

**Institute of Engineering & Management**  
**Department of Computer Science & Engineering**  
**Software Tools Laboratory for 2<sup>nd</sup> year 4<sup>th</sup> semester 2017**  
**Code: CS 492**

**Date: 17/01/18**

**WEEK-1**

**Assignment-1**

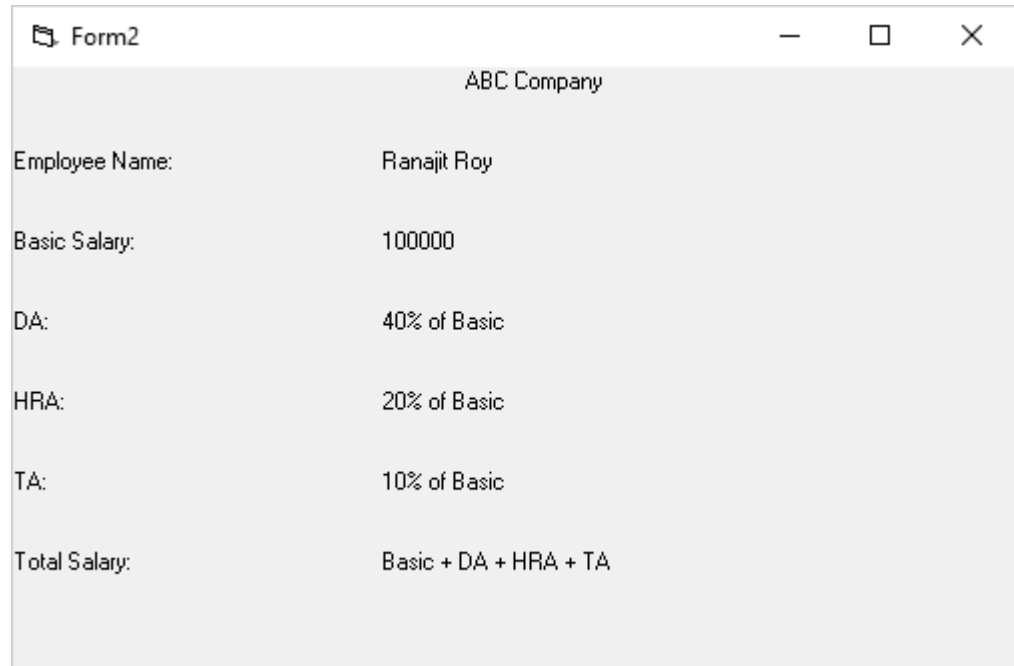
**Problem Statement:** In an organization the gross salary of an employee depends on his/her Basic salary and some other allowances like Dearness Allowance (DA), House Rent Allowance (HRA) and Traveling Allowance (TA). According to the organization's policy -  
DA = 40% of Basic salary  
HRA = 20% of Basic salary  
TA = 10% of Basic salary and  
The gross salary is calculated as –  
Gross salary = Basic salary + DA + HRA + TA

Design two forms: 1 with two textboxes for Name and Basic Salary and a button to pop up another form displaying Name, Basic Salary, DA, HRA, TA and Gross Salary

**Screen-Shot:**

**Form-1:**

The screenshot shows a Windows application window titled "Form1" with standard minimize, maximize, and close buttons. The window has a light gray background and a title bar. Inside the window, the text "ABC Company" is centered at the top. Below this, there are several labels and input fields arranged in a list-like format. The labels are "Employee Name:", "Basic Salary:", "DA:", "HRA:", "TA:", and "Total Salary:". The corresponding input fields contain the values "Ranajit Roy", "100000", "40% of Basic", "20% of Basic", "10% of Basic", and "Basic + DA + HRA + TA". At the bottom right of the window, there is a button labeled "Generate Pay Slip".

**Form-2:**

ABC Company	
Employee Name:	Ranajit Roy
Basic Salary:	100000
DA:	40% of Basic
HRA:	20% of Basic
TA:	10% of Basic
Total Salary:	Basic + DA + HRA + TA

**Form Code:****For Form-1:**

```
Private Sub Command1_Click()  
Form2.Label12.Caption = Text1.Text  
Form2.Label13.Caption = Text2.Text  
Form2.Show  
End Sub  
  
Private Sub Text2_Change()  
Form2.Label8.Caption = 0.4 * Val(Text2.Text)  
Form2.Label9.Caption = 0.2 * Val(Text2.Text)  
Form2.Label10.Caption = 0.1 * Val(Text2.Text)  
Form2.Label11.Caption = Val(Form2.Label8.Caption) +  
Val(Form2.Label9.Caption) + Val(Form2.Label10.Caption)  
End Sub
```

## Assignment-2

**Problem Statement:** In an examination there are 5 subjects and the full marks in each subject is 100. The marks are summed up and a student gets a division as per the following rules:

Percentage above or equal to 60 – 1st division.

Percentage between 50 and 59 – 2nd division.

Percentage between 40 and 49 – 3rd division.

Percentage less than 40 – Fail.

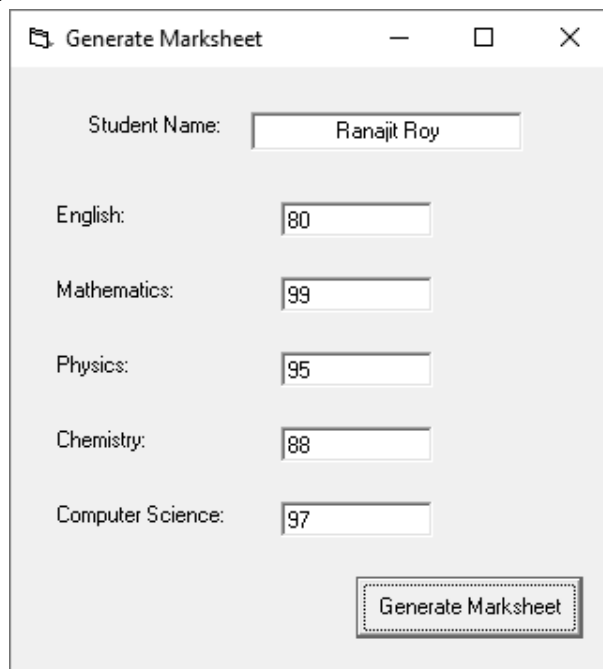
But, a student will be promoted if and only if he/she passes in at least three subjects.

i) Design a form to give input the marks and student name

ii) Generate a mark sheet for the student stating his/her division and whether he/she has been promoted or not

**Screen-Shot:**

**Form-1:**




A screenshot of a Windows-style application window titled "Generate Marksheet". The window has a light gray background and a standard title bar with minimize, maximize, and close buttons. Inside the window, there is a form with the following fields and values:

- Student Name:
- English:
- Mathematics:
- Physics:
- Chemistry:
- Computer Science:

At the bottom right of the form, there is a button labeled "Generate Marksheet".

**Form-2:**



A screenshot of a Windows-style application window titled "Marksheet". The window has a light gray background and a standard title bar with minimize, maximize, and close buttons. Inside the window, the following information is displayed:

- Student Name: Ranajit Roy
- Division: 1st
- You are promoted

**Form Code:****For Form-1:**

```
Private Sub Command1_Click()  
Form2.Label2.Caption = Text1.Text  
Form2.Label5.Caption = "You are promoted"  
Dim flag As Integer  
flag = 0  
If Val(Text2.Text) < 40 Then  
flag = flag + 1  
End If  
If Val(Text3.Text) < 40 Then  
flag = flag + 1  
End If  
If Val(Text4.Text) < 40 Then  
flag = flag + 1  
End If  
If Val(Text5.Text) < 40 Then  
flag = flag + 1  
End If  
Dim total As Integer  
total = Val(Text2.Text) + Val(Text3.Text) + Val(Text4.Text)  
+ Val(Text5.Text) + Val(Text6.Text)  
If total >= 300 Then  
Form2.Label4.Caption = "1st"  
ElseIf total >= 250 Then Form2.Label4.Caption = "2nd"  
ElseIf total >= 200 Then Form2.Label4.Caption = "3rd"  
Else: Form2.Label4.Caption = "FAIL"  
Form2.Label5.Caption = "You are not promoted"  
End If  
If flag > 2 Then  
Form2.Label4.Caption = "FAIL"  
Form2.Label5.Caption = "You are not promoted"  
End If  
Form2.Show  
End Sub
```

**Assignment-3**

**Problem Statement:** A certain grade of steel is graded according to the following conditions:

Hardness must be greater than 50

Carbon content must be less than 0.7

Tensile strength must be greater than 5600.

The grades are as follows:

Grade is 10 if all three conditions are met.

Grade is 9 if conditions (i) and (ii) are met.

Grade is 8 if conditions (ii) and (iii) are met.

Grade is 7 if conditions (i) and (iii) are met.

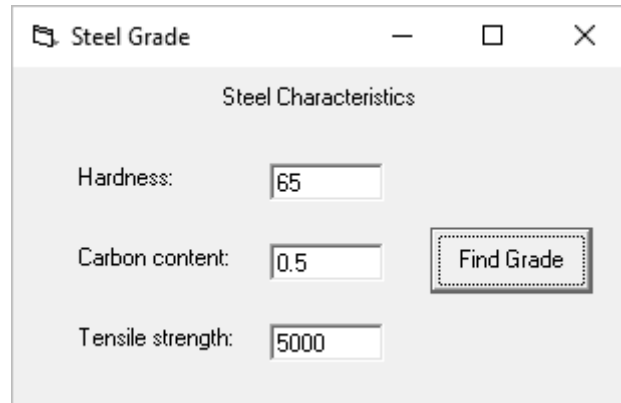
Grade is 6 if one condition is met.

Grade is 5 if none of the conditions are met.

Design a proper User Interface (UI), which will require the user to give values of hardness, carbon content and tensile strength of the steel under consideration and output the grade of the steel.

**Screen-Shot:**

**Form-1:**



Steel Grade

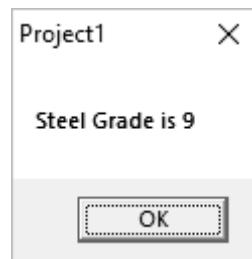
Steel Characteristics

Hardness: 65

Carbon content: 0.5 Find Grade

Tensile strength: 5000

**Message Box:**



**Form Code:**

**For Form-1:**

```
Private Sub Command1_Click()  
If Hard.Text = "" Or Carbon.Text = "" Or Tens.Text = "" Then  
MsgBox ("Invalid Input")  
ElseIf Val(Hard.Text) > 50 And Val(Carbon.Text) < 0.7 And  
Val(Tens.Text) > 5600 Then  
MsgBox ("Steel Grade is 10")  
ElseIf Val(Hard.Text) > 50 And Val(Carbon.Text) < 0.7 Then  
MsgBox ("Steel Grade is 9")  
ElseIf Val(Carbon.Text) < 0.7 And Val(Tens.Text) > 5600 Then  
MsgBox ("Steel Grade is 8")  
ElseIf Val(Hard.Text) > 50 And Val(Tens.Text) > 5600 Then  
MsgBox ("Steel Grade is 7")  
ElseIf Val(Hard.Text) > 50 Or Val(Carbon.Text) < 0.7 Or  
Val(Tens.Text) > 5600 Then  
MsgBox ("Steel Grade is 6")  
Else  
MsgBox ("Steel Grade is 5")  
End If  
End Sub
```