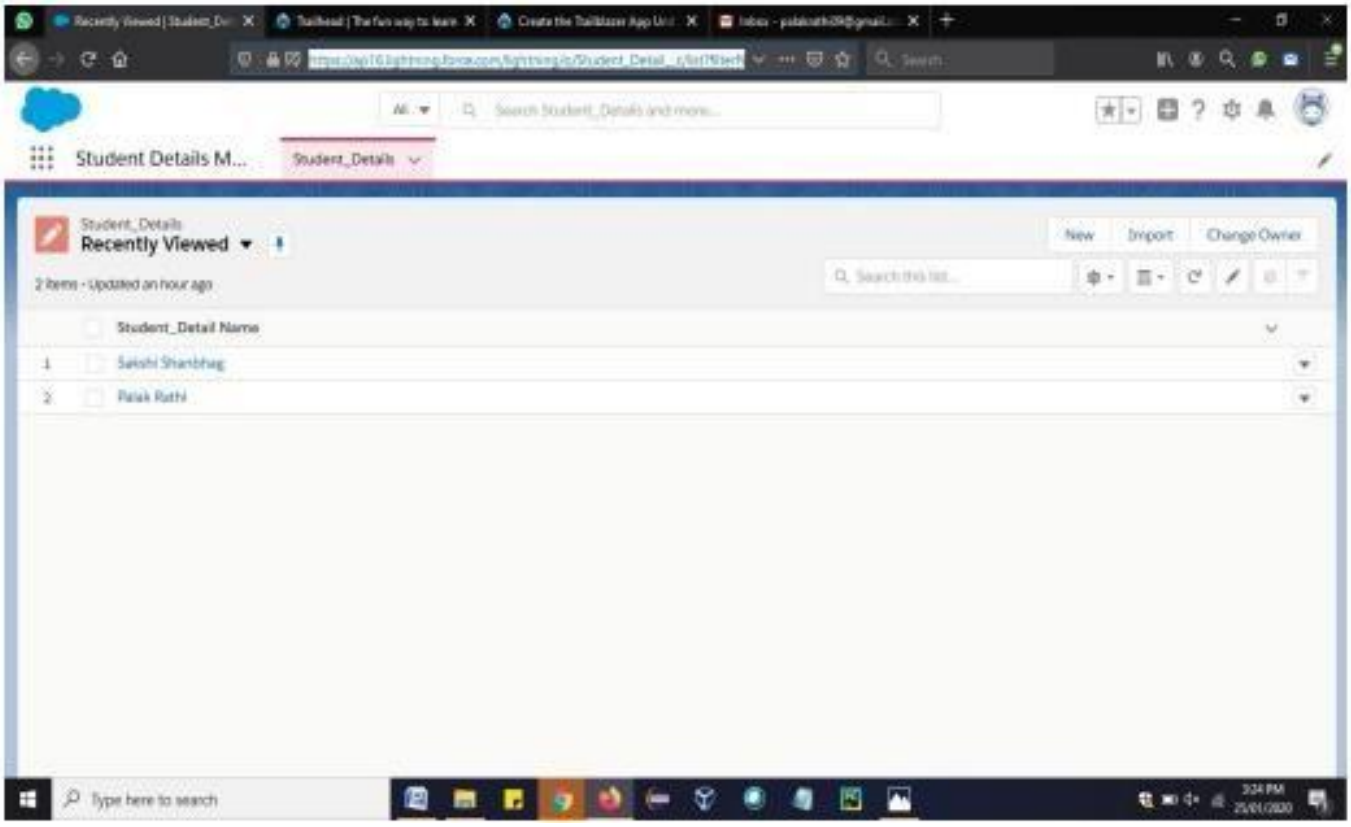


Step 13: Click on App launcher and Open the custom application created.

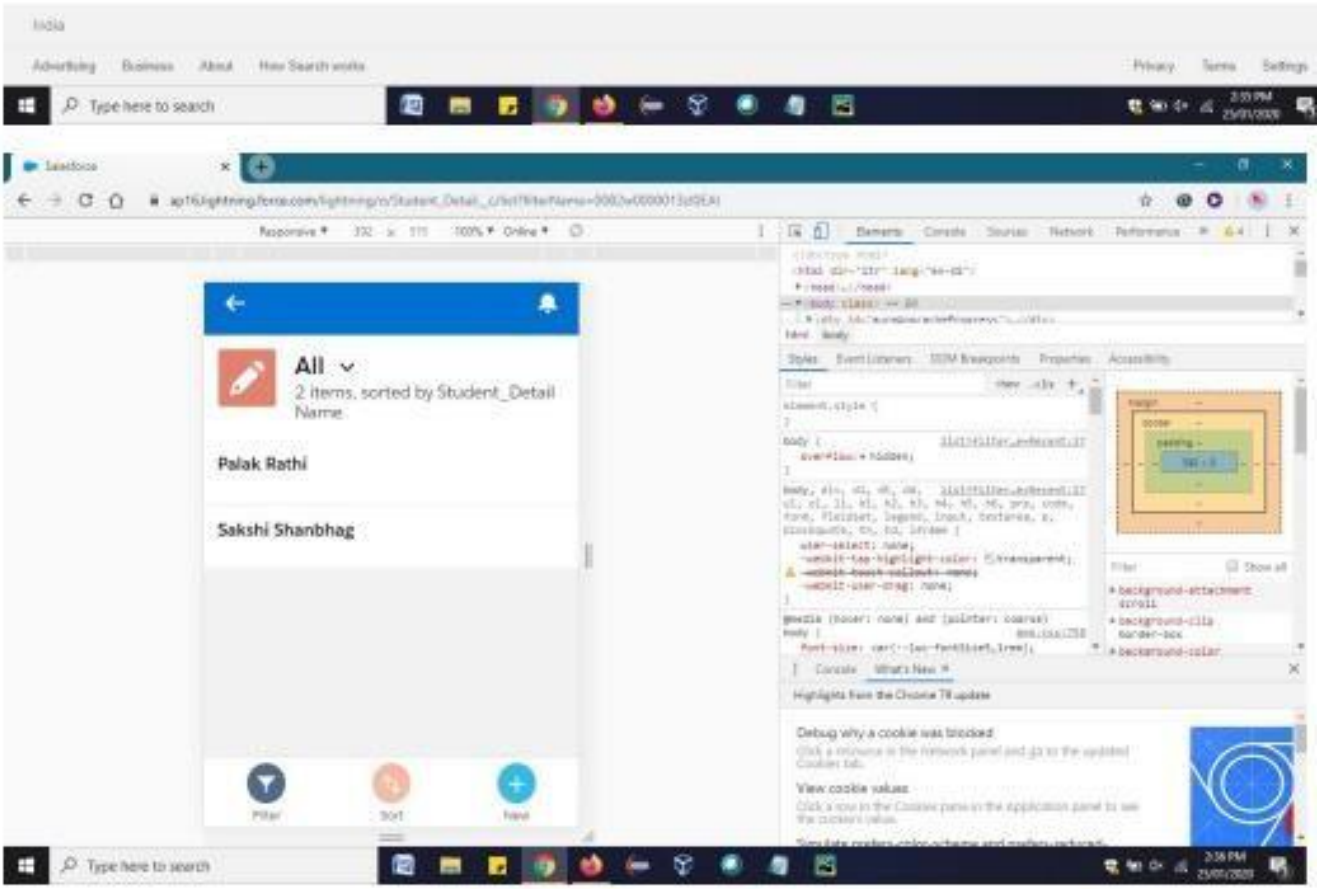


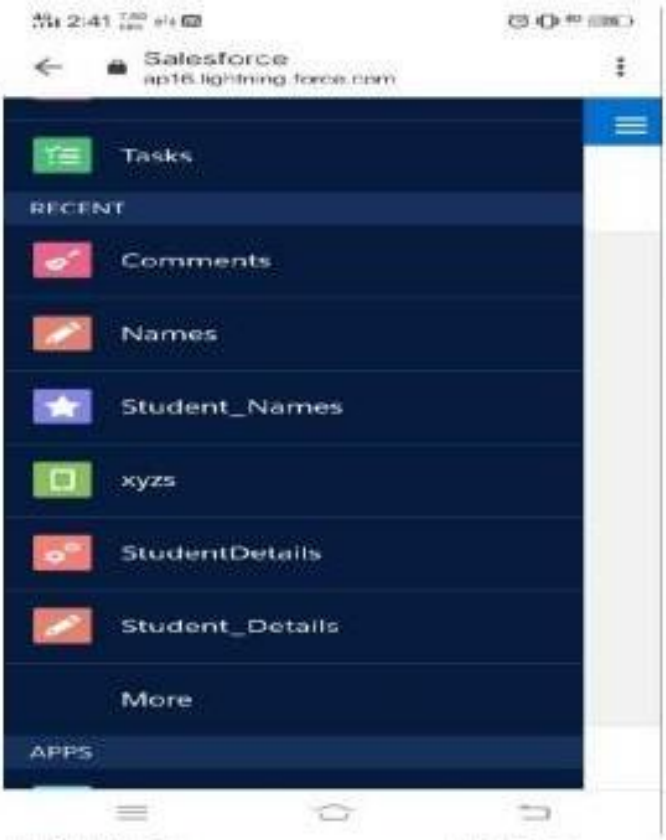


Step 14: Click on Student_Details => New => fill the specified details and copy the URL.



Step 15: Open Google Chrome new Tab => More Tools => Developer Tools and then paste the URL of the application, copied in the previous step.




2:41
Salesforce
ap16.lightning.force.com
Tasks
RECENT
Comments
Names
Student_Names
xyzs
StudentDetails
Student_Details
More
APPS


2:41
Salesforce
ap16.lightning.force.com
Cancel
New Student_Detail
Save
Information
* Student_Detail Name
EmailID
Contact
DateOfBirth
* Branch
Owner
Palak Rathi


2:41
Salesforce
ap16.lightning.force.com
Palak Rathi
DETAILS
RELATED
Student_Detail Name
Palak Rathi
EmailID
palakrathi09@gmail.com
Contact
(869) 818-4307
DateOfBirth
5/9/1998
Branch
Computer
Owner
New Event
New Task
New Contact
Log a Call
Show More