<!DOCTYPE html>

<html>

<head>

<title>CSCI 6314 Lab 2 by Ulvi Bajarani</title>

</head>

<script>

function FutureValueCalculation()

{

document.getElementById("Results").innerHTML = ""; // To clear the table.

let isNumberRegex = /^-?[\d.]+(?:e-?\d+)?$/; //The regex code to check if the value is legal.

var InitialInvestment = document.getElementById("InitialInvestment").value; // To get the initial investment.

var InterestRate = document.getElementById("InterestRate").value; // To get the interest rate.

var DepositValue = document.getElementById("DepositValue").value; // To get the deposit.

var AgeStarted = document.getElementById("AgeStarted").value; // To get the age.

//Checking if the values are legal.

if (!(InitialInvestment.match(isNumberRegex)))

{

return alert("InitialInvestment should be the value (float or integer). Please, enter the right value");

}

if(InitialInvestment <= 0)

{

return alert("Initial Investment should be higher than 0. Please, enter the right value");

}

if (!(InterestRate.match(isNumberRegex)))

{

return alert("Interest Rate should be the value (float or integer). Please, enter the right value");

}

if(InterestRate <= 0)

{

return alert("Interest Rate should be higher than 0 and not equal to 0. Please, enter the right value");

}

if (!(DepositValue.match(isNumberRegex)))

{

return alert("Deposit Value for 30 days should be the value (float or integer). Please, enter the right value");

}

if(DepositValue < 0)

{

return alert("Deposit Value for 30 days should be higher than 0 (you can enter 0 if you calculate just annual value). Please, enter the right value");

}

if (!(AgeStarted.match(isNumberRegex)))

{

return alert("Starting age should be the integer value (even you enter the float, the float part will be removed). Please, enter the right value");

}

if((AgeStarted <= 0) || (AgeStarted >= 65))

{

return alert("The starting age should be higher than 0, not equal to 0, lower than 65 and not equal to 65. Please, enter the right value");

}

//Create an initial table definitions.

document.getElementById("Results").insertRow(-1).innerHTML = "<td style=\"text-align: center\" colspan=\"5\"><b>Future Value Calculation</b></td>";

document.getElementById("Results").insertRow(-1).innerHTML = "<td style=\"text-align: center\" colspan=\"5\">Initial Investment: $" + InitialInvestment + "</td>";

document.getElementById("Results").insertRow(-1).innerHTML = "<td style=\"text-align: center\" colspan=\"5\">Interest Rate: " + InterestRate + "%</td>";

document.getElementById("Results").insertRow(-1).innerHTML = "<td style=\"text-align: center\" colspan=\"5\">Deposit every 30 days: $" + DepositValue + "</td>";

document.getElementById("Results").insertRow(-1).innerHTML = "<td style=\"text-align: center\" colspan=\"5\">Investment started: " + AgeStarted + "</td>";

document.getElementById("Results").insertRow(-1).innerHTML = "<td style=\"text-align: center\"><b>Age</td><td><b>Beginning Balance</b></td><td><b>Interest</b></td><td><b>Deposits</b></td><td><b>Ending Balance</b></td>";

//Defining Beginning balance, ending balance, interest gained. It is important to define them first to avoid plus-minus one problem.

var BeginningBalance = InitialInvestment;

var EndingBalance = InitialInvestment;

var InterestGained;

// the For cycle with the formulas to calculate.

for (var i = 1 ; i <= (65 - Math.floor(AgeStarted)) ; i++)

{

var AgeToCalculate = Math.floor(AgeStarted)+(i);

for (var j = 1 ; j <= 365 ; j++)

{

EndingBalance \*= (1+(InterestRate/36500));

if (j % 30 === 0)

{

EndingBalance += Math.floor(DepositValue);

}

if (j == 365)

{

InterestGained = EndingBalance - BeginningBalance-12\*DepositValue;

document.getElementById("Results").insertRow(-1).innerHTML = "<td style=\"text-align: center\">" + AgeToCalculate + "</td>" + "<td style=\"text-align: center\">" + Math.floor(BeginningBalance\*100)/100 + "</td>" + "<td style=\"text-align: center\">" + Math.floor(InterestGained\*100)/100 + "</td>" + "<td style=\"text-align: center\">" + 12\*DepositValue + "</td>" + "<td style=\"text-align: center\">" + Math.floor(EndingBalance\*100)/100 + "</td>";

BeginningBalance = EndingBalance;

}

}

}

}

</script>

<body>

<!-- The form and the button -->

<form autocomplete="off">

<div><label for="InitialInvestment">Initial Investment</label><input type="text" id="InitialInvestment" name="InitialInvestment">$</div>

<br>

<div><label for="InterestRate">Interest Rate</label><input type="text" id="InterestRate" name="InterestRate">%</div>

<br>

<div><label for="DepositValue">Deposit every 30 days</label><input type="text" id="DepositValue" name="DepositValue">$</div>

<br>

<div><label for="AgeStarted">Investment started</label><input type="text" id="AgeStarted" name="AgeStarted"></div>

<br>

<div><button type="button" onclick="FutureValueCalculation()">Calculate!</button></div>

</form>

<!-- The Table -->

<table border="1px" id="Results"></table>

</body>

</html>















