



DEPARTMENT OF INFORMATION TECHNOLOGY
CENTRE FOR DIPLOMA STUDIES

**DAT 20903 PRINCIPLE OF DOT NET
PROGRAMMING
PROBLEM BASED TASK**

| *SERIES NUMBER | <input type="checkbox"/> PBT 1 | <input type="checkbox"/> PBT 2 | <input checked="" type="checkbox"/> PBT 3 | <input type="checkbox"/> PBT 4 |
|---------------------------|--|--------------------------------|---|--------------------------------|
| TITLE | INTERACTIVE VB APPLICATION DEVELOPMENT | | | |
| QUESTION | Volume of Geometric Shapes | | | |
| DATELINE | | | | |
| YEAR AND PROGRAM | 2 DAT | | | |
| STUDENTS DETAIL | STUDENT NAME | MATRIX NO | SECTION | |
| | 1. NUR RASYIDAH BINTI ROSLAN | AA162233 | 1 | |
| | 2. NUR HIDAYAH BINTI HAMRI | AA160553 | 1 | |
| | 3. NORSYAZWANIE BINTI NORMAZALI | AA162269 | 1 | |
| TOTAL MARKS | | | | |
| LECTURER COMMENTS: | | | | |

*Notes: 1. *Please tick “√” at the appropriate box
2. Use blue paper for odd section and pink for even section*

Table of Content

| Content | Pages |
|--|---------------|
| Role of group members | 1 |
| Phase 1 :Analyze 1.1 List of input or data to be entered 1.2 List of desired output or results 1.3 List of required process to obtain the output | 2 2 2 |
| Phase 2: Design 2.1 Sketch of Graphical User Interface (GUI) 2.2 List basic properties of each object used in the GUI 2.3 Algorithm for each required events as require action to be taken | 3 4 4-5 |
| Phase 3: Implement 3.1 Graphical User Interface (GUI) 3.2 Properties setting of each object used in the GUI 3.3 Program code to carry out the actions needed by the applications. | 5 6 7 |
| Rubric | 8 |

Role of group Member

| Member's name | Role |
|----------------------|---|
| 1) NORSYAZWANIE | Complete Phase 1 and Phase 2 (analyze and design) |
| 2) NUR RASYIDAH | Complete Phase 3(Implementation) |
| 3) NUR HIDAYAH | Complete a Report |

Phase 1 :Analyze

1.1 List of **input** or data to be entered:

Volume of Cylinder

- Radius
- Height

Volume of Cone

- Radius
- Height

Volume of Pyramid

- Radius
- Height
- Length

1.2 List of desired **output** or results:

- Volume of Cylinder
- Volume of Cone
- Volume of Pyramid

1.3 List of required **process** to obtain the output:

Volume of Cylinder

- $3.142 \times \text{radius}^2 \times \text{height}$

Volume of Cone

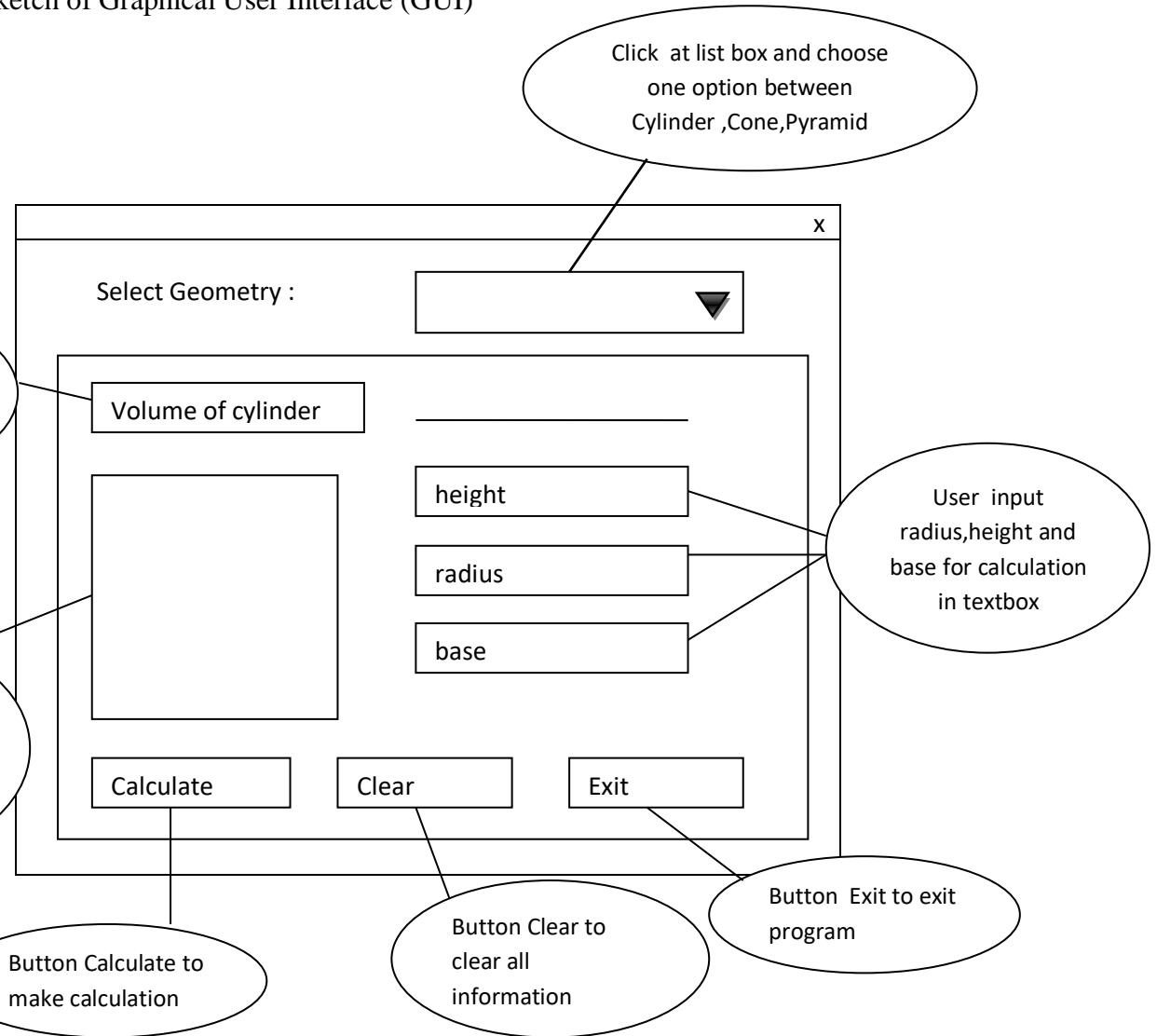
- $3.142 \times \text{radius}^2 \times \text{height} / 3$

Volume of Pyramid

- $(\text{Base}^2 \times \text{height}) / 3$

Phase 2 : Design

2.1 Sketch of Graphical User Interface (GUI)



2.2 List basic properties of each object used in the GUI

| Object | Properties |
|-----------|--|
| Form 1 | Name : frmGeometric |
| Label 1 | Name: lblGeo Text: Select Geometry : |
| Label 2 | Name: lblGeoName Text : Volume of Cylinder/Cone/Pyramid |
| Label 3 | Name:lblJawapan |
| Combo box | Name: cboGeo |
| Textbox1 | Name: txtheight |
| Textbox2 | Name : txtradius |
| Textbox3 | Name : txtbase |
| Button 1 | Name: btnCal Text: Calculate |
| Button 2 | Name: btnClear Text: Clear |
| Button 3 | Name: btnExit Text: Exit |

2.3 Algorithm for each required events as require action to be taken

2.3.1) In The FrmGeometric :

2.3.1.1)EventClick For btnCal

Volume of Cylinder

- $3.142 \times \text{radius}^2 \times \text{height}$

Volume of Cone

- $3.142 \times \text{radius}^2 \times \text{height} / 3$

Volume of Pyramid

- $(\text{Base}^2 \times \text{height}) / 3$

2.3.1.2) EventClick For btnClear

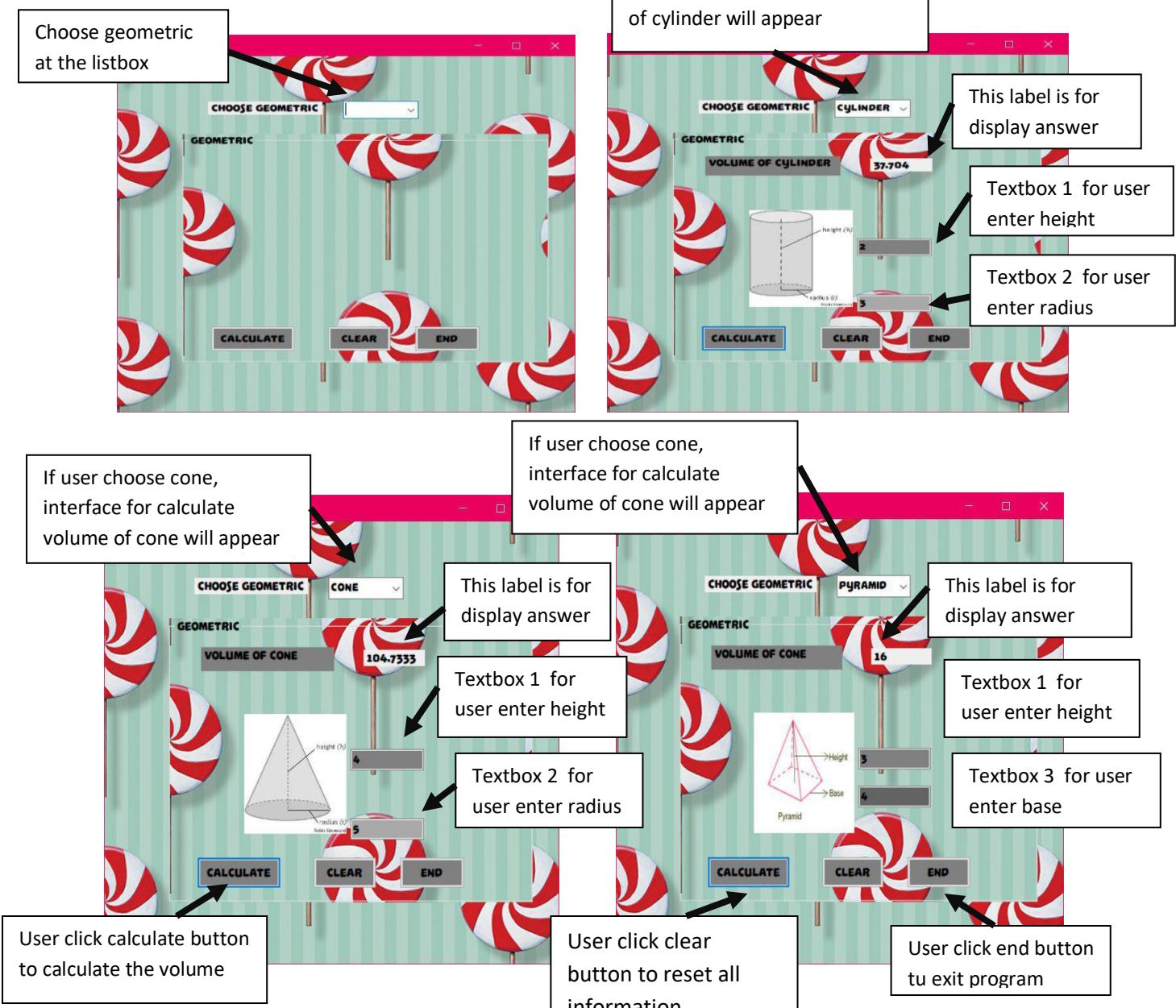
- Clear the calculation using Clear method

2.3.1.3) EventClick For btnExit

- Exit The program using Close method

Phase 3: Implement

3.1 Graphical User Interface (GUI)



3.2Properties setting of each object used in the GUI

| Object | Properties | Setting |
|-----------|--------------------------------------|---|
| Form 1 | Name : Background color: | frmGeo candyollipop |
| Label 1 | Name : Text: Background color: | lblGeo Choose Geometry : Light grey |
| Label 2 | Name: Text: Background color: | lblGeoName Volume of Cylinder/Cone/Pyramid grey |
| Label 3 | Name: Background color: | lblJawapan light grey |
| Combo box | Name: | cboGeo |
| Textbox1 | Name: | txtHeight |
| Textbox2 | Name: | txtRadius |
| Textbox3 | Name: | txtBase |
| Button 1 | Name: Text: Background color: | Calculate btnCal grey |
| Button 2 | Name: Text: Background color: | Clear btnClear grey |
| Button 3 | Name: Text: Background color | Exit btnExit grey |

3.3 Program code to carry out the actions needed by the applications.

pb3 - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Form1.vb [Design] Form1.vb [Design]

pb3

```


Public Class Form1
    Const doublePI As Double = 3.142
    Dim doubleHeight As Double
    Dim doubleRadius As Double
    Dim decBase As Decimal
    Dim strGeoName As String

    Sub Assign()
        doubleHeight = txtHeight.Text
        doubleRadius = txtRadius.Text
        decBase = txtBase.Text
    End Sub

    Private Sub cboGeo_SelectedIndexChanged(sender As Object, e As EventArgs) Handles cboGeo.SelectedIndexChanged
        strGeoName = cboGeo.Text
        Select Case strGeoName

            Case "Cylinder"
                PictureBox1.Image = My.Resources.pb11
                lblGeoName.Text = "Volume of Cylinder"
                txtHeight.Visible = True
                txtRadius.Visible = True
                txtBase.Visible = False
                lblGeoName.Visible = True
                lbljwopen.Visible = True
                PictureBox1.Visible = True

            Case "Cone"
                PictureBox1.Image = My.Resources.pb12
                lblGeoName.Text = "Volume of Cone"
                txtHeight.Visible = True
                txtRadius.Visible = True
                txtBase.Visible = False
                lblGeoName.Visible = True
                lbljwopen.Visible = True
                PictureBox1.Visible = True

            Case "Pyramid"
                PictureBox1.Image = My.Resources.pb13
                lblGeoName.Text = "Volume of Cone"
                txtHeight.Visible = True
                txtRadius.Visible = False
                txtBase.Visible = True
                lblGeoName.Visible = True
                lbljwopen.Visible = True
                PictureBox1.Visible = True

        End Select
    End Sub


```

75% Ready Ln 55 Col 1 Ch 1 INS Add to Source Control

pb3 - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Form1.vb [Design] Form1.vb [Design]

pb3

```


    End Select
    End Sub

    'calculate geometry
    Private Sub btnCal_Click(sender As Object, e As EventArgs) Handles btnCal.Click
        If strGeoName = "Cylinder" Then
            Call Assign()
            txtBase.Visible = False
            lbljwopen.Text = doublePI * (doubleHeight ^ 2) * doubleRadius
        ElseIf strGeoName = "Cone" Then
            Call Assign()
            txtBase.Visible = False
            lbljwopen.Text = doublePI * (doubleRadius ^ 2) * (doubleHeight / 3)
        ElseIf strGeoName = "Pyramid" Then
            Call Assign()
            txtBase.Visible = False
            Call Assign()
            lbljwopen.Text = (decBase ^ 2 * doubleHeight) / 3
        End If
    End Sub

    Private Sub btnNext_Click(sender As Object, e As EventArgs) Handles btnNext.Click
        End Sub
    End Sub

    Private Sub btnClear_Click(sender As Object, e As EventArgs) Handles btnClear.Click
        lblGeoName.Text = ""
        cboGeo.Text = ""
        lbljwopen.Text = ""
        PictureBox1.ResetText()
        txtHeight.Clear()
        txtBase.Clear()
        txtRadius.Clear()
    End Sub
End Class


```

75% Ready Ln 55 Col 1 Ch 1 INS Add to Source Control

| Psychomotor Rubric | | | | | |
|---|--|--|--|------------------------------------|-------|
| Criteria | Beginning (1) | Needs improvement (2) | Acceptable (3) | Accomplished (4) | Score |
| <ul style="list-style-type: none"> Ability to choose suitable controls for input and output in the GUI which align with the Phase 1 and Phase 2. Radio Buttons/ ComboBox/ List Box is used to a user making a choice.(P1) | Able to accomplish. But, some incorrect or not clear | Able to accomplish correctly but confusing | Able to accomplish correctly and clearly | Able to accomplish extraordinarily | |
| <ul style="list-style-type: none"> Ability to show descriptive name of object or variables used with correct prefix conversion (P2) | Able to accomplish. But, some incorrect | Able to accomplish correctly but confusing | Able to accomplish correctly and clearly | Able to accomplish extraordinarily | |
| <ul style="list-style-type: none"> Ability to respond the suitable event or procedures with efficient steps (algorithms) in order to get the desire output successfully. Calling sub and function procedures are written efficiently. (P3) | Able to accomplish. But, some incorrect | Able to accomplish correctly but confusing | Able to accomplish correctly and clearly | Able to accomplish extraordinarily | |
| <ul style="list-style-type: none"> Ability to reproduce a program code to implement each events efficiently and align with the algorithm written in Phase 2. Variable, constants, sub and functions procedure are define correctly. Selection control structure is implemented in the program code (P3) | Able to accomplish. But, some incorrect | Able to accomplish correctly but confusing | Able to accomplish correctly and clearly | Able to accomplish extraordinarily | |
| <ul style="list-style-type: none"> Ability to display/construct an interactive program unique and creatively with user convenient feature without any error (P4) | Able to accomplish. But, some incorrect | Able to accomplish correctly but confusing | Able to accomplish correctly and clearly | Able to accomplish extraordinarily | |
| Total(20marks) | | | | | |

