PROJECT DEVELOPMENT PHASE
SPRINT-2 SOURCE CODE

Team ID	PNT2022TMID29843
Project Name	Developing a flight delay prediction model using machine learning.
Team members	Sridhar K V Sriram S M Tamilarasan D Vittal J S

home.php :

```php
<?php require_once "controllerUserData.php"; ?>

<?php

$email = $_SESSION['email'];

$password = $_SESSION['password'];

if($email != false && $password != false){

    $sql = "SELECT * FROM usertable WHERE email = '$email'";

    $run_Sql = mysqli_query($con, $sql);

    if($run_Sql){

        $fetch_info = mysqli_fetch_assoc($run_Sql);

        $status = $fetch_info['status'];

        $code = $fetch_info['code'];

        if($status == "verified"){

            if($code != 0){

                header('Location: reset-code.php');

            }

        }else{

            header('Location: user-otp.php');

        }

    }

}else{

    header('Location: login-user.php');
```

```php
}
?>
```
```html
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <title><?php echo $fetch_info['name'] ?> | FLIGHT DELAY</title>

    <style>
    label{
     font-size:120%;
     color:#ffffff;
}
body{
    background-image: url('wallpaper (13).jpg');
    background-color: black;
    background-repeat: no-repeat;
background-attachment: fixed;
background-size: 100% 100%;
}
h1{
    text-align: center;
    color: white;
    font-family:'Trebuchet MS', 'Lucida Sans Unicode', 'Lucida Grande', 'Lucida Sans', Arial,
sans-serif
}
.cols{
    width: 470px;
    height: 25px;
    border:none;
    font-size:large;
```

```css
        background-color:transparent;

        margin:5px;

        box-sizing: border-box;

    }

    table{

        align-items: center;

        margin-top:45px;

    }

    input{

        color: rgb(255, 255, 255);

    }

    th{

        font-size:1.39em;

        text-align:center;

        color:#fdfdfd;

    }

    input[type=submit] {

        background-color: #04AA6D;

        color:#fdfdfd;

        padding: 12px 20px;

        margin-left: 350px;

        border: none;

        border-radius: 4px;

        cursor: pointer;

        float: left;

        font-family: cursive;

    }

    input[type=text], select,
    textarea,input[type=time],input[type=calendar],input[type=number], input[type=month] {

        width: 100%;

        padding: 12px;
```

```css
    border: 1px solid #fdfdfd;

    border-radius: 4px;

    padding: 5px;

}

#region,#country{

    width: 100%;

    padding: 5px;

    border: 1px solid  #fdfdfd;

    border-radius: 4px;

  font-family: cursive;

    font-size:medium;

    background-color:transparent;

    margin:5px;

    box-sizing:border-box;

    color:#fdfdfd;


}

.col-25 {

    float: left;

    margin-left: 100px;

    width: 30%;

    margin-top: 13px;

    font-family:cursive;

}

.col-75 {

    margin-left: 100px;

    width: 30%;

    float: left;

    margin-top: 13px;

    font-family:cursive;
```

```css
    color: #fdfdfd;
}
.button:after {
    content: "";
    display: table;
    clear: both;
}
ul {
    list-style-type: none;
    margin: 0;
    padding: 0;
    overflow: hidden;
}
li {
    float: left;
}
li a {
    display: block;
    color:#fdfdfd;
    text-align: center;
padding: 14px 16px;
    text-decoration: none;
    font-family: cursive;
}
li a:hover {
    background-color:#000000;
    width: auto;
}
    </style>
</head>
```

```html
<body>
<ul>
    <li style="color:#fdfdfd;font-family:cursive;font-weight: bolder;font-size: xx-large;">Flight Delay Prediction</li>



    <li style="float:right"><a href="logout-user.php" >LogOut</a></li>
    <li style="float:right"><a href="about.php">About</a></li>
  </ul>


  <form action="result.php" method="POST" name="register" autocomplete="">
  <table>
    <tr>
     <td class="col-25" > <label  >Enter Flight Number</label></td>
     <td class="col-75"> <input class="cols"  type="text" placeholder="Enter Flight Number" required  name="FlightNumber"  ></td>
    </tr>
    <tr>
     <td class="col-25" ><label>Month</label></td>
     <td class="col-75"><input class="cols"type="month"  placeholder="Month" required name="Month"></td>
    </tr>


    <tr>
     <td class="col-25"><label>Origin</label></td>
     <td class="col-75">
       <select id="country"   required>
        <option value="region" selected style="color: black;">India</option>
        <option value="region" style="color: black;">Mumbai</option>
        <option value="region"  style="color: black;">Kanada</option>
        <option value="region" style="color: black;">England</option>
```

```html
            <option value="region" style="color: black;">alt</option>

            </select>

        </td>

    </tr>

    <tr>

      <td class="col-25"><label>Destination</label></td>

      <td class="col-75">

        <select id="region"  required>

        <option value="region" selected style="color: black;">India</option>

        <option value="region" style="color: black;">Mumbai</option>

        <option value="region"  style="color: black;">Kanada</option>

        <option value="region" style="color: black;">England</option>

        <option value="region" style="color: black;">alt</option>

         </select>

        </td>

    </tr>

      <td class="col-25"><label>Scheduled Departure Time</label></td>

      <td class="col-75"> <input   class="cols" type="time" placeholder=" Scheduled
Departure Time" required name="Departuretime" ><br></td>

    </tr>

    <tr>

      <td class="col-25"><label>Scheduled Arrival Time</label></td>

      <td class="col-75"> <input   class="cols" type="time"  placeholder="Scheduled Arrival
Time"required name="Arrivaltime" ><br></td>

    </tr>

    <tr>

      <td class="col-25"><label>Actual Departure Time</label></td>

      <td class="col-75"><input class="cols" type="time" placeholder="Actual Departure
Time" required  name="Actualdeparturetime"> </td>

    </tr>

  </table>
```

```html
<br><input class="button" type="submit" name="submit" ><br>
</form>
</body>
</html>
```

Result.php:

```php
<?php require_once "controllerUserData.php"; ?>
<?php
$email = $_SESSION['email'];
$password = $_SESSION['password'];
if($email != false && $password != false){
    $sql = "SELECT * FROM usertable WHERE email = '$email'";
    $run_Sql = mysqli_query($con, $sql);
    if($run_Sql){
        $fetch_info = mysqli_fetch_assoc($run_Sql);
        $status = $fetch_info['status'];
        $code = $fetch_info['code'];
        if($status == "verified"){
            if($code != 0){
                header('Location: reset-code.php');
            }
        }else{
            header('Location: user-otp.php');
        }
    }
}else{
    header('Location: login-user.php');
}
?>
<!DOCTYPE html>
```

```html
<html>
<head>
  <meta charset="UTF-8">
  <title><?php echo $fetch_info['name'] ?> | Home</title>

  <style>
  label{
   font-size:120%;
   color:#ffffff;
}
body{
   background-image: url('wallpaper (13).jpg');
   background-color: black;
   background-repeat: no-repeat;
background-attachment: fixed;
background-size: 100% 100%;
}
h1{
   text-align: center;
   color: white;
   font-family:'Trebuchet MS', 'Lucida Sans Unicode', 'Lucida Grande', 'Lucida Sans', Arial,
sans-serif
}
.cols{
  width: 470px;
  height: 25px;
  border:none;
  font-size:large;
  background-color:transparent;
  margin:5px;
  box-sizing: border-box;
```

```css
    }
    .cont{
        font-size:30px;
        font-family:cursive;
        color:#fdfdfd;
        margin-top:100px;
        margin-left:30px;
    }
    .cont1{
        font-size:30px;
        font-family:cursive;
        color:#fdfdfd;
        margin-top:100px;
        margin-left:30px;
    }
    input{
        color: rgb(255, 255, 255);
    }
    th{
        font-size:1.39em;
        text-align:center;
        color:#fdfdfd;
    }
    input[type=submit] {
        background-color: #04AA6D;
        color:#fdfdfd;
        padding: 12px 20px;
        margin-left: 350px;
        border: none;
        border-radius: 4px;
```

```css
        cursor: pointer;

        float: left;

        font-family: cursive;

}
input[type=text], select,
textarea,input[type=time],input[type=calendar],input[type=number], input[type=month] {

        width: 100%;

        padding: 12px;

        border: 1px solid #fdfdfd;

        border-radius: 4px;

        padding: 5px;

}
#region,#country{

        width: 100%;

        padding: 5px;

        border: 1px solid  #fdfdfd;

        border-radius: 4px;

     font-family: cursive;

        font-size:medium;

        background-color:transparent;

        margin:5px;

        box-sizing:border-box;

        color:#fdfdfd;


}
.col-25 {

        float: left;

        margin-left: 100px;

        width: 30%;

        margin-top: 13px;

        font-family:cursive;
```

```css
}
.col-75 {
    margin-left: 100px;
    width: 30%;
    float: left;
    margin-top: 13px;
    font-family:cursive;
    color: #fdfdfd;
}
.button:after {
    content: "";
    display: table;
    clear: both;
}
ul {
    list-style-type: none;
    margin:center;
    padding: 0;
    overflow: hidden;
 }
li {
    float: left;
 }
li a {
    display: block;
    color:#fdfdfd;
    text-align: center;
padding: 14px 16px;
    text-decoration: none;
    font-family: cursive;
```

```
}
li a:hover {
  background-color:#000000;
  width: auto;
}
  </style>
</head>
<body>
<ul>
    <li style="color:#fdfdfd;font-family:cursive;font-weight: bolder;font-size: xx-
large;">FLIGTH DELAY DURATION</li>
    <li style="float:right"><a href="logout-user.php" >LogOut</a></li>
</ul>
  <div class="cont">
    Actual Arrival Time :
  </div>
  <div class="cont1">
    Delay Time Duration :
  </div>
    </form>
</body>
</html>
```

Logout-user.php:

```
<?php
session_start();
session_unset();
session_destroy();
header('location: login-user.php');
?>
```

About.php:

```php
<?php require_once "controllerUserData.php"; ?>
<?php
$email = $_SESSION['email'];
$password = $_SESSION['password'];
if($email != false && $password != false){
   $sql = "SELECT * FROM usertable WHERE email = '$email'";
   $run_Sql = mysqli_query($con, $sql);
   if($run_Sql){
      $fetch_info = mysqli_fetch_assoc($run_Sql);
      $status = $fetch_info['status'];
      $code = $fetch_info['code'];
      if($status == "verified"){
         if($code != 0){
            header('Location: reset-code.php');
         }
      }else{
         header('Location: user-otp.php');
      }
   }
}else{
   header('Location: login-user.php');
}
?>
<!DOCTYPE html>
<html>
<head>
   <meta charset="UTF-8">
   <title><?php echo $fetch_info['name'] ?> | Home</title>
```

```css
<style>
label{
font-size:120%;
color:#ffffff;
}
body{
background-image: url('wallpaper (13).jpg');
background-color: black;
background-repeat: no-repeat;
background-attachment: fixed;
background-size: 100% 100%;
}
h1{
text-align: center;
color: white;
font-family:'Trebuchet MS', 'Lucida Sans Unicode', 'Lucida Grande', 'Lucida Sans', Arial,
sans-serif
}
.cols{
width: 470px;
height: 25px;
border:none;
font-size:large;
background-color:transparent;
margin:5px;
box-sizing: border-box;
}
.cont{
font-size:30px;
font-family:cursive;
color:#fdfdfd;
```

```css
        margin-top:25px;

        margin-left:20px;

}

.cont1{

        font-size:20px;

        font-family:cursive;

        color:#fdfdfd;

        margin-top:30px;

        margin-left:20px;

        margin-right:700px;

}

input{

        color: rgb(255, 255, 255);

}

th{

        font-size:1.39em;

        text-align:center;

        color:#fdfdfd;

}

input[type=submit] {

        background-color: #04AA6D;

        color:#fdfdfd;

        padding: 12px 20px;

        margin-left: 350px;

        border: none;

        border-radius: 4px;

        cursor: pointer;

        float: left;

        font-family: cursive;

}
```

```css
input[type=text], select,
textarea,input[type=time],input[type=calendar],input[type=number], input[type=month] {

    width: 100%;

    padding: 12px;

    border: 1px solid #fdfdfd;

    border-radius: 4px;

    padding: 5px;

}

#region,#country{

    width: 100%;

    padding: 5px;

    border: 1px solid  #fdfdfd;

    border-radius: 4px;

  font-family: cursive;

   font-size:medium;

   background-color:transparent;

   margin:5px;

   box-sizing:border-box;

   color:#fdfdfd;


}

.col-25 {

    float: left;

    margin-left: 100px;

    width: 30%;

    margin-top: 13px;

    font-family:cursive;

}

.col-75 {

    margin-left: 100px;

    width: 30%;
```

```css
    float: left;

    margin-top: 13px;

    font-family:cursive;

    color: #fdfdfd;

}
.button:after {

    content: "";

    display: table;

    clear: both;

}
ul {

    list-style-type: none;

    margin:center;

    padding: 0;

    overflow: hidden;

  }
li {

    float: left;

  }
li a {

    display: block;

    color:#fdfdfd;

    text-align: center;

padding: 14px 16px;

    text-decoration: none;

    font-family: cursive;

}
li a:hover {

    background-color:#000000;

    width: auto;
```

```html
        }
    </style>
</head>
<body>
<ul>
    <li style="color:#fdfdfd;font-family:cursive;font-weight: bolder;font-size: xx-large;">FLIGTH DELAY DURATION</li>
    <li style="float:right"><a href="logout-user.php" >LogOut</a></li>
    </ul>
  <div class="cont">
  Developing A Flight Delay Prediction Model Using Machine Learning
</div>
<div class="cont1" >
```

Over the last twenty years, air travel has been increasingly preferred among travelers, mainly because of its speed and in some cases comfort. This has led to phenomenal growth in air traffic and on the ground. An increase in air traffic growth has also resulted in massive levels of aircraft delays on the ground and in the air. These delays are responsible for large economic and environmental losses. The main objective of the model is to predict flight delays accurately in order to optimize flight operations and minimize delays.

Using a machine learning model, we can predict flight arrival delays. The input to our algorithm is rows of feature vector like departure date, departure delay, distance between the two airports, scheduled arrival time etc. We then use decision tree classifier to predict if the flight arrival will be delayed or not. A flight is considered to be delayed when difference between scheduled and actual arrival times is greater than 15 minutes. Furthermore, we compare decision tree classifier with logistic regression and a simple neural network for various figures of merit.

```html
  </div>
    </form>


</body>
</html>
```