K.V.T.POLYTECHNIC[AIDED]

C.V.V. CAMPUS, CHICKBALLAPUR

"IT SKILLS"

LABORATORY MANUAL

SUBJECT CODE: 20CS01P

2020-21

Prepared By:

SHWETHA S K, B.E., M.Tech,

Lecturer,

Department of CSE

SUB : IT SKILLS   **SUB CODE : 20CS01P**

PRACTICAL SKILL EXERCISES

1. Write an algorithm, flowchart, C program for Addition of two numbers.
2. Write an algorithm, flowchart, C program for Subtraction of two numbers.
3. Write an algorithm, flowchart, C program to find the largest of 3 numbers.
4.   Write an algorithm, flowchart, C program to find the smallest of 3 numbers.
5. Write an algorithm, flowchart, C program Calculate and print sum of 'N' numbers.
6. Design and create "Fruit clicker" game using MIT-scratch/Code.org.
7. Design and create "Star chasing" game using MIT-scratch/Code.org.
8. Design and create "TomJerry_Talk" android application (MIT App Inventor).
9. Design and create "DigitalDoodle" android application (MIT App Inventor).
10. Design and create webpage for displaying your poem (Title,header, paragraph, formatting tags).
11. Design and create webpage for your wish list (What you want to do). Also list challenges and opportunities along with images to present your dreams (List ordered and unordered, Image, table)
12. Design and create webpage using HTML and CSS about an awesome animal (Use necessary CSS tags)
13. Design and create web page for a travel book/recipe book with more than 3 pages, table to list places/recipes (iframe, hyperlink)
14. Design and create webpage with JavaScript to display current system date and time.
15. Design and create web page with JavaScript to design a simple calculator to perform the following operations: sum, product ,difference and quotient
16. Design and create a personal webpage with dashboard
17. Design and create web page about advantages of business process automation with respect to your branch of engineering
18. Create user account and demonstrate use of Google drive, Google docs, Google Co-lab (Usage of Jupyter Notebook)
19. Installation of Antivirus software

1. Algorithm, flowchart and C program to find sum of two numbers

Algorithm to Find Sum of Two Numbers

Step 1	Start
Step 2	Read a, b
Step 3	Sum = a + b
Step 4	Print Sum
Step 5	Stop

Flowchart to add two numbers

Start

Read a, b

Sum = a + b

Print Sum

Stop
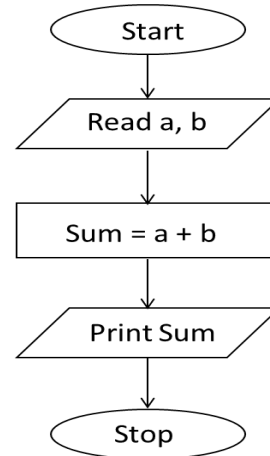
C Program to Add Two numbers

```c
#include <stdio.h>
void main()
{
   int a, b, sum;

   printf("Enter two numbers: ");
   scanf("%d %d", &a,&b);

        sum = a + b;

   printf("Sum= %d", sum);
}
```
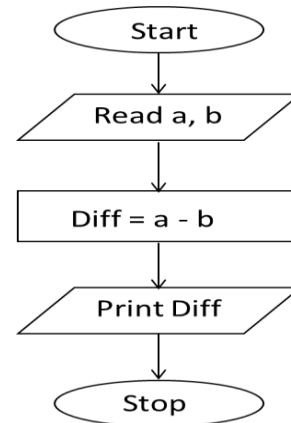
Output
Enter two numbers: 12   11
Sum = 23

2. Algorithm, flowchart and C program to find difference of two numbers

Algorithm to Find Difference of Two Numbers

Flowchart to subtract two numbers

Step 1	Start
Step 2	Read a, b
Step 3	Diff = a - b
Step 4	Print Diff
Step 5	Stop

Program to subtract Two numbers

```c
#include <stdio.h>
void main()
{
   int a, b, diff;

printf("Enter two numbers: ");
scanf("%d %d", &a,&b);

diff = a - b;

printf("Difference= %d", diff);
 }
```
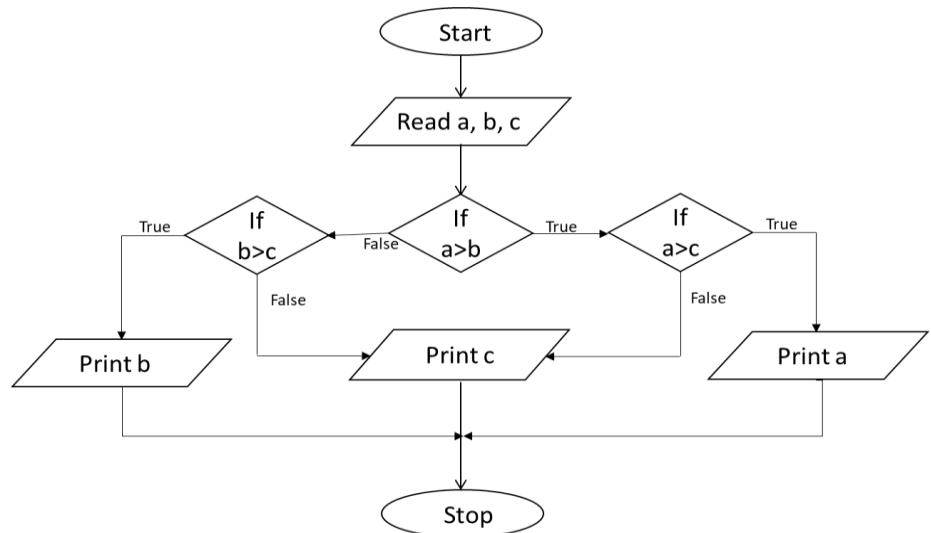
Output
Enter two integers: 30 20
Difference = 10

3. Algorithm, flowchart and C program to find largest of three numbers

Algorithm

Step 1   Start
Step 2   Read a, b, c
Step 3   If **a >b** and **a>c**
          Print a largest
          Else if b>a and b>c
          Print b largest
          Else
          Print c largest
Step 4   Stop

Flowchart

C program to find largest of three numbers

```c
#include <stdio.h>
void main()
{
inta, b, c;
printf("Enter three numbers: ");
scanf("%d %d %d", &a, &b, &c);

    if (a>= b && a>= c)
            printf("%d is the largest number.", a);

    else if (b>= a && b>= c)
            printf("%d is the largest number.", b);
    else
            printf("%d is the largest number.", c);
}
```
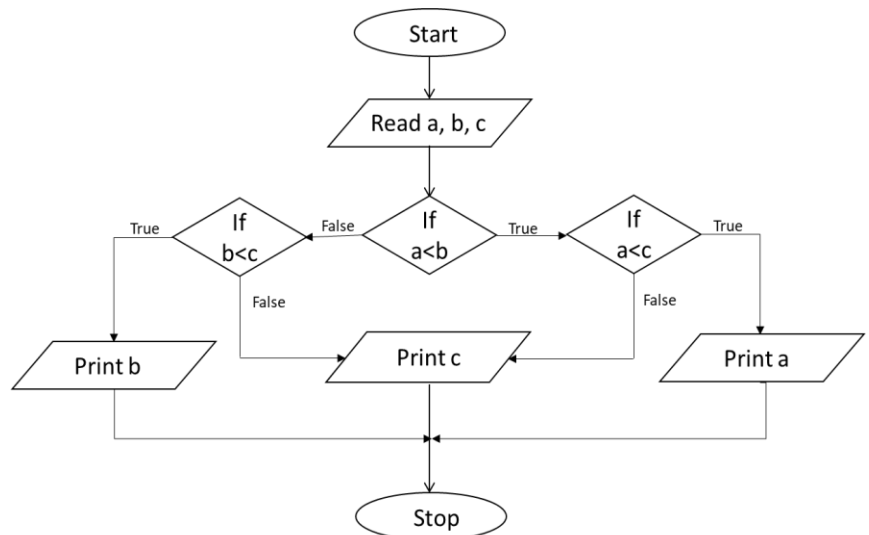
Output: Enter three numbers: 10 20 30
          c is the largest number

4. Algorithm, flowchart and C program to find smallest of three numbers.

Algorithm	Flowchart

Step 1   Start
Step 2   Read a, b, c
Step 3   If a < b and a< c
                Print a smallest
            Else if b < a and b < c
                Print b smallest
            Else
                Print c smallest
Step 4   Stop

C program to find smallest of three numbers

```c
#include <stdio.h>
void main()
{
inta, b, c;
printf("Enter three numbers: ");
scanf("%d %d %d", &a, &b, &c);

    if (a<= b && a<= c)
            printf("%d is the largest number.", a);

    else if (b<= a && b<= c)
            printf("%d is the largest number.", b);
    else
      printf("%d is the largest number.", c);
}
```
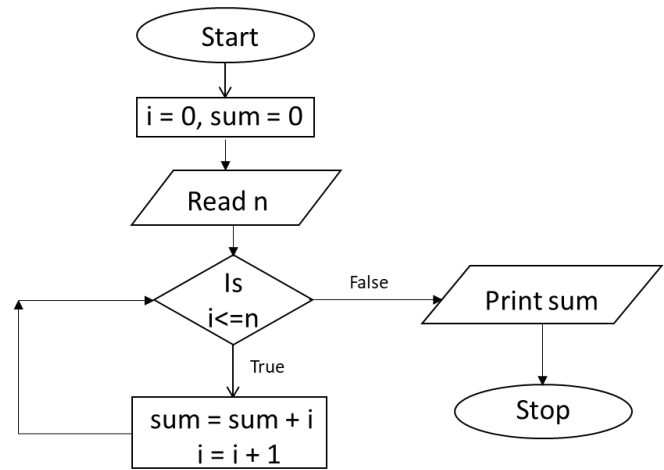
Output: Enter three numbers: 10 20 30
            a is the smallest number

5. Algorithm, flowchart and C program to calculate and print sum of 'N' natural numbers.

Algorithm   **Flowchart**

Step 1   Start
Step 2   Initialize i = 0, sum = 0
Step 3   Read n
Step 4   Is i <= n true goto step 5
             False
             sum = sum + i
             i = i + 1
Step 5   Print sum
Step 6   Stop

C program to calculate and print sum of 'N' numbers

```c
#include <stdio.h>
void main()
{
   int n, i = 0, sum = 0;
   printf("Enter a positive integer: ");
   scanf("%d", &n);

        while (i<= n)
         {
           sum = sum +i;
           i = i + 1
         }
   printf("Sum = %d", sum);
}
```
Output:

Enter a positive integer: 5
Sum = 15

6. **Design a simple fruit clicker game using mit scratch**

- Open scratch software and go to file new.
- Delete the already existing sprite.
- Select a backdrop.

i. Block of code to change score upon clicking sprite
1. Choose a sprite->select Apple.
2. Click Events->drag "when this sprite clicked" and drop it to the Scripts area of the screen.
3. Click sounds->drag "start sound pop" block across and lock it underneath the earlier command.
4. Click variables -> Make a variable -> type as "Score" ->click OK
5. Go to variables-> drag "change my variable to 1"block across and lock it underneath the earlier command. Under "my variable" select score.

ii. Block of code to move sprite to random position
1. Click Motions-> drag "go to random position" and drop it to the Scripts area of the screen.
2. Click Controls-> drag "forever" block across and interlock it with the earlier command.
3. Click Controls-> drag "wait for 1 sec" block across and lock it underneath the earlier command.
4. Click Events-> drag "when flag clicked" block across and place above it with the earlier command.

iii. Block of code to set score to 0 at the start of the game
1. Click Events-> drag "when flag clicked" and drop it to the Scripts area of the screen.
2. Click variables-> drag "set my variable to 0" block across and lock it underneath the earlier command, and select score under "my variable".
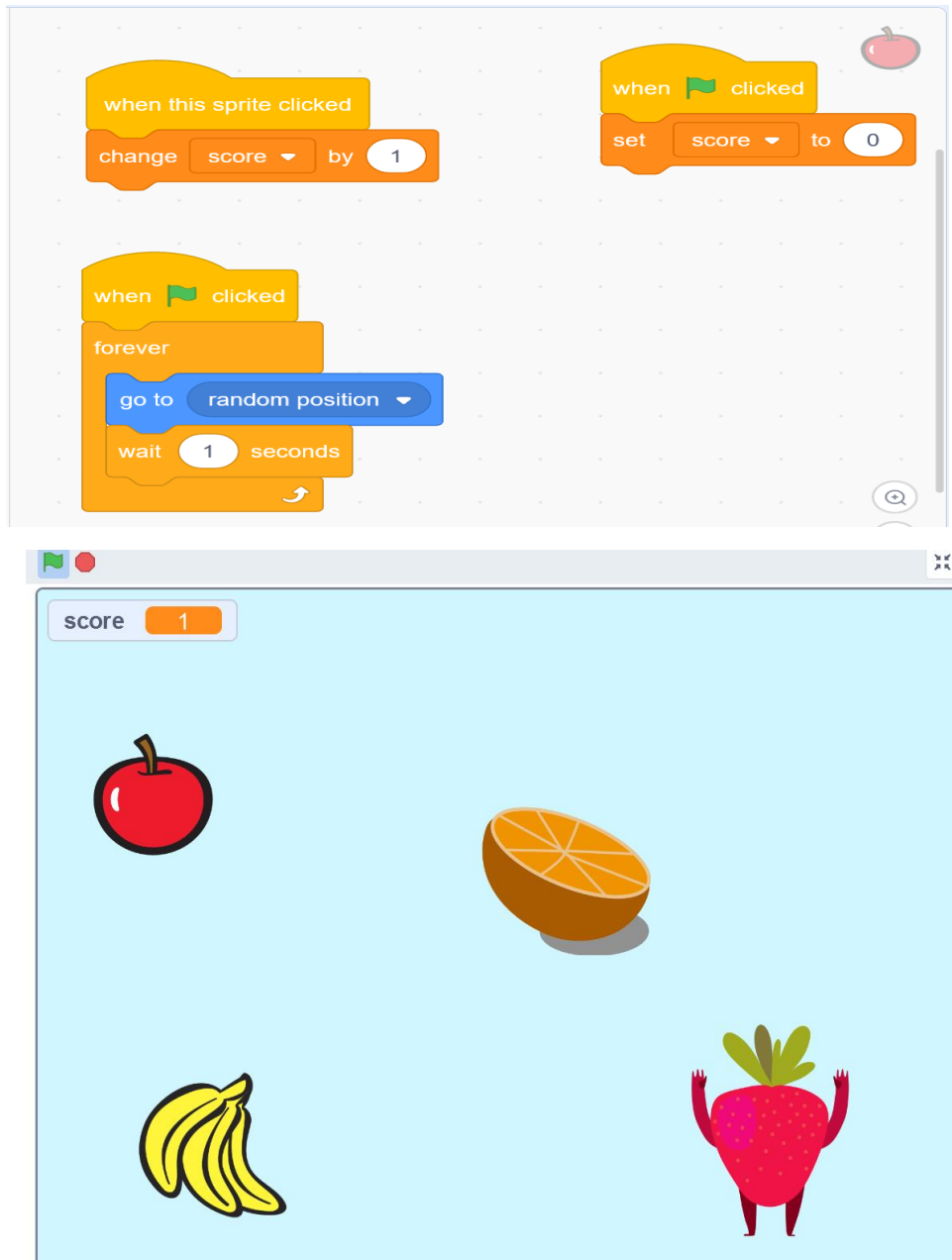
Repeat the above three blocks of code for other sprites: orange, bananas, strawberry(no need to create variable again for other spirtes).

Run your program

- Click the **green flag** near the top right of the Scratch screen to run your program.

7. Design a simple Star chasing game using mit scratch.

- Open scratch software and go to file new.
- Delete the already existing sprite.
- Select a backdrop.

Block of code to move the crab sprite
1. Choose a sprite->select crab.
2. Click Events-> drag "when space key pressed" and drop it to the Scripts area of the screen. Under dropdown select "right key".
3. Click Motions->drag "change x by 10" block across and lock it underneath the earlier command.
4. Right click on the above block and click duplicate, Under dropdown select "left key" and Change value of x by -10.
5. Click Events-> drag "when space key pressed" and drop it to the Scripts area of the screen. Under dropdown select "up key".
6. Click Motions->drag "change y by 10" block across and lock it underneath the earlier command.
7. Right click on the above block and click duplicate. Change value of y by -10.

Block of code to move star sprite
1. Choose a sprite->select star.
2. Click Motions-> drag "glide 1 secs to random position" and drop it to the Scripts area of the screen.
3. Click Controls-> drag "forever" block across and interlock it with the earlier command.
4. Click Events-> drag "when flag clicked" block across and place above it with the earlier command.

Block of code to change score upon touching star sprite
1. Click on Crab sprite.
2. Click Controls-> drag "if _____ then" and drop it to the Scripts area of the screen.
3. Click Sensing-> drag "touching mouse pointer?" block and drop in the if command. Select "star" from dropdown.
4. Click variables -> Make a variable -> type as "Score" ->click OK
5. Go to variables-> drag "change my variable to 1" block across and lock it underneath the earlier command. Under "my variable" select score.

iii. Block of code to set score to 0 at the start of the game
1. Click Events-> drag "when flag clicked" and drop it to the Scripts area of the screen.
2. Click variables-> drag "set my variable to 0" block across and lock it underneath the earlier command, and select score under "my variable".

Run your program

- Click the **green flag** near the top right of the Scratch screen to run your program.
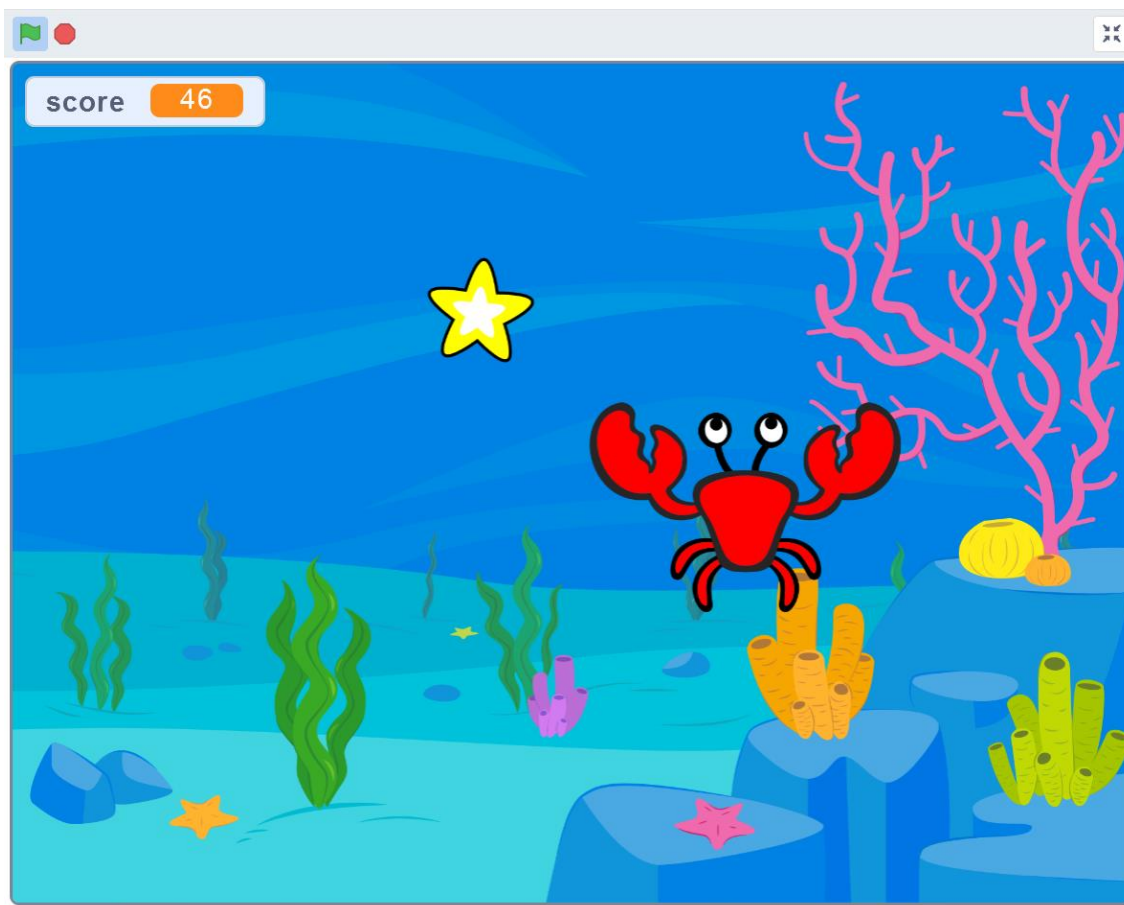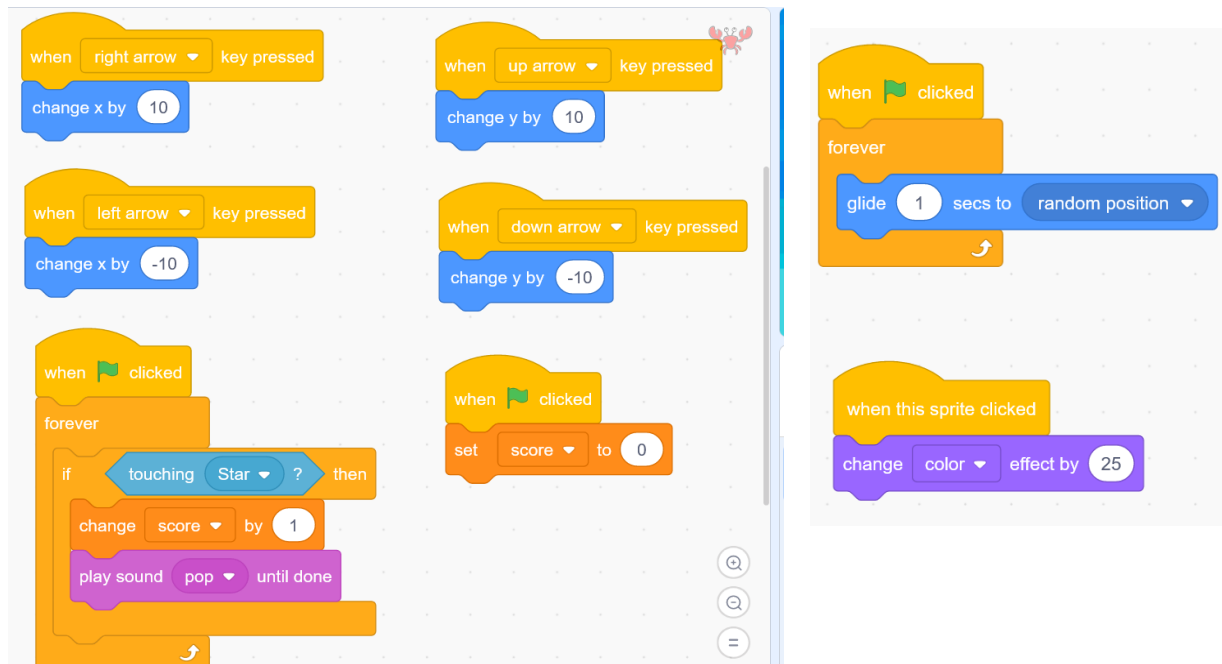
8. Design and create "TomJerryTalk" android application (MIT App Inventor)

1. Go to App Inventor on the web and click on create.
2. Login to App Inventor with a gmail (or google) user name and password.
3. Name the project "TomJerryTalk" (no spaces!).
4. Click User Interface-> drag image component and drop it to the viewer. And repeat the same for image2.
5. Upload the image of tom and jerry under media.
6. Resize the image size set height and width to 50% under properties.
7. For image1, under properties->Pictures->select Tom.jpg->OK and also check clickable.
8. For image2, under properties->Pictures->select Jerry.jpg->OK and also check clickable.
9. Click Media->drag TextToSpeech component and drop it to the viewer.
10. Click on Blocks.
11. Click on the Image1 drawer. Click and hold the *when Image1.Click do* block. Drag it over to theworkspace and drop it there.
12. Click on the TextToSpeech drawer. Click and hold the *call TextToSpeech1.Speak* block. Drag it overto the workspace and drop it there.
13. Click onthe Text drawer, drag out *A text string* block and plug it into the socket labelled "message". Type the text "Hello Tom".
14. Repeat steps 11 to 13 for image2 and replace text to "Hello Jerry".
15. On the Connect menu, choose "AI Companion". You can connect by:1 - Scanning the QR code by clicking "Scan QR code". Or Type the code into the text window and click Connect with code".
16. Run the app.

Output
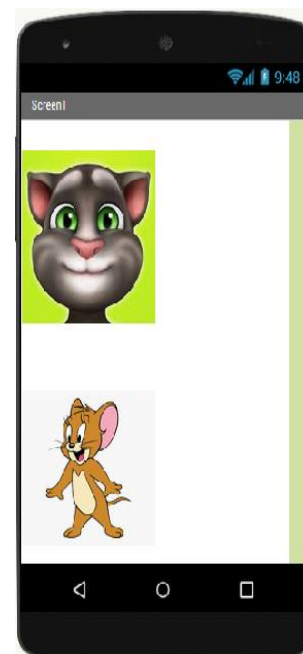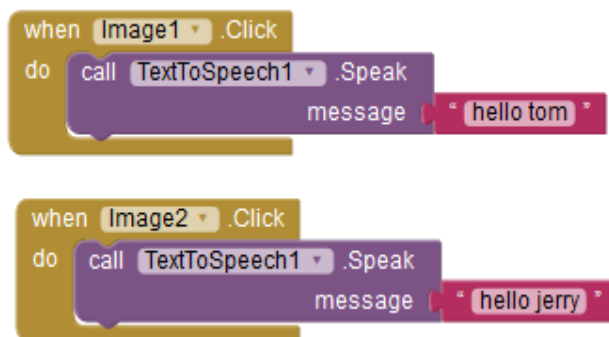
8. Design and create "DigitalDoodle: Drawing" android application (MIT App Inventor)

1. Projects-> start new project and Name the Project as DigitalDoodle.
2. Under properties->uncheck the scrollable box.
3. Under Drawing and Animation-> drag "Canvas" component and drop it to the viewer.
4. In the Properties Pane, set the Height property to "Fill Parent". Do the same with the Widthproperty.
5. Go to blocks.
6. In the Canvas1 drawer, pull out thewhen Canvas1.Draggedevent.
7. In the Canvas1 drawer, pull out thewhen Canvas1.DrawLine method block.
8. Mouse over theparameters of the Canvas1. Dragged block to pull out the get blocks that you need. Set x1 to PrevX, y1 to PrevY, x2 to CurrentX and Y2 to CurrentY.
9. Go to design, add a button and rename it as "Clear".
10. Go to blocks, in the Buttton1 drawer, pull out the "when Button1.Click" event.
11. In the Canvas1 drawer, pull out thewhen Canvas1.Clear method block.
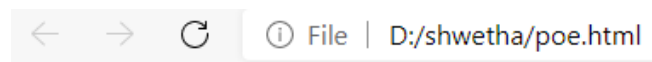12. Run the project.

Output:
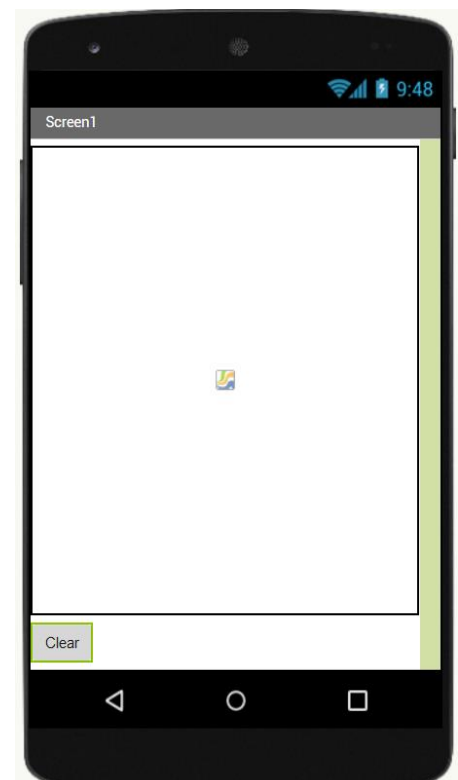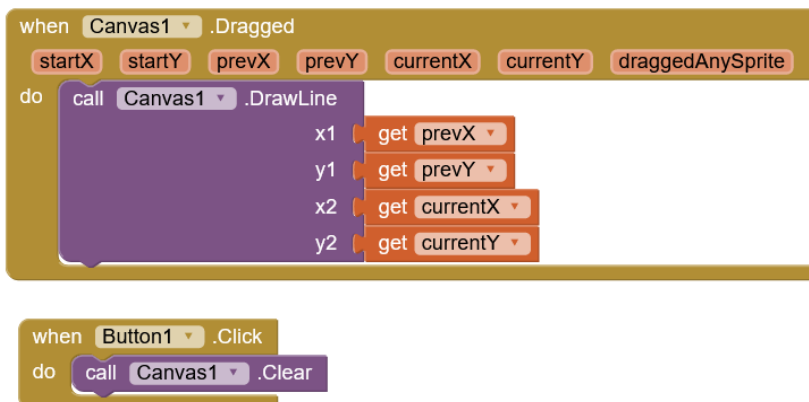
9. **Design and create webpage for displaying your poem (Title, header, paragraph, formatting tags) [save as poem.html]**

```html
<html>
<body>
<p><h1>Good Morning</h1></p>
<pre>
 <b>Good morning, sky;</b>
 Good morning, sun;
 Good morning, little winds that runs!

</pre>
<pre>
 <i>Good morning, birds;</i>
 <small>Good morning, trees;</small>
 And creeping grass, and brownie bees!

</pre>
<pre>
 <strong>How did you find out it was day?</strong>
 <mark> Who told you night had gone away?</mark>
 I'm wide awake;
I'm up now, too.
I'll be right out to play with you!
</pre>
</body>
</html>
```

Output:

10. **Design and create webpage for your wish list (What you want to do). Also list challenges and opportunities along with images to present your dreams (List ordered and unordered, Image, table)**

```html
<html>
<head>
<title>my first wishlist</title>
<style>
table, th, td{ border: 1px solid black; width:50%; }
</style>
</head>

<body>
<h1><center>Wishlist 2021</center> </h1>
<table>
<tr>
<th>Electroinc gadgets</th>
<th>Approx. cost in INR</th>
</tr>

<tr>
<td>Smartwatch</td>
<td>5000</td>
</tr>

<tr>
<td>iPhone 12 mini</td>
<td>67000</td>
</tr>

<tr>
<td>Laptop</td>
<td>60000</td>
</tr>

<tr>
<td>Camera(Sony FX3)</td>
<td>200000</td>
</tr>
</table>

<h2>Opportunites</h2>
<ul>
<li>Exposure to new environment</li>
```

```
<li>Chance to learn new tools</li>
<li>chance to learn new technologies</li>
</ul>

<h2>Challenges</h2>
<ol>
<li>Lack of Knowledge</li>
<li>Lack of experience</li>
<li>Time management</li>
</ol>

<img src="d5.jpg" width="300" height="300"></br>
<b>Dreams</b>
<ul style="list-style-type:square;">
<li>Persue Diploma with good skills</li>
<li>To get admission in top engineering collge</li>
<li>Clear entrance exams</li>
<li>Get admission in Stanford University</li>
</ul>

</body>
</html>
```

Output:

11. Design and   create webpage   using HTML and   CSS   about an   awesome animal (Use   necessary   CSS   tags).
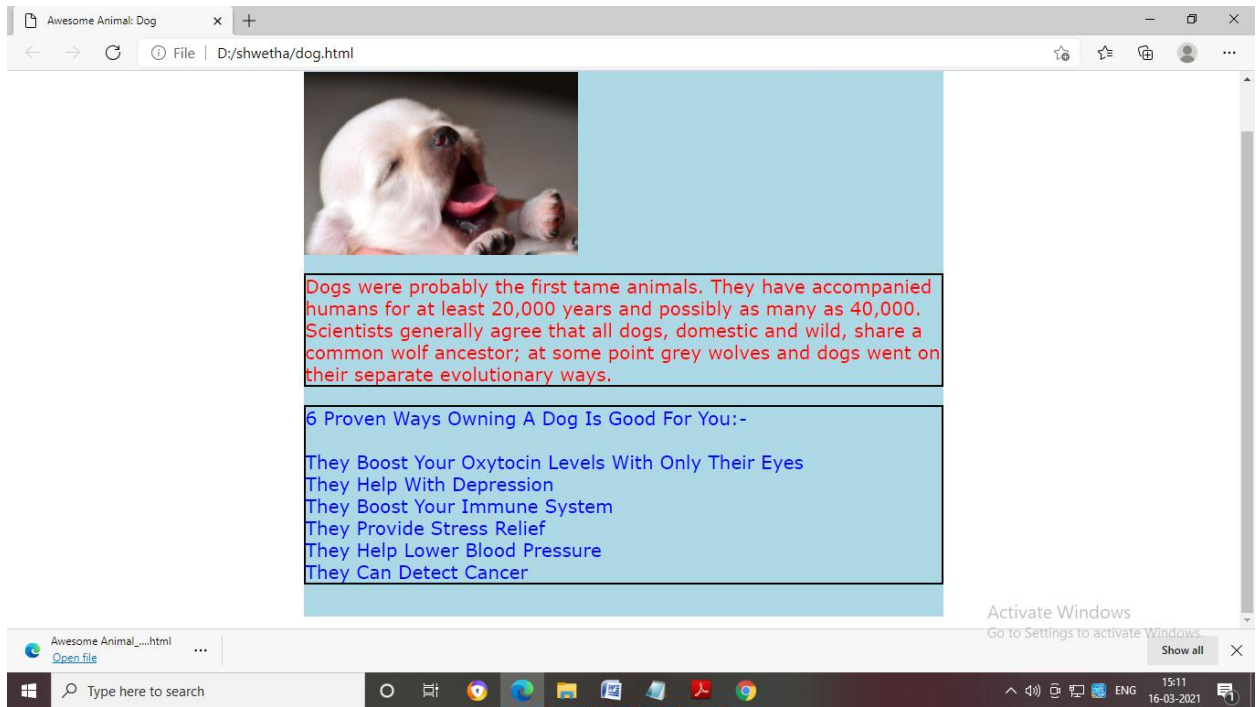
```html
<html>
<head>
<title>Awesome Animal: Dog</title>
<style>
h1 {color: white; text-align: center;}
div {background-color: lightblue;}
p {  border: 2px solid black;  font-family: verdana;  font-size: 20px;  color:red;  }
.content {  max-width: 700px;  margin: auto;  }
</style>
</head>
<body class="content">
<div>
<h1>DOG</h1>
<img src="dog1.jpg" alt="dog image" width="300" height="200">
<p>
Dogs were probably the first tame animals. They have accompanied humans for at least
20,000 years and possibly as many as 40,000. Scientists generally agree that all dogs,
domestic and wild, share a common wolf ancestor; at some point grey wolves and dogs
went on their separate evolutionary ways.
</p>
<pre>
<p style="color: blue;">6 Proven Ways Owning A Dog Is Good For You:-

They Boost Your Oxytocin Levels With Only Their Eyes
They Help With Depression
They Boost Your Immune System
They Provide Stress Relief
They Help Lower Blood Pressure
They Can Detect Cancer
</p>
</pre>
</div>
</body>
</html>
```

Output:

12. Design and create web page for a travel book with more than 3 pages, table to list places (iframe, hyperlink).

home.html

```html
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body { background: #555;}
table, th, td{ border: 1px solid black; width:30%; }
.content {
  max-width: 700px;
  margin: auto;
  background: white;
  padding: 10px;
}
a{font-size:18px;}
</style>
</head>

<body>
<div class="content">
<h1><center>TravelBook 2021</center></h1>
<table>
<tr> <th>Destinations</th> </tr>
<tr><td><a href="dandeli.htm">Dandeli</a></td></tr>
<tr><td><a href="coorg.htm">Coorg</a></td></tr>
<tr><td><a href="chikmaglur.htm">Chikmaglur</a></td></tr>
</tr>
</table>

<h3>Iframe to display webpage within a page
<a href="dandeli.htm">Dandeli</a></h3>
<iframe src="dandeli.htm" width="500px"height="300px"></iframe>

<h3>Bookings</h3>
<ul>
<li>Hotel</li>
<li>Flight</li>
<li>Insurance</li>
</ul>
 </div>
</body>
</html>
```

dandeli.htm

```
<html>
<head>
<style>
body {
  background: #555;
}

.content {
  max-width: 700px;
  margin: auto;
  background: white;
  padding: 10px;
}
</style>
</head>
<body>

<div class="content">
  <h1>Dandeli</h1>
<pre>
<p>Mentioned as the adventure capital of South India,Dandeli is synonymous to peace and adventure.Located in the rocky trails
 of the Western Ghats, Dandeli is a splendid city of Karnataka.
This place is situated at an altitude of 1551 ft above sea-level.
</p>
<h3>Places to Visit</h3>
<ul>
<li>Shiroli Peak
<img src="d2.jpg" width="200" height="150"></li>
<li>Supa Dam
<img src="d4.jpg" width="200" height="150"></li>
</ul>
<a href="home.html">Back to home</a>
</div>
</body>
</html>
```

chickmaglur.htm

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {
  background: #555;
}

.content {
  max-width: 700px;
  margin: auto;
  background: white;
  padding: 10px;
}
</style>
</head>
<body>

<div class="content">
<h1>Chikmaglur</h1>
<pre>
<p>Translated as the 'Young Daughter's Town' as it was presented as dowry to the younger
daughter of the Chief of Sakrepatna, Rukmangada, this
serene city is also known as the'Coffee Land of Karnataka' tranquilizing you from within swith
its aroma.
</p>
<h3><b>Places to Visit</b></h3>
<pre>
<ul>
<li>Kudremukh National Park
<img src="c1.jpg" width="200" height="150">
</li>
<li>Hebbe Falls
<img src="c3.jpg"width="200" height="150">
</li>
</ul>
<a href="home.html"> Back to Home</a>
</div>
</body>
</html>
```
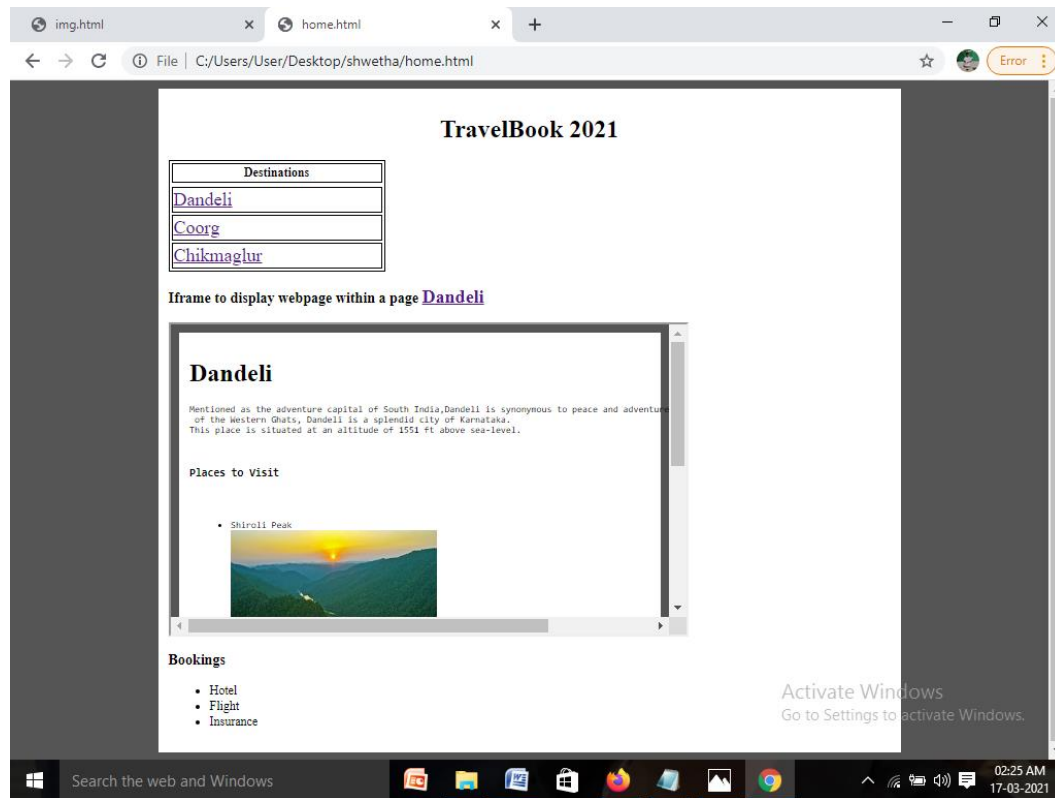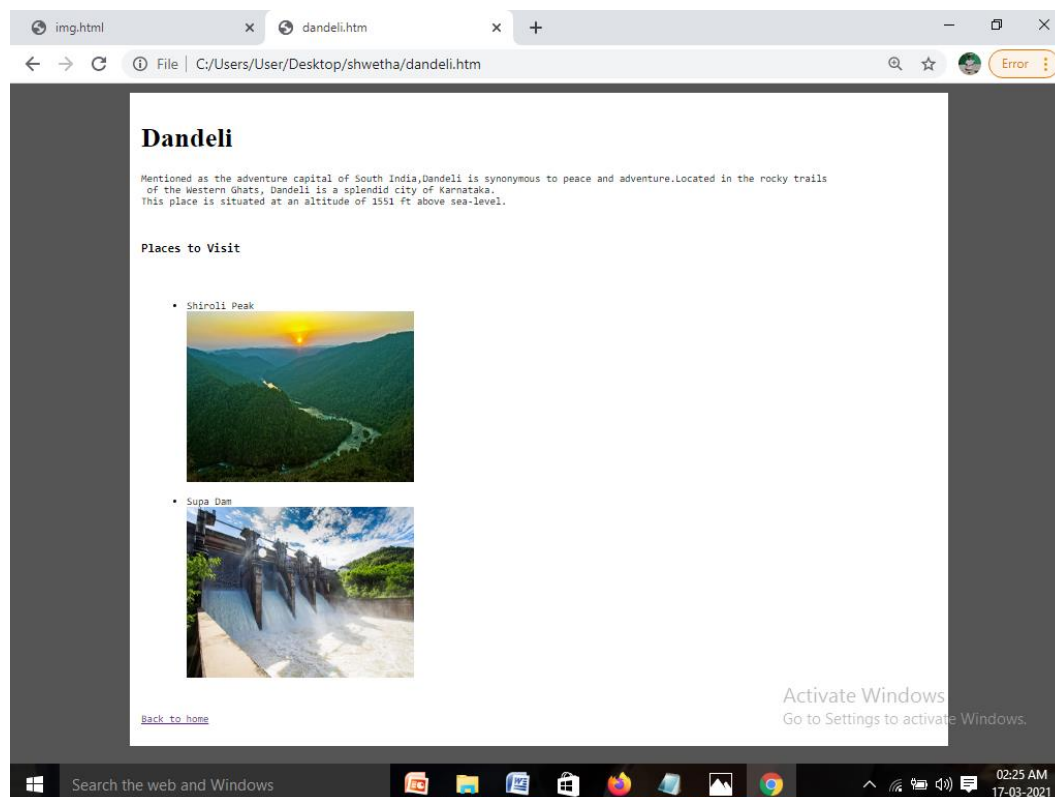
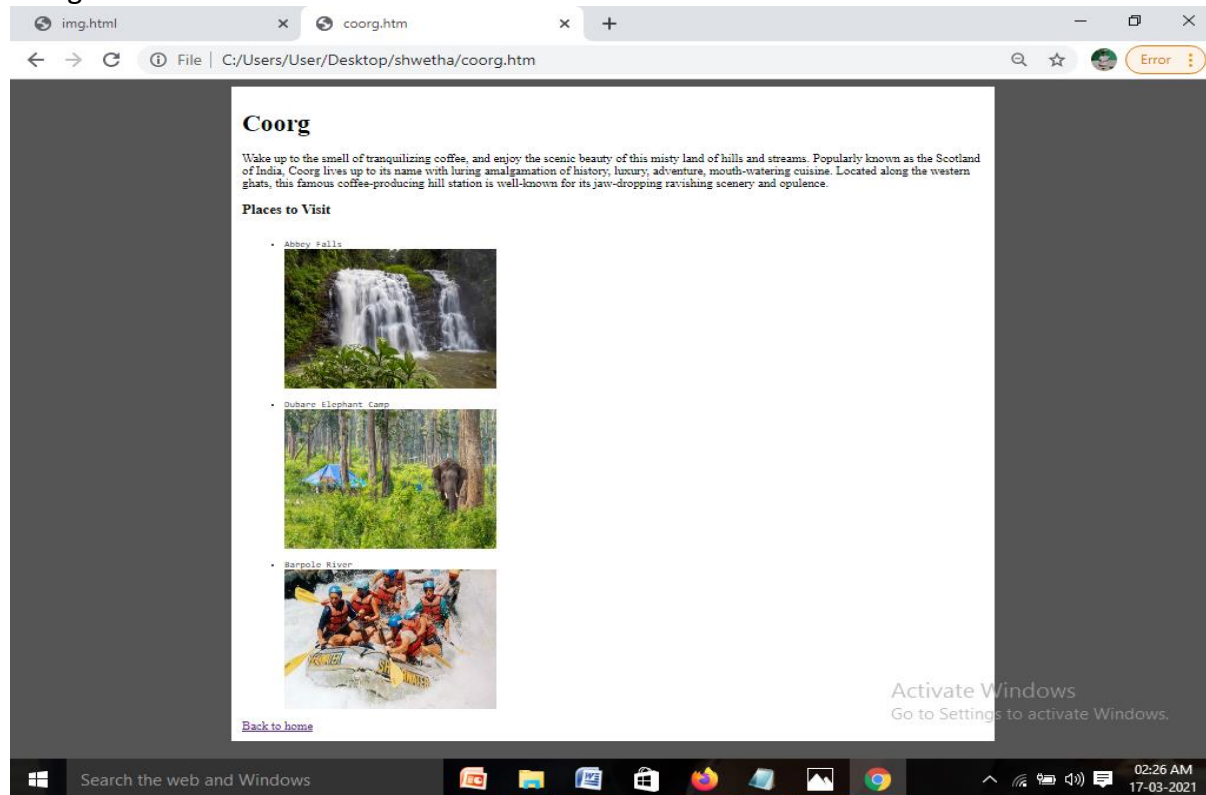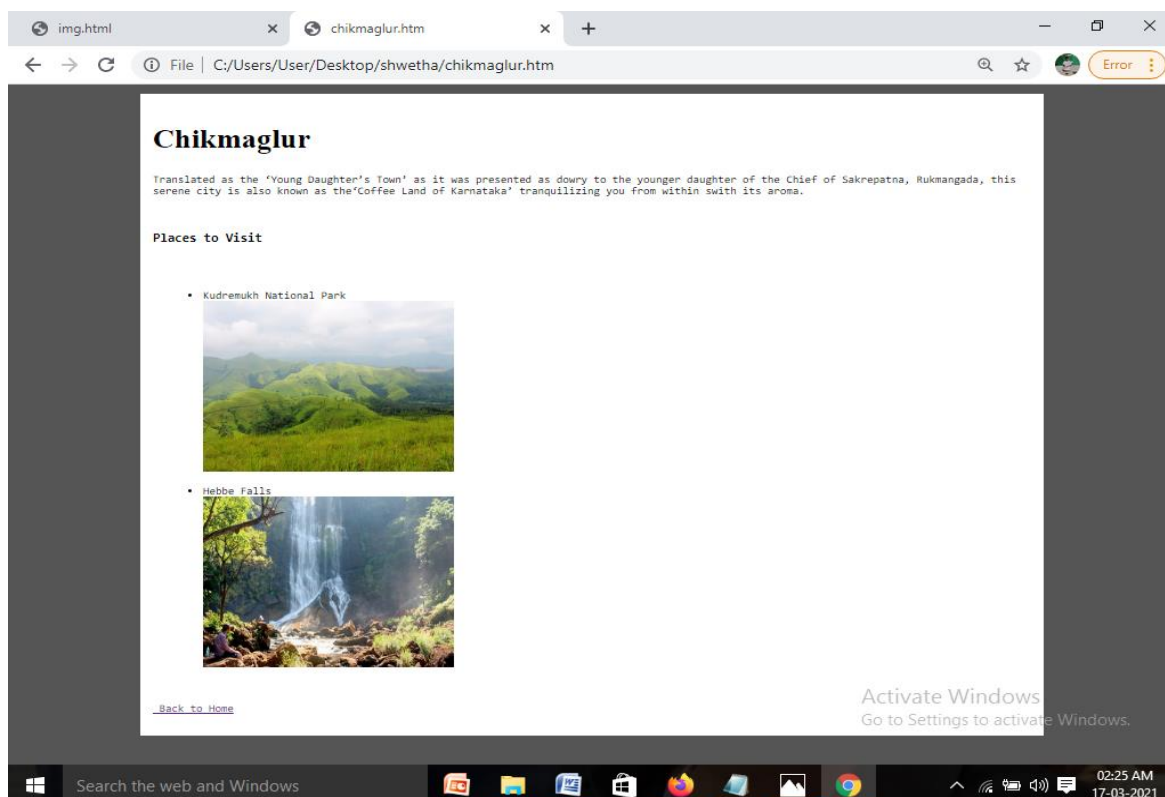**Output:**

Home.html

Dandeli.htm

Coorg.htm
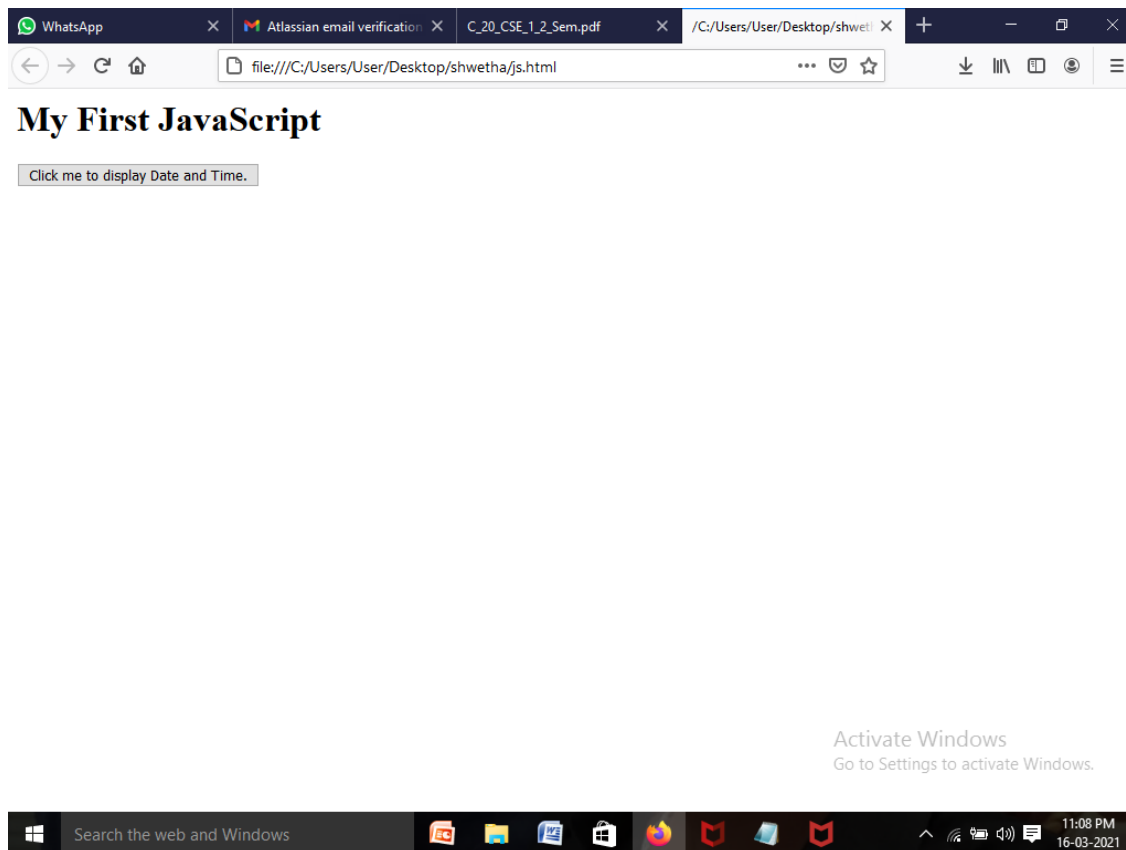

Chikmaglur.htm

13. Design and create webpage with JavaScript to display current system date and time.

```
<html>
<body>
<h1>My First JavaScript</h1>

<button type="button"
onclick="document.getElementById('demo').innerHTML = Date()">
Click me to display Date and Time.</button>
<p id="demo"></p>
</body>
</html>
```

Output:

14. Design and create web page with JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient

```
<html>
<head>
        <script>
                function dis(val)
                {
                        document.getElementById("result").value+=val
                }
                function solve()
                {
                        let x = document.getElementById("result").value
                        let y = eval(x)
                        document.getElementById("result").value = y
                }
                function clr()
                {
                        document.getElementById("result").value = ""
                }
        </script>

        <style>
        .content
        {
                 max-width: 500px;
                 margin: auto;
        }
        td
        {
                width: 110px;
                height: 60px;
                text-align: center;
                font-size: xx-large;
        }
        table
        {
                background-color: #334d4d;
                margin: 50px;
                width: 350px;
                height: 550px;
                margin: 0 auto;
                border-radius: 20px;
                padding: 10px;
```

```
        }

        input[type="button"]
        {
                background-color:WHITE;
                color: black;
                border: solid black 2px;
                width:100%;
                height: 80%;
                font-size: xx-large;
        }

        input[type="text"]
        {
                background-color:white;
                border: solid black 2px;
                width:100%;
                height:80%;
                font-size: xx-large;
        }
        </style>
</head>
<body class="content">
        <table border="1">
        <tr>
                <td colspan="3"><input type="text" id="result"/></td>
                <td><input type="button" value="c" onclick="clr()"/> </td>
        </tr>
        <tr>
                <td><input type="button" value="1" onclick="dis('1')"/> </td>
                <td><input type="button" value="2" onclick="dis('2')"/> </td>
                <td><input type="button" value="3" onclick="dis('3')"/> </td>
                <td><input type="button" value="%" onclick="dis('%')"/> </td>
        </tr>
        <tr>
                <td><input type="button" value="4" onclick="dis('4')"/> </td>
                <td><input type="button" value="5" onclick="dis('5')"/> </td>
                <td><input type="button" value="6" onclick="dis('6')"/> </td>
                <td><input type="button" value="-" onclick="dis('-')"/> </td>
        </tr>
        <tr>
                <td><input type="button" value="7" onclick="dis('7')"/> </td>
                <td><input type="button" value="8" onclick="dis('8')"/> </td>
                <td><input type="button" value="9" onclick="dis('9')"/> </td>
```
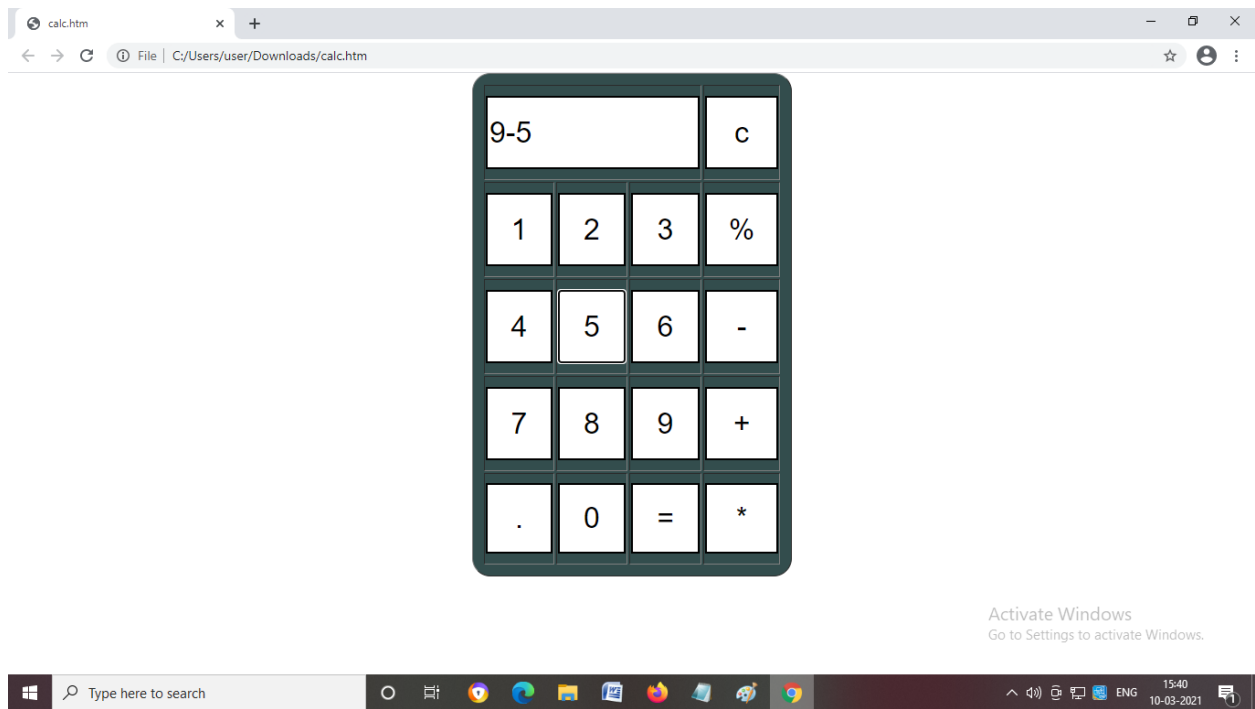
```
                <td><input type="button" value="+" onclick="dis('+')"/> </td>
        </tr>
        <tr>
                <td><input type="button" value="." onclick="dis('.')"/> </td>
                <td><input type="button" value="0" onclick="dis('0')"/> </td>
                <td><input type="button" value="=" onclick="solve()"/> </td>
                <td><input type="button" value="*" onclick="dis('*')"/> </td>
        </tr>
    </table>
</body>
</html>
```
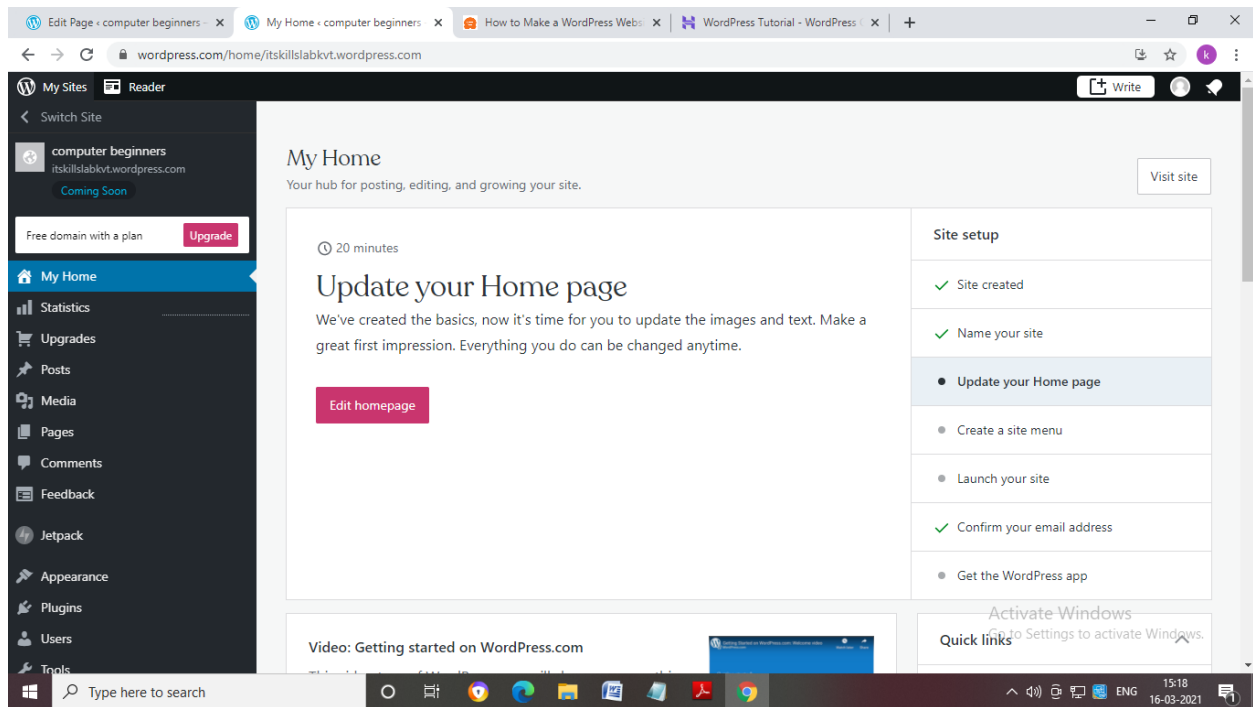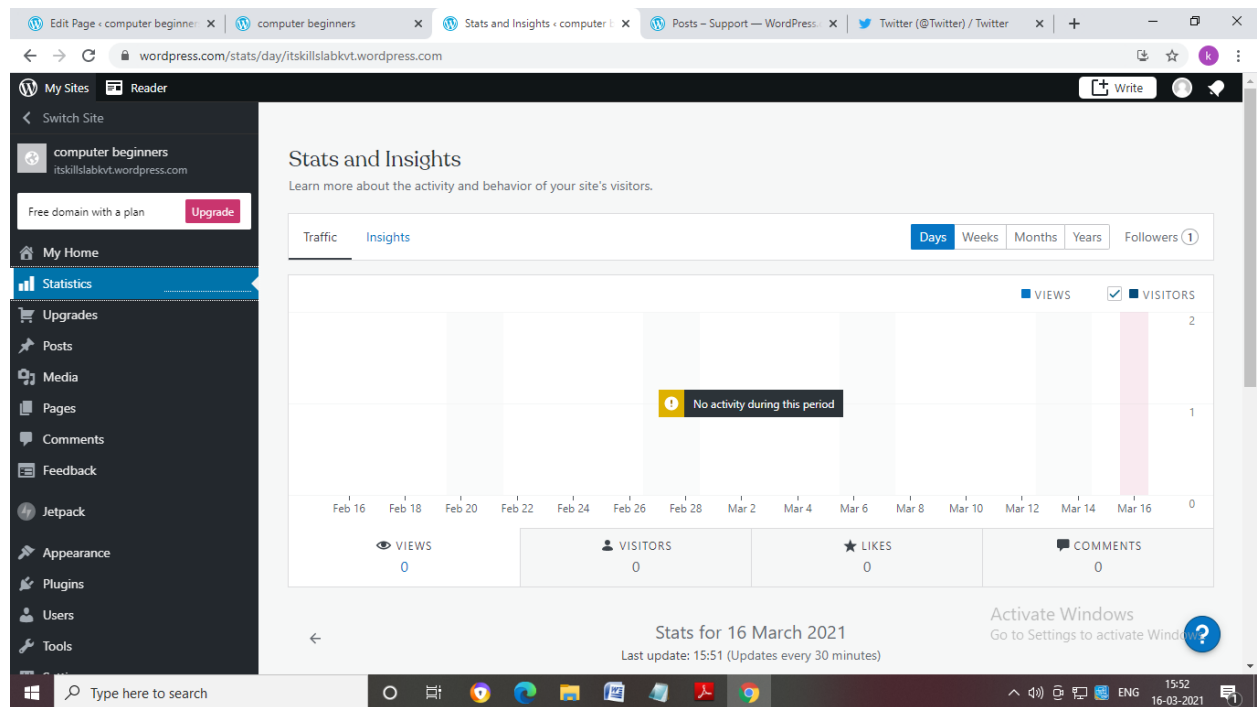
Output:

15. Design and create a personal webpage with dashboard.

1. Open any browser and type https://wordpress.com/
2. Click on "start your website" button.
3. Create your account or continue with google account.
4. Type the domain name in the label, select the plan which is avaliable for free.
5. Click on start with a free site.
6. On right hand side-> under Site setup->give a name for your site.
7. Update your home page, add the details you need to add for the webpage.
8. Under create a site, add a menu if required.
9. Use plus symbol on left corner to create blogs.
10. After updating the details click on Launch button(Select free option).
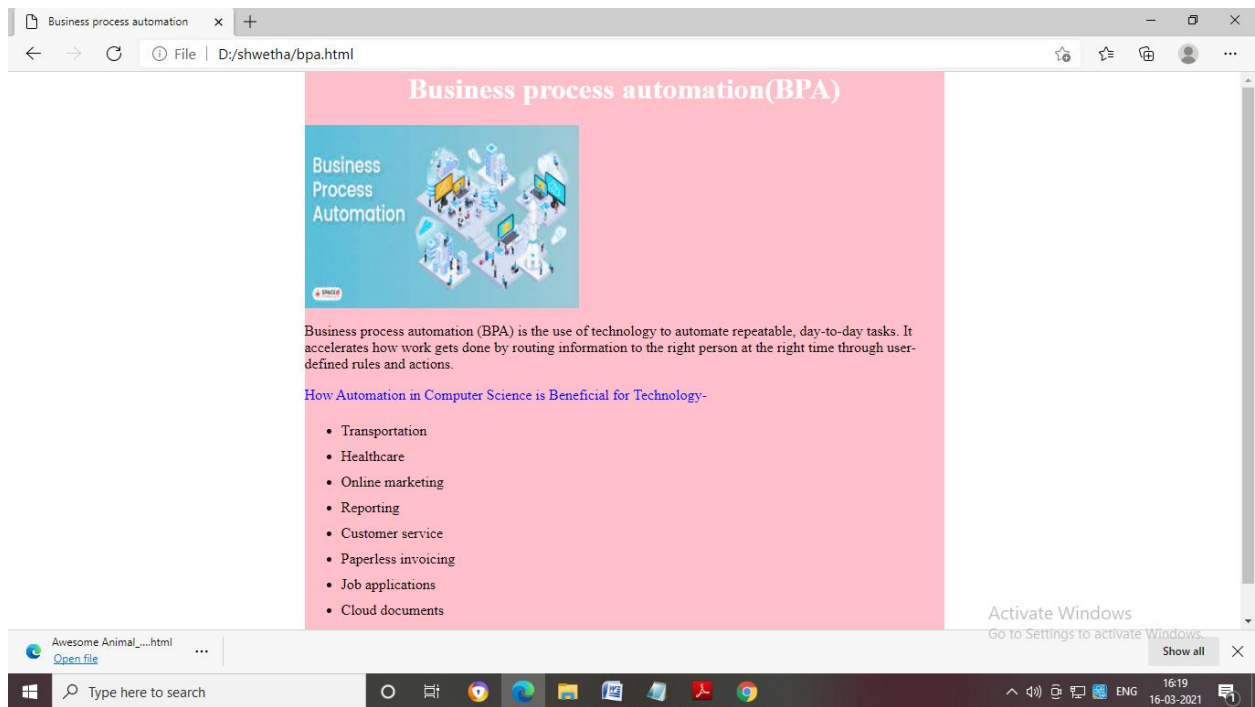11. Under statistics, you can see the dashboard statistics.

Output:

16. Design and create web page about advantages of business process automation with respect to your branch of engineering.

```html
<html>
<head>
<title>Business process automation</title>
<style>
h1 {color: white; text-align: center;}
div {background-color: pink;}
.content {
  max-width: 700px;
  margin: auto;
  }
</style>
</head>
<body class="content">
<div>
<h1>Business process automation(BPA)</h1>
<img src="bpa.jpg" alt="bpa image" width="300" height="200">
<p>
Business process automation (BPA) is the use of technology to automate repeatable, day-to-day tasks. It accelerates how work gets done by routing information to the right person at the right time through user-defined rules and actions.
</p>
<p style="color:blue;">How Automation in Computer Science is Beneficial for Technology-
<ul   style="line-height:180%">
<li>Transportation</li>
<li>Healthcare </li>
<li>Online marketing </li>
<li>Reporting </li>
<li>Customer service </li>
<li>Paperless invoicing</li>
<li>Job applications</li>
<li>Cloud documents</li>
<li>Gaming</li>
</ul>
</p>
</div>
</body>
</html>
```

17. Create user account and demonstrate use of Google drive, Google docs, Google Co-lab.

Create your Google Account

Step 1: Go to: www.gmail.com

Step 2: Click on 'Create an account'.

Step 3: Enter all the required information in the "Create an Account" online form.

Step 4: Check the checkbox Privacy Terms of Service & Privacy Policy-> Click on Next Step.

Step 5: Add a profile photo if you would like by clicking add profile photo. If you would like to skip that step, click Next Step.

Step 6 : You're ready to go! Click Get Started to explore your new Gmail account.

Google Drive

1. Go to drive.google.com.
2. Log into your Google account with your username and password.
3. Double-click a file to view.
4. To upload files or folder, click on '+' button on left hand corner

Google Docs

1. Go to docs.google.com.
2. Log into your Google account with your username and password.
3. To create new document, click on blank document.
4. To view or edit already existing document, double click on the file.

Google colab

1. Go to colab.research.google.com.
2. Click on "new notebook".
3. Click on "+ code" it opens new code cell, type the following code:

```
%%html
<marquee><b>Welcome to IT Skills lab<b><marquee>
```

4. Click the **Play icon** in the left gutter of the cell.
5. Add one more cell "+ code", type the following code:

```
Print("Hello World")
```

6. To run both code cells at a time, goto Runtime tab->select "Run All".
7. To Save notebook, goto File->Save.

18.   Installation of Antivirus software.

- Go to mcafee.com.
- Select "Get your free trial now"-> select "download free trial".
- Click on "Save File".
- From downloads, double click on the file.
- Click on "Agree and Install".