**Project : 3**

**Program Debugging**

**Q1)**

var canvas, ctx;

var arrflights = new Array();

var nbSteps = 100;

var interval = 75;

var currentTime = 0;

function Plane(posX = "", posY = "", destinationX = "", destinationY = "",departureTime=""){

this.src ="img/plane.jpg";

this.imgWidth = 40;

this.imgHeight = 40;

// in these two lines i am using parseInt function which parses a given //value to an integer value because the value of the X and Y co-ordinates //should be an integer value

this.posX = parseInt(posX);

this.posY = parseInt(posY);

this.destX = destinationX;

this.destY = destinationY;

this.currentStep = 0;

this.departureTime = parseInt(departureTime);

this.draw = function(){

var plane = document.createElement("img");

plane.setAttribute("src", this.src);

console.log("moving img"+""+plane.getAttribute("src")+""+this.posX+""+this.posY);

ctx.drawImage(plane, this.posX, this.posY, this.imgWidth, this.imgHeight);

}

this.updateLocation = function(){

var distX = this.destX - this.posX;

var stepsLeft = nbSteps - this.currentStep;

var distY = this.destY - this.posY;

this.posX += distX / stepsLeft;

this.posY += distY / stepsLeft;

this.currentStep++;

}

}

function generateRand(max = 250){

return Math.random() \* max;

}

function drawMap(){

var map = document.createElement("img");

map.setAttribute("src","img/Canada-1280-1107.png");

// in the above line i change a little bit code in which

//i make correction in the path of the image which was not given properly before

map.setAttribute("width", canvas.width);

map.setAttribute("height", canvas.height);

ctx.drawImage(map, 0, 0, canvas.width, canvas.height);

}

function drawMovement(){

currentTime++;

drawMap();

for(i = 0; i < arrflights.length; i++){

if(arrflights[i].departureTime < currentTime){

arrflights[i].updateLocation();

arrflights[i].draw();

}

if(arrflights[i].currentStep > nbSteps){

arrflights.splice(i, 1);

}

}

}

$(document).ready(function(){

canvas = document.getElementById('myCanvas');

ctx = canvas.getContext('2d');

drawMap();

// 1.1 Json structure is incorrect

var flightJson = '{"flights":[{"departure":"Quebec","departureX":"734","departureY":"427","departureTime":"11","arrival":"Fredericton","arrivalX":"800","arrivalY":"422","duration":"6"},{"departure":"Quebec","departureX":"734","departureY":"427","departureTime":"109","arrival":"Yellowknife","arrivalX":"285","arrivalY":"271","duration":"6"},{"departure":"Quebec","departureX":"734","departureY":"427","departureTime":"62","arrival":"Regina","arrivalX":"336","arrivalY":"417","duration":"6"}]}';

console.log(flightJson);

//this function is used to display the content

var JSONObject = JSON.parse(flightJson);

var flights = JSONObject.flights;

console.log(flights);

console.log(flights[0].departure);

$("#myCanvas").click(function(){

var myPlane;

for (i=0;i<flights.length;i++)

// here i make the changes in the for loop to display the data properly

{

console.log(flights[i].departureX+""+ flights[i].departureY +""+flights[i].arrivalX +""+flights[i].arrivalY+""+flights[i].departureTime);

myPlane = new Plane(flights[i].departureX, flights[i].departureY,flights[i].arrivalX,flights[i].arrivalY,flights[i].departure Time);

arrflights.push(myPlane);

}

console.log(arrflights);

setInterval(drawMovement, interval);

});

});