| **Name of Student:** Ajay Karthikesan | | | |
| --- | --- | --- | --- |
| **Roll Number:** 57 | | **Assignment Number:** 1 | |
| **Aim of Assignment:** Design UI based applications using basic Windows forms Controls | | | |
| **DOP:** .29.3.23 | | **DOS:** 19.4.23 | |
| **CO Mapped:**  CO1 | **PO Mapped:**  PO3, PO5, PSO1, PSO2 | **Faculty Signature:** | **Marks:** |

## 

## Practical No. 1

**Aim:** Design UI based applications using basic Windows forms Controls

1. WAP in C# that ask the user to enter a month, a day and a two digit year. The program should then determine whether the month times a day is equal to the year. If so, it should display the message saying the date is magic. Otherwise not a magic
2. WAP to perform Money Conversion.
3. WAP To convert temperature from Fahrenheit to Celsius or vice versa
4. Create a Window application to calculate age of a person by providing input as birth date and current date .Current date and Birth date must be in long string format and display the age in terms of years.

**Theory:**

* .net framework:
  + .Net Framework is a software development platform developed by Microsoft for building and running Windows applications. The .Net framework consists of developer tools, programming languages, and libraries to build desktop and web applications. It is also used to build websites, web services, and games. The Microsoft .Net framework can be used to create both - Form based and Web-based applications.
* CLR:
  + CLR is the basic and Virtual Machine component of the .NET Framework. It is the run-time environment in the .NET Framework that runs the codes and helps in making the development process easier by providing the various services. Main components of CLR:
* Common Language Specification (CLS)
* Common Type System (CTS)
* Garbage Collection (GC)
* Just In – Time Compiler (JIT)
* Structure of C# programming:
  + C# programs consist of one or more files. Each file contains zero or more namespaces. A namespace contains types such as classes, structs, interfaces, enumerations, and delegates, or other namespaces.
* Namespace and its use in application:
  + A namespace is a declarative region that provides a scope to the identifiers (the names of types, functions, variables, etc.) inside it.
  + It is also referred as named group of classes having common features. The members of a namespace can be namespaces, interfaces, structures, and delegates.
  + Defining a Namespace: To define a namespace in C#, we will use the namespace keyword followed by the name of the namespace and curly braces containing the body of the namespace

**Code:**

File: MagicDateForm.cs

namespace \_2Practical

{

public partial class MagicDateForm : Form

{

public MagicDateForm()

{

InitializeComponent();

}

private void Form1\_Load(object sender, EventArgs e)

{

}

private void checkBtn\_Click(object sender, EventArgs e)

{

int day = Convert.ToInt32(dayTb.Text);

int month = Convert.ToInt32(monthTb.Text);

int year = Convert.ToInt32(yearTb.Text);

string result = "The entered date is ";

if (year != (day \* month))

{

result += "not ";

}

result += "a magic date";

MessageBox.Show(result, "caption", MessageBoxButtons.OK, MessageBoxIcon.Information);

}

}

}

File: MoneyConverterForm.cs

﻿using \_2Practical.utility;

namespace \_2Practical

{

public partial class MoneyConverterForm : Form

{

public MoneyConverterForm()

{

InitializeComponent();

inputCurrCbb.DataSource = Enum.GetNames(typeof(Currency));

outputCurrCbb.DataSource = Enum.GetNames(typeof(Currency));

outputCurrCbb.SelectedIndex = (int)Currency.INR;

}

private void updateOutputAmt()

{

Currency sourceCurr = (Currency)this.inputCurrCbb.SelectedIndex;

Currency destCurr = (Currency)this.outputCurrCbb.SelectedIndex;

try

{

double srcAmt = Convert.ToDouble(this.inputAmtTxt.Text);

outputAmtTxt.Text = MoneyConverter.convert(sourceCurr, destCurr, srcAmt).ToString("0.##");

}

catch (System.FormatException)

{

outputAmtTxt.Text = "";

}

}

private void updateInputAmt()

{

Currency sourceCurr = (Currency)this.outputCurrCbb.SelectedIndex;

Currency destCurr = (Currency)this.inputCurrCbb.SelectedIndex;

try

{

double srcAmt = Convert.ToDouble(this.outputAmtTxt.Text);

inputAmtTxt.Text = MoneyConverter.convert(sourceCurr, destCurr, srcAmt).ToString("0.##");

}

catch (System.FormatException)

{

inputAmtTxt.Text = "";

}

}

private void inputCurr\_SelectedIndexChanged(object sender, EventArgs e)

{

updateOutputAmt();

}

private void inputAmt\_TextChanged(object sender, EventArgs e)

{

if (ActiveControl == outputAmtTxt) return;

updateOutputAmt();

}

private void outputAmt\_TextChanged(object sender, EventArgs e)

{

if (ActiveControl == inputAmtTxt) return;

updateInputAmt();

}

private void outputCurr\_SelectedIndexChanged(object sender, EventArgs e)

{

updateInputAmt();

}

}

}

File: TemperatureConverterForm.cs

﻿using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

namespace \_2Practical

{

public partial class TemperatureConverterForm : Form

{

public TemperatureConverterForm()

{

InitializeComponent();

}

private static string FahrenheitToCelsius(double f)

{

double c = ((f - 32) \* 5) / 9;

return c.ToString("0.##");

}

private static string CelsiusToFahrenheit(double c)

{

double f = ((c \* 9) / 5) + 32;

return f.ToString("0.##");

}

private void updateFhrnTxt()

{

try

{

double c = Convert.ToDouble(celsTxt.Text);

fhrnTxt.Text = CelsiusToFahrenheit(c);

}

catch (FormatException)

{

fhrnTxt.Text = "";

}

}

private void updateCelsTxt()

{

try

{

double f = Convert.ToDouble(fhrnTxt.Text);

celsTxt.Text = FahrenheitToCelsius(f);

}

catch (FormatException)

{

celsTxt.Text = "";

}

}

private void fhrnTxt\_TextChanged(object sender, EventArgs e)

{

if (ActiveControl == celsTxt) return;

updateCelsTxt();

}

private void celsTxt\_TextChanged(object sender, EventArgs e)

{

if (ActiveControl == fhrnTxt) return;

updateFhrnTxt();

}

}

}

File: utility/Currency.cs

﻿namespace \_2Practical.utility

{

enum Currency

{

USD,

INR,

YEN,

EUR

}

}

File: MoneyConverter.cs

﻿using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace \_2Practical.utility

{

internal class MoneyConverter

{

private static double ToINR(Currency srcCurr, double srcAmt)

{

switch(srcCurr)

{

case Currency.USD: return srcAmt \* 82.04;

case Currency.YEN: return srcAmt \* 0.62;

case Currency.EUR: return srcAmt \* 89.81;

default: return srcAmt;

}

}

private static double INRTo(Currency destCurr,double srcAmt)

{

switch (destCurr)

{

case Currency.USD: return srcAmt \* 0.012;

case Currency.YEN: return srcAmt \* 1.60;

case Currency.EUR: return srcAmt \* 0.011;

default: return srcAmt;

}

}

public static double convert(Currency srcCurr,Currency destCurr,double srcAmt)

{

if (srcCurr == destCurr) return srcAmt;

double inrsrcAmt=ToINR(srcCurr,srcAmt);

return INRTo(destCurr,inrsrcAmt);

}

}

}

File: AgeCalculatorForm.cs

﻿using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

namespace \_2Practical

{

public partial class AgeCalculatorForm : Form

{

public AgeCalculatorForm()

{

InitializeComponent();

}

private void showResultMessageBox()

{

try

{

DateTime dob = DateTime.Parse(dobTxt.Text);

TimeSpan age = DateTime.Now - dob;

MessageBox.Show($"You are {Math.Round((age.TotalDays/365))} year(s) old.","Age Found", MessageBoxButtons.OK, MessageBoxIcon.Information);

}

catch

{

MessageBox.Show("Please Enter the date in the right format", "Wrong Date Format", MessageBoxButtons.OK, MessageBoxIcon.Error);

}

}

private void findAgeBtn\_Click(object sender, EventArgs e)

{

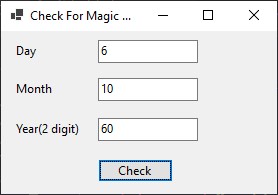
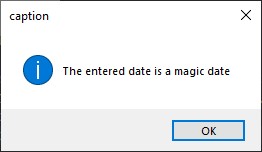
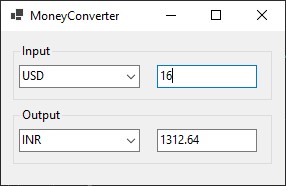
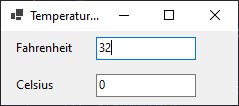
showResultMessageBox();

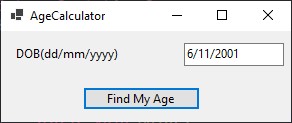
}

}

}

**Output:**

1.  
2.  3. 

4.  

**Conclusion:** I learnt how to design UI based applications using basic Windows forms Controlsl