

If Statement

Sub If-Test1()

If Range("a2").Value >= 35 Then

Range("c2").Value = "pass"

End Sub

If Else Statement

Sub If-Test2()

If Range("a2").Value >= 35 Then

Range("c2").Value = "pass"

Else

Range("c2").Value = "Fail"

End If

End Sub

If ElseIf Else statement

(63)

sub If-Test3()

If Range("a2").Value <= 35 Then

Range("c2").Value = "Fail"

ElseIf Range("a2").Value >= 60 Then

Range("c2").Value = "C Grade"

ElseIf Range("a2").Value <= 80 Then

Range("c2").Value = "B Grade"

Else

Range("c2").Value = "A Grade"

End If

End sub

If ElseIf Else with AND operator

(64)

sub IF-Test()

If Range("a2").Value >= 0 And Range("a2").Value < 35 Then

Range("c2").Value = "Fail"

ElseIf Range("a2").Value >= 35 And

Range("a2").Value <= 60 Then

Range("c2").Value = "C Grade"

ElseIf Range("a2").Value >= 61 And

Range("a2").Value < 80 Then

Range("c2").Value = "B Grade"

ElseIf Range("a2").Value >= 80 And

Range("a2").Value <= 100 Then

Range("c2").Value = "A Grade"

Else

Range("c2").Value = "Invalid"

End If

End sub

If Else using For loop

(65)

sub If-else-using - For()

Dim x As Integer

For x=2 To 20

If Cells(x,2).Value >= 35 Then

Cells(x,3).Value = "Pass"

Cells(x,3).Interior.Color = vbGreen

Else

Cells(x,3).Value = "Fail"

Cells(x,3).Interior.Color = vbRed

End If

Next x

End sub

Select Case Statement

(66)

↓
Alternate
multiple
If Else Statement

```
sub select_case_statement()
```

```
Dim var1 AS Integer
```

```
var1 = InputBox("Enter month Number")
```

```
Select Case var1
```

```
Case 1: MsgBox "Month is Jan"
```

```
Case 2: "
```

```
Case 3: "
```

```
Case 4: "
```

```
Case 5: "
```

```
Case 6: "
```

Dec

```
Case 12: "
```

```
Case Else: MsgBox "Invalid month"
```

```
End Select
```

```
End Sub
```

Message Box 1

(67)

```
sub messagebox1()
    msgbox "welcome"
    msgbox 1000
    msgbox #10/12/2020#
end sub.
```

Message Box 2

(68)



```
sub messagebox2()
    msgbox "welcome", 1 => ok cancel
    msgbox "welcome", 2 => Abort Retry Ignore
    msgbox "welcome", 3 => Yes No cancel
    msgbox "welcome", 4 => Yes No
    msgbox "welcome", 5 => Retry cancel
    msgbox "welcome", 6 => OK
    msgbox "welcome", 7 => OK
    msgbox "welcome", 8 => OK
```

msgbox "welcome", vbokcancel

msgbox "welcome", vbretrycancel

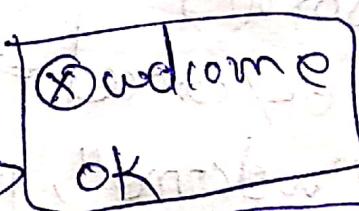
end sub

message Box 3

(69)

sub messagebox3()

msgBox "welcome", 16 =>

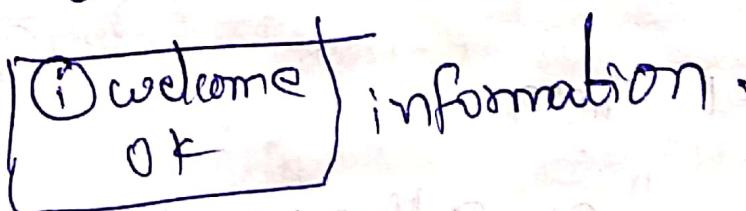
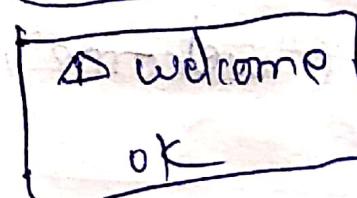


msgBox "welcome", 32 =>



msgBox "welcome", 48 =>

msgBox "welcome", 64 =>



msgBox "welcome", vbcritical => error

msgBox "welcome", vbInformation => info

msgBox "welcome", vbExclamation => warning

msgBox "welcome", vbQuestion => Help

end sub

message Box

(70)

```
sub messageboxu()
    msgBox "welcome", 1
end sub
```

```
sub messageboxu()
    → captures OK/cancel → value of OK is 1
    → captures OK/cancel → value of cancel is 2
    a=msgBox ("welcome", 1)
```

```
msgBox a
```

```
b=msgBox ("welcome", 2) → value of Abort is 3
msgBox b → value of Retry is 4
→ value of Ignore is 5
```

```
if a=1 Then
```

```
    msgBox "OK Button was pressed"
```

```
Else
```

```
    msgBox "Cancel button was pressed"
```

```
End If
```

```
End sub
```

message Box 5

(71)

```
sub messageBox5()
    msgBox "welcome", vbokonly, "ssh" Title
end sub
```

Input Box

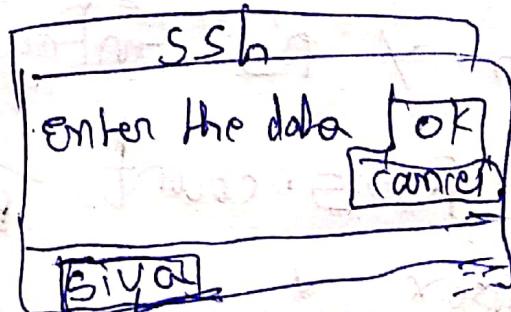
(72)

```
sub inputbox1() //Inputbox is reserved keyword
    a=inputbox ("Enter the data") //If we are
    msgBox a getting ip from a
    function, keep
    ( ) bracket.
```

```
b=inputbox ("Enter the data", "ssh", "Siva")
```

Title Default text

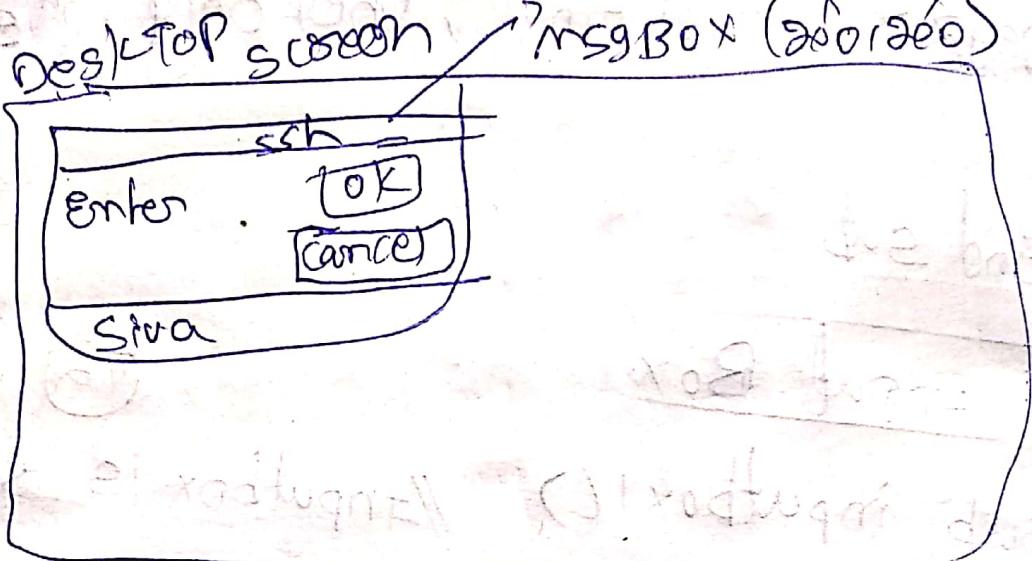
```
msgBox b
```



default text

c = inputbox ("Enter", "SSH", "Siva", 200, 200)
Title ↓ ↓ ↓
Default Text position
position

msgbox c



End Sub

Rows & column Count

(73)

Sub Row-Column-Count()

Row-Item 008 '6'
overflow

Dim x As Integer

Dim y As Integer

x = .Rows.Count But

1018576

MsgBox x

32768

y = Columns.Count

16384

MsgBox y

End Sub

	Five numbers	Five numbers
Integer	-32,768	32,767
Long	-2,147,483,648	2,147,483,647

sub Row-column-count()

Dim x As Long

Dim y As Long

x = Rows.Count

MsgBox x

y = Columns.Count

MsgBox y

End sub

String Functions Left-Right

74

sub String_Functions()

Dim x As Integer

For x = 2 To 8,

Cells(x, 2).Value = Left(Cells(x, 1).Value, 2)

Cells(x, 3).Value = Right(Cells(x, 1).Value, 2)

Next

End sub

Days	Left characters	Right characters
2 monday	mo.	ay
3 Tuesday	TU	ay
4 wednesday	we	ay
5 Thursday	Th	ay
6 Friday	Fr	ay
7 saturday	sa	ay
8 Sunday	Su	ay

Ucase	Lcase
upper	lower
MONDAY	monday
SUNDAY	sunday

String Functions Ucase - Lcase

(75)

Sub Sto-Functions - Ucase - Lcase()

Dim x As Integer

For x = 2 To 8

Cells(x, 2).Value = Ucase(Cells(x, 1).Value)

Cells(x, 3).Value = Lcase(Cells(x, 1).Value)

Next x

End Sub

String Reverse

(76)

Days Reverse

1	monday	yadnom
2	Tuesday	
3	Wednesday	
4	Thursday	
5	Friday	
6	Saturday	
7	Sunday	yadnus

sub Sto_Functions_String(Reverse)

Dim x As Integer

For x=2 To 8

Cells(x,2).Value = StoReverse(Cells(x,1).Value)

Next x

End Sub

Create Functions

(77)

Create a function which will help me to add 2 numbers and those 2 numbers should get output in excel.

sheet is create Function

Function add2Numbers (x AS integer, y AS integer) AS integer
add2Numbers = $x + y$

End Function.

=> In Excel Sheet

=add2Numbers(2,4)

Result 6

O/P

Date Add

(18)

=> Suppose If I want to Add some Number of years, months, days (or) suppose If I want to Add Hours, seconds, minutes to particular date & time. Date Add.

```
sub date1() - Date()
    Dim a As Variant
    a = Date
    MsgBox a
End sub
```

```
sub date2() - Date()
    Dim b As Variant
    b = CDate("20 Dec 2020")
    MsgBox b
End sub
```

```
sub Date3() - DateAdd()
    mydate = #11/80/2016#
    MsgBox mydate
    'adding days, months and year.
```

```
msgBox DateAdd("yyyy", 1, mydate)  
msgBox DateAdd("m", 1, mydate)  
MsgBox DateAdd("d", 1, mydate)
```

'adding hours, minutes and seconds.

```
msgBox DateAdd("h", 1, "31 dec 2020 12:00:00")  
msgBox DateAdd("n", 1, "31 dec 2020 12:00:00")  
msgBox DateAdd("s", 1, "31 dec 2020 12:00:00")
```

End Sub

O/P :-

11/20/2016

11/20/2017

12/20/2016

11/21/2016

12/31/2020 1:00:00pm

12/31/2020 12:01:00 PM

12/31/2020 12:00:01 PM

Date part

sub dateU - DatePart()

Dim mydate As Variant

mydate = #12/20/2016#

msgBox mydate

msgBox DatePart("yyyy", mydate) displays year

msgBox DatePart("d", mydate) displays day

msgBox DatePart("m", mydate) displays month

msgBox DatePart("q", mydate) displays quarter

End sub

O/P :- 12/20/2016

2016

20

12

4

DD/mm/yyyy

(80)

sub dates_day_month_year()

Dim mydate As variant

mydate = #12/20/2020#

O/P - 12/20/2020

msgBox mydate

msgBox Day (mydate)

msgBox Month (mydate)

msgBox Year (mydate)

end Sub

Dates

(81)

sub date1 Date()

Dim a As variant

a = Date \Rightarrow Today's Date

O/P - 09/05/2018 -
11/24/2016

msgBox a

end sub

sub date2_date() → convert to date.

Dim b as variant

b = cdate("20 Dec 2020")

msgbox b o/p - 12/20/2020

end sub

Time Function part

sub time_now_time()

msgbox now() displays date and time

msgbox time() displays only time

msgbox hour(time) displays hour \Rightarrow au format

msgbox minute(time) displays minute

msgbox second(time) displays seconds

msgbox hour("3:10:13") displays 3

msgbox minute("3:10:13") displays 10

msgbox second ("3:10:13") displays 13

End sub

Time function part 2

(23)

sub time_timeSerial(timeValue)

seconds & minutes & hours

msgBox TimeSerial(3, 4, 5) => Hours & Minutes & seconds

msgBox TimeSerial(12, 59, 59) =>

hours & minutes

msgBox TimeValue("12:19") => hours & minutes & seconds

msgBox TimeValue("3:10:10") => hours & minutes & seconds

msgBox TimeValue("2:10:08") =>

End Sub

O/P:- 3:04:05 AM

12:59:59 PM

8:19:00 PM

3:10:10 AM

2:10:08 AM

1D Array static

sub static - 1D-Array - Example()

Dim marks(3) As Integer

marks(0) = 10

marks(1) = 20

marks(2) = 30

marks(3) = 55

For i=0 To 3

msgBox marks(i)

Next

End sub

O/P: - 10
20
30
55

Spare
already.

2D Array static

1D Array		2D Array			
10		80	30	40	50
80		30	40	50	
30		40	50	60	
40		50	60	70	
50		60	70	80	

Either columns
or rows
only one
direction.

(*)

84

(*)

85

	columns				
R	0	1	2	3	
0	0	10	20	30	40
W	1	20	30	40	50
S	2	30	40	50	60
3	40	50	60	70	80
4	50	60	70	80	



How does VB understands 2D Array

$$a[1,1] = 30$$

$$a[2,2] = 50$$

$$a[0,2] = 30$$

Sub static_2D_Array_Example()

Dim a(2,2) As Integer

$$a(0,0) = 10$$

$$a(0,1) = 20$$

$$a(0,2) = 30$$

$$a(1,0) = 40$$

$$a(1,1) = 50$$

$$a(1,2) = 60$$

$$a(2,0) = 70$$

$$a(2,1) = 80$$

$$a(2,2) = 90$$

for $i=0$ to 2

for $j=0$ to 2

msgBox $a(i,j)$

next

next

end sub

O/P :-

10
20
30
40
50
60
70
80
90

Dynamic Array

(26)

```
Sub UsingRedim()
```

```
Dim a(2) As Integer
```

```
a(0) = 10
```

```
a(1) = 20
```

```
a(2) = 30
```

Stair Array

```
MsgBox a(0)
```

```
MsgBox a(1)
```

```
MsgBox a(2)
```

```
End Sub
```

```
Sub UsingRedim()
```

```
Dim a(3) As Integer
```

\Rightarrow Redimensioning (Another size of Array)

```
ReDim a(2)
```

```
a(0) = 10
```

```
a(1) = 20
```

```
a(2) = 30
```

ReDim arr) \Rightarrow The values which are earlier in the array will be wiped off.
So if we want previous values use preserve also.
wrong practice
right practice.

ReDim preserve arr)

MsgBox arr(0)

MsgBox arr(1)

MsgBox arr(2)

End Sub

worksheet selection change

(87)

Event: Any occurrence (e.g.) Any change in your worksheet, may be you do something else. Let say, you open the worksheet, close the worksheet, open the workbook, close the workbook, or do we change some cells from here & there. Any

changes or any triggering event will create some Action so that is the Event Topic.

⇒ The selected cell colors must change.
Developer → Visual Basic → And I have 3 sheets → sheet1 → which sheet do we want to work, which sheet do we want this event to occur, if I say I want to create in the sheet1, Just Double click on the sheet1 → You are in the code itself.

(General) ↓ | sheet1
selection_change ↓ we can change worksheet → select here

you will get sub procedure.

`private sub worksheet_selectionchange`
↓
`(ByVal Target As Range)`

`{It will work only in this sheet}`

If there is any selection change
in the worksheet, what should happen, that
thing will come inside this.

// The color of the cell should change, and we
already know how to change the color cell.
i.e., `Interior.Color` and we have to give the
color Name - But here what we can do is

something new

`Target.Interior.Color = vbRed`

wherever I click (or) select that thing
should be colored into red background

~~End sub~~

Now I want to change the font color in the particular sheet.

Target.Font.Color = vbYellow

End sub

Double click

Sheet2

(88)

Private sub Worksheet_BeforeDoubleClick

(ByVal Target As Range, Cancel As Boolean)

Target.Interior.Color = vbGreen

MsgBox "You have clicked twice"

End sub

Sheet Activation

(89)

Sheet3

```
private sub worksheet_Activate()
    
```

```
    msgBox "welcome to the Sheet3"
```

end sub

o/p:- whenever sheet3

open's, we will
get welcome msg.

workbook open

(90)

Developer → visualBasic → Double click on
This workbook

```
private sub Workbook_Open()
```

```
    msgBox "welcome to Events"
```

end sub.



private sub Workbook_Open()

a = inputbox ("enter the password")

if a=123 Then

msgBox "welcome"

Else

msgBox "incorrect password"

ThisWorkbook · save

- ThisWorkbook · close

end if

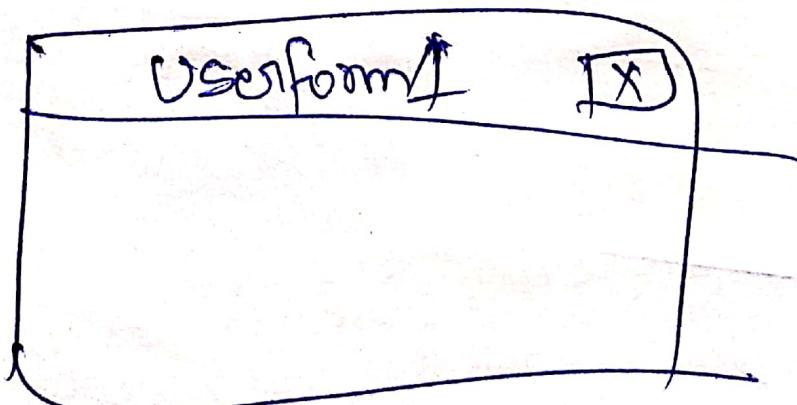
End sub

Create User Form

(91)

Developer → visual Basic →

Insert → UserForm



⇒ click on UserForm1 and see properties Tab.
caption : welcome screen.

Run.

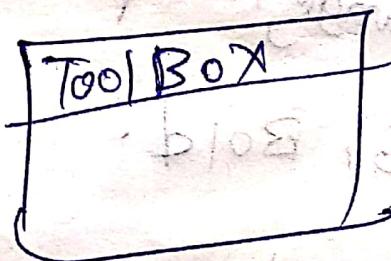
BackColor : choose one color.

height : 300

width : 300

ToolBox used to add some Tools to your form,
like radio Button, check Box, Buttons,
frames & so on

View → ToolBox



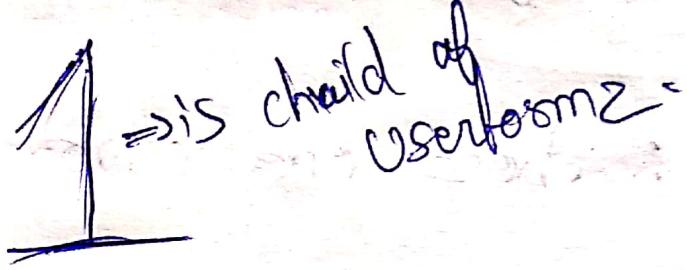
Command Button

Insert → UserForm.

Q2

Userforms / Calculation

17



Add

SUB

⇒ press ctrl and use mouse to drag this one.

Properties

⇒ Label ⇒ change in values properties

⇒ Font : 36, Bold

(ctrl + C & ctrl + V)
works

⇒ TextAlign : Center

ToolBox - Button

Properties

⇒ Caption : Add

⇒ Font : 36, Bold

Double click on Add Button and come to code.

private sub CommandButton1_Click()

UserForm2.Label1.Caption = UserForm2.Label1.Caption +

End Sub

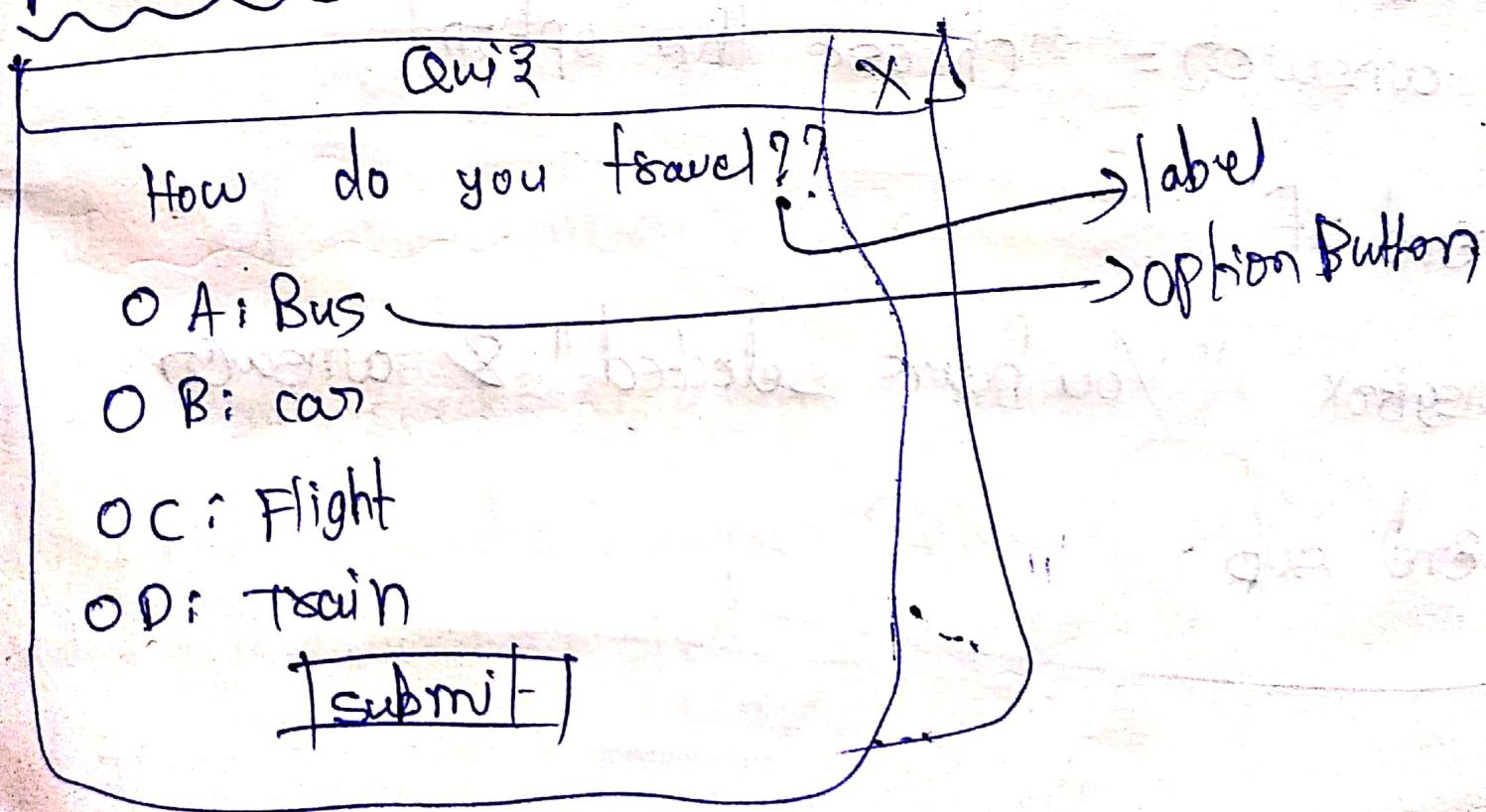
private sub CommandButton2_Click()

UserForm2.Label1.Caption = UserForm2.Label1.Caption - 1

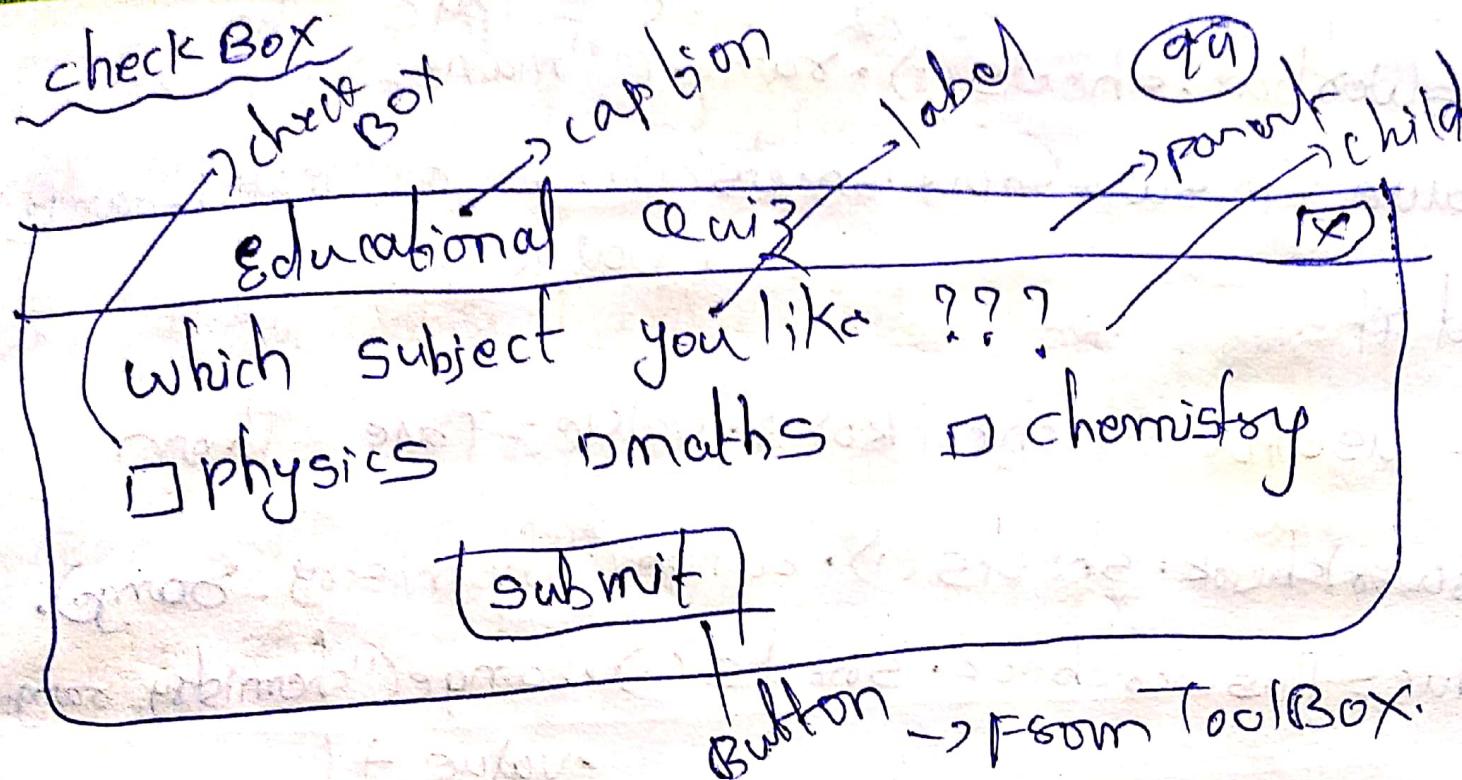
End Sub

Radio Button

(q3) code below radio -



```
private sub CommandButton1_Click()
Dim answer As string
If UserForm3.OptionButton1.value = True Then
    answer = "Bus"
ElseIf UserForm3.OptionButton2.value = True Then
    answer = "Car"
ElseIf UserForm3.OptionButton3.value = True Then
    answer = "Train"
Else
    answer = "choose the option"
End If
msgBox "You have selected" & answer
End sub
```



physics maths chemistry

physics - Range maths - range chemistry - range

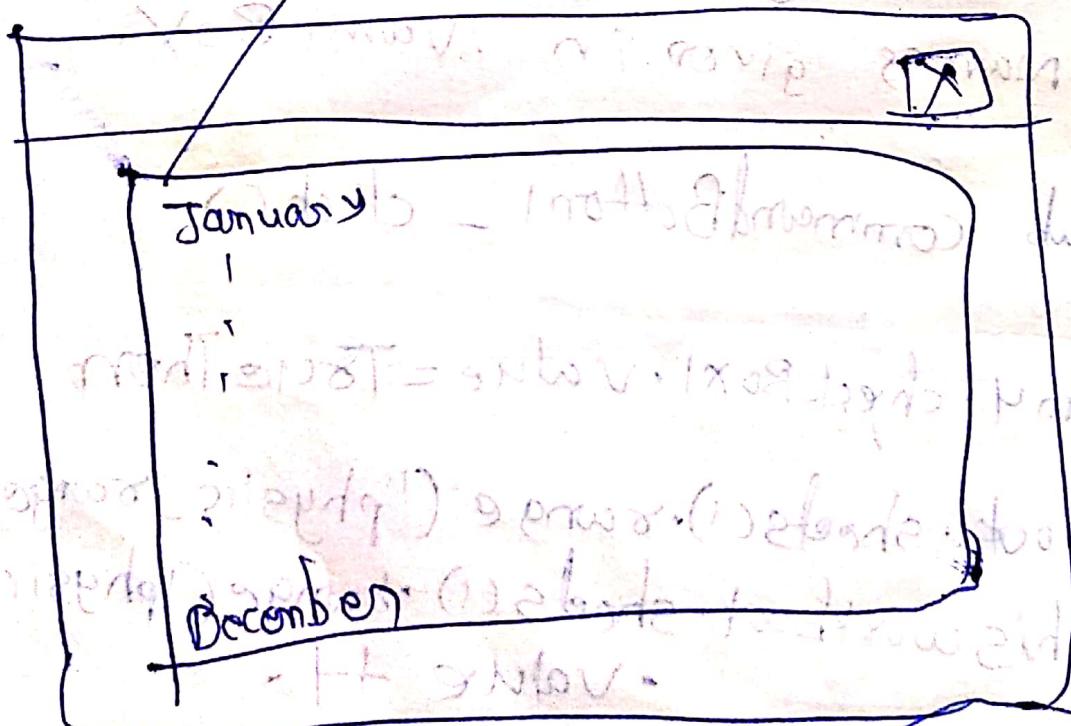
Names given in NameBox.

```
private sub commandButton1 - click()
```

```
if userform4.checkBox1.value = True Then  
    thisworkbook.sheets(i).range("physics_range").  
    value = thisworkbook.sheets(i).range("physics_range")  
    .value + 1  
End If
```

```
If userform4.checkbox2.value = True Then  
    ThisWorkbook.sheets(1).range("maths_range")  
        value = ThisWorkbook.sheets(1).range("maths_range")  
            .value + 1  
End If  
If userform4.checkbox3.value = True Then  
    ThisWorkbook.sheets(1).range("chemistry_range")  
        value = ThisWorkbook.sheets(1).range("chemistry_range")  
            .value + 1  
End If  
End Sub
```

List Box → listBox



Properties

RawSource : sheet1!A1:a2

private sub listBox1_Dblclick (ByVal cancel As
msforms.ReturnBoolean)

msgBox userforms(listBox1).Value

EndSub

Frames

⇒ Frames are basically used to collect all the different options like CheckBox, RadioButton, Button, listBox, into one compartment.

(16)

Frame

Show/Hide



checkbox1

checkbox2

checkbox3

CommandButton1

```
private sub CommandButton2_Click()
```

```
userform6.form1.Visible = False
```

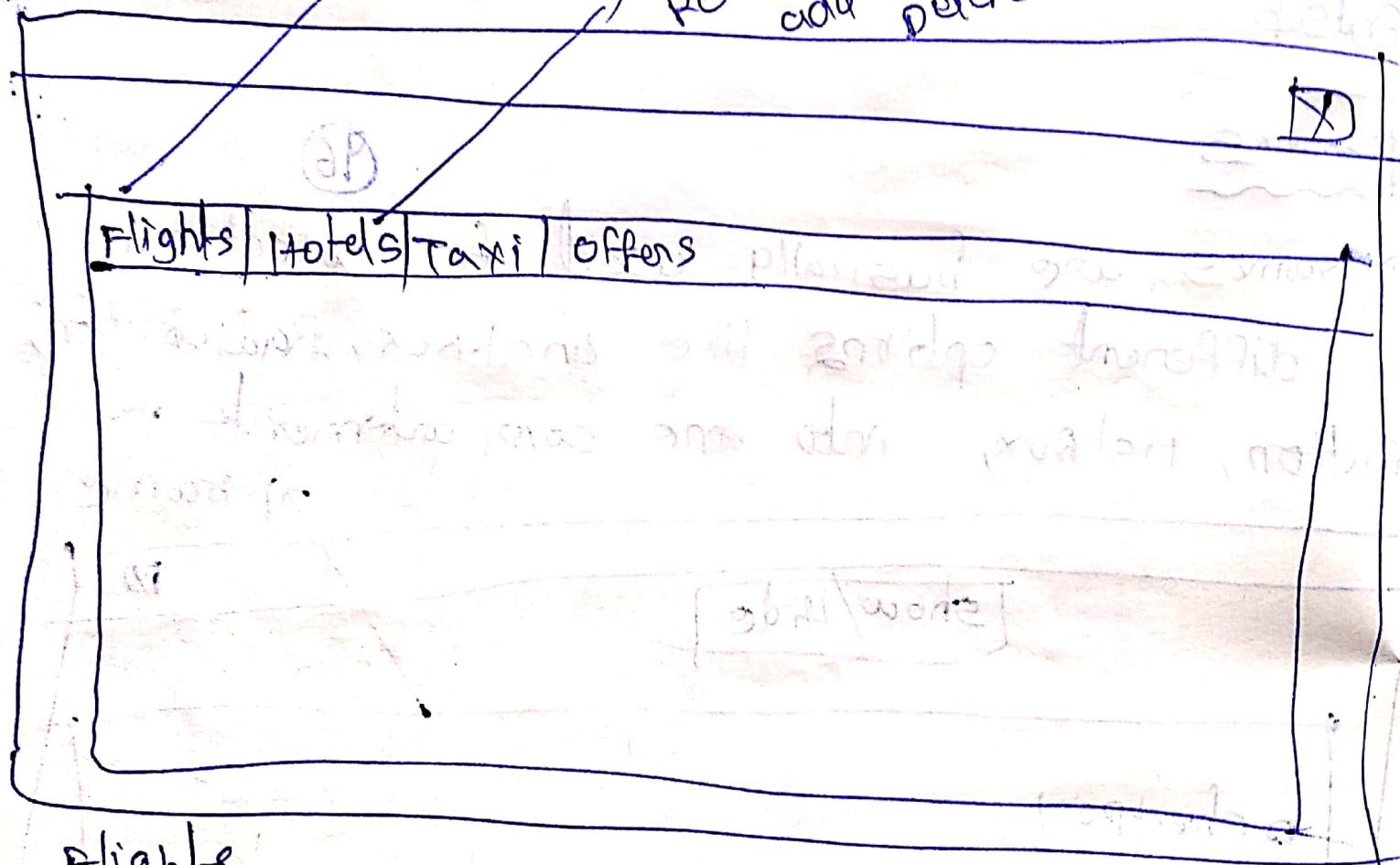
```
userform6.frames(0).Visible
```

```
End Sub
```

multipage

multipage

Right click and
Rename & Page | ⑦
add page | ⑧
Delete Page



Flights

(Flight Information)

0

\$ 2000

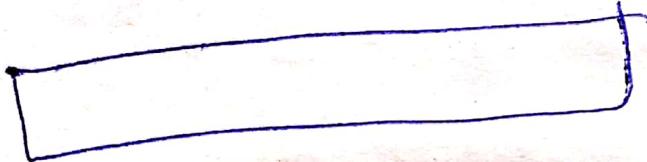
\$ 3000

\$ 4000

\$ 5000

\$ 6000

hotels



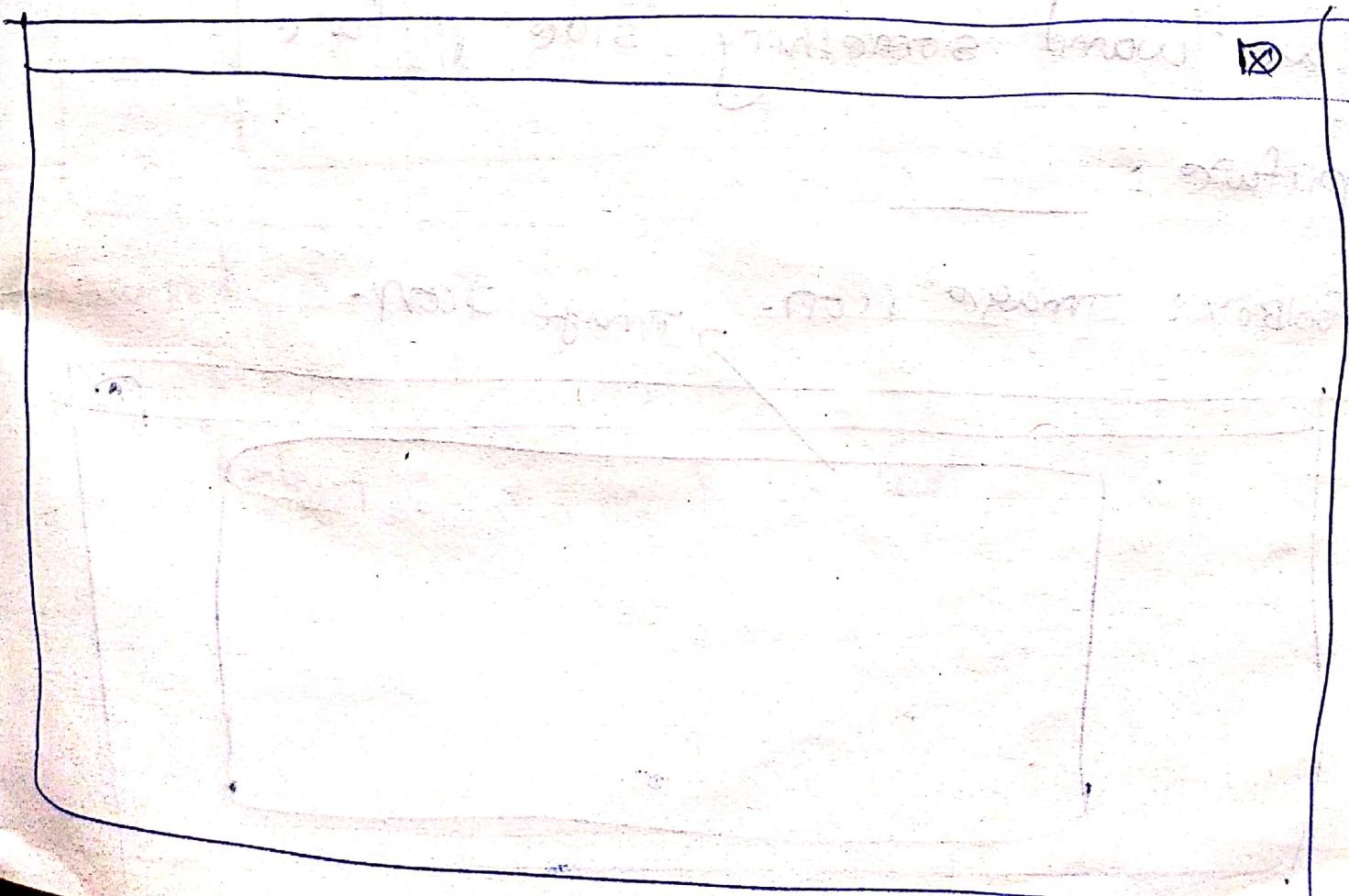
commandButton1

Taxi



Background

92



Properties of
Aphabetic | categorized

→ picture

picture : Browse.

pictureAlignment : select position.

pictureSizeMode : select no. of max pictures.

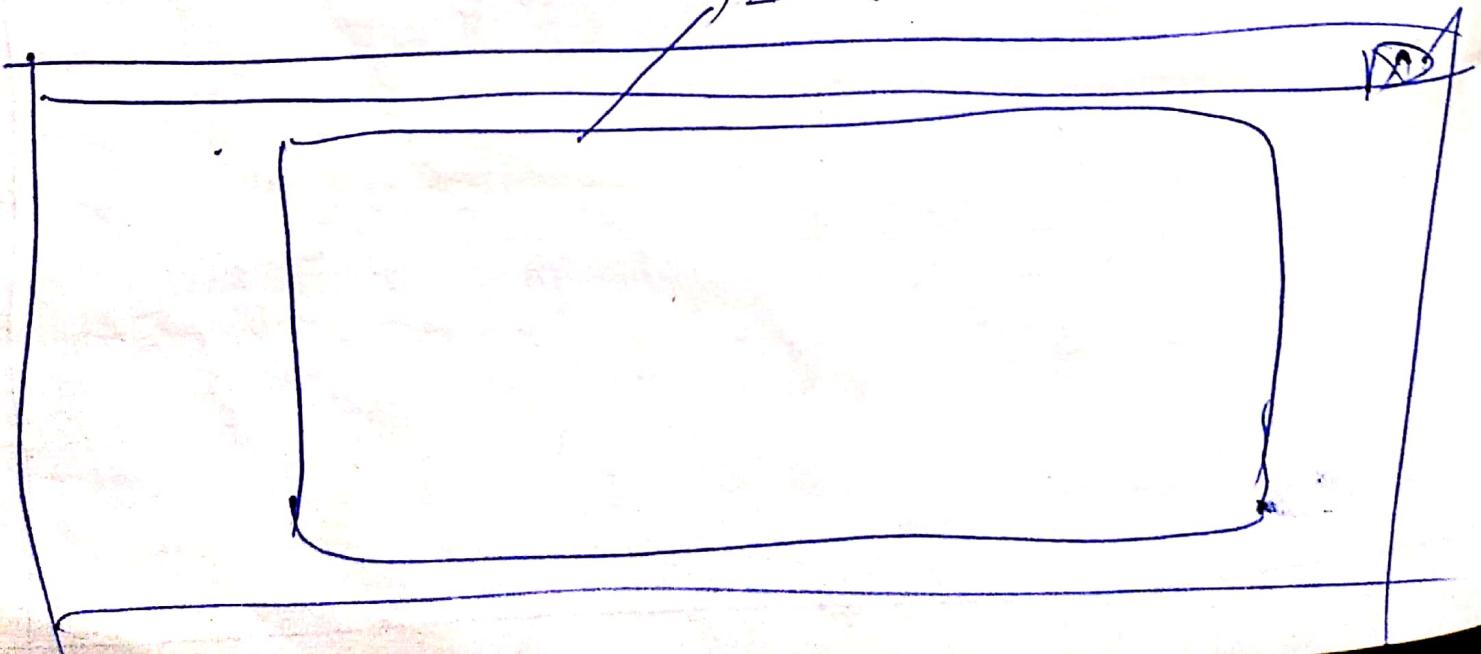
pictureTiling : True

Empty space will fill with
same picture.

→ Suppose we do not want a Background,
we want something side picture.

picture : _____

ToolBox: Image icon - → Image icon -



Properties

categorized

→ picture : Browse

text Box

99

Login page

Username

password

ok

cancel

⇒ Password TextBox

⇒ properties

passwordChar : * → TYPE

```
private sub CommandButton1_Click()
    Username = UserForm9.TextBox1.Value
    Password = UserForm9.TextBox2.Value
    If Username <> "" And Password <> "" Then
        MsgBox "Login Success"
        UserForm9.Hide
    Else
        MsgBox "Kindly enter the credentials"
    End If
End Sub
```

User Form Event

Insert → Module

```
Sub Call_UserForm()
```

```
UserForm9.Show
```

```
End Sub
```

(100)

In excel sheet

Insert → shapes →



right click and

Assign Macro

call userform macro

→ OK →

→ Now click outside

→ Now click on shape we will get Userform

Userform

else if edit box

environ = Environ("VBScript")

"UserForm1" = environ("Caption")

"Close" = environ("Caption")

"Cancel" = environ("Caption")