



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING

SESSION 2020/2021 SEMESTER 1

SECJ 1013 - 08

PROGRAMMING TECHNIQUE I

ASSIGNMENT 2

CASE STUDIES 12 (GROUP 09)

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1. Start
2. Do
 - 2.1 Display message "Please enter any positive value (V)"
 - 2.2 Read Value
 - 2.3 if (Value <= 0)
 - 2.3.1 Display message "You have entered invalid value"
 - 2.4 end if
3. While (Value <= 0)

```
do{
    cout << "Please enter any positive value (V)" << endl;
    cin >> Value;

    if (Value <= 0)
        cout << "You have entered invalid value" << endl;

}while (Value <= 0);
```

4. if (Value == (int) Value)
 - 4.1 if ((Value > 0) && (Value < 100))
 - 4.1.1 Display message "Type : 2"
 - 4.1.2 Display message "Diagnostic Test : Fasting Plasma glucose (FPG)"
 - 4.1.3 Display message "Status : Normal"

```
if (Value == (int) Value) {
    if ( (Value > 0) && (Value < 100)){
        cout <<"Type : 2\n" ;
        cout <<"Diagnostic Test : Fasting Plasma glucose (FPG)\n" ;
        cout <<"Status : Normal\n" ;
    }
}
```

- 4.2 Else if ((Value ≥ 100) && (Value <125))
 - 4.2.1 Display message "Type : 2"
 - 4.2.2 Display message "Diagnostic Test : Fasting Plasma glucose (FPG)"
 - 4.2.3 Display message "Status : Prediabetes"
 - 4.2.4 Calculate ReduceToNor = Value – 99
 - 4.2.5 Display message "Amount of value to reduce to Normal State : " + ReduceToNor

```
else if ( (Value >= 100) && (Value < 125)){
    cout <<"Type : 2\n" ;
    cout <<"Diagnostic Test : Fasting Plasma glucose (FPG)\n" ;
    cout <<"Status : Prediabetes\n\n" ;
    ReduceToNor = Value - 99 ;
    cout <<"Amount of value to reduce to Normal State : " << ReduceToNor << endl;
}
```

- 4.3 Else if ((Value ≥ 125) && (Value < 140))

- 4.3.1 Display message “Type : 2”
- 4.3.2 Display message “Diagnostic Test : Fasting Plasma glucose (FPG)”
- 4.3.3 Display message “Status : Diabetes”
- 4.3.4 Calculate $\text{ReduceToNor} = \text{Value} - 99$
- 4.3.5 Display message “Amount of value to reduce to Normal State : “ + ReduceToNor
- 4.3.6 Calculate $\text{ReduceToPre} = \text{Value} - 124$
- 4.3.7 Display message “Amount of value to reduce to Prediabetes State : “ + ReduceToPre
- 4.3.8 Display message “Type : 3”
- 4.3.9 Display message “Diagnostic Test : Oral glucose tolerance test (OGTT)”
- 4.3.10 Display message “Status : Normal”

```
else if ( (Value >= 125) && (Value < 140)){
    cout <<"Type : 2\n" ;
    cout <<"Diagnostic Test : Fasting Plasma glucose (FPG)\n" ;
    cout <<"Status : Diabetes\n\n" ;
    ReduceToNor = Value - 99 ;
    cout <<"Amount of value to reduce to Normal State : " << ReduceToNor << endl;
    ReduceToPre = Value - 124;
    cout << "Amount of value to reduce to Prediabetes State : " << ReduceToPre << endl << endl;
    cout <<"Type : 3\n" ;
    cout <<"Diagnostic Test : Oral glucose tolerance test(OGTT)\n" ;
    cout <<"Status : Normal\n" ;
}
```

- 4.4 Else if ($\text{Value} \geq 140$) && ($\text{Value} < 200$)
 - 4.4.1 Display message “Type : 3”
 - 4.4.2 Display message “Diagnostic Test : Oral glucose tolerance test (OGTT)”
 - 4.4.3 Display message “Status : Prediabetes”
 - 4.4.4 Calculate $\text{ReduceToNor} = \text{Value} - 139$
 - 4.4.5 Display message “Amount of value to reduce to Normal State : “ + ReduceToNor

```
else if ( (Value >= 140) && (Value < 200)){
    cout <<"Type : 3\n" ;
    cout <<"Diagnostic Test : Oral glucose tolerance test(OGTT)\n" ;
    cout <<"Status : Prediabetes\n\n" ;
    ReduceToNor = Value - 139 ;
    cout <<"Amount of value to reduce to Normal State : " << ReduceToNor << endl;
}
```

- 4.5 Else if ($\text{Value} \geq 200$)
 - 4.5.1 Display message “Type : 3”
 - 4.5.2 Display message “Diagnostic Test : Oral glucose tolerance test (OGTT)”
 - 4.5.3 Display message “Status : Diabetes”
 - 4.5.4 Calculate $\text{ReduceToNor} = \text{Value} - 139$
 - 4.5.5 Display message “Amount of value to reduce to Normal State : “ + ReduceToNor
 - 4.5.6 Calculate $\text{ReduceToPre} = \text{Value} - 199$

- 4.5.7 Display message “Amount of value to reduce to Prediabetes State : “ + ReduceToPre

4.6 End if

```
else if ( (Value >= 200) ){
    cout <<"Type : 3\n" ;
    cout <<"Diagnostic Test : Oral glucose tolerance test (OGTT)\n" ;
    cout <<"Status : Diabetes\n\n" ;
    ReduceToNor = Value - 139 ;
    cout <<"Amount of value to reduce to Normal State : " << ReduceToNor << endl;
    ReduceToPre = Value - 199;
    cout <<"Amount of value to reduce to Prediabetes State : " << ReduceToPre << endl;
}
}
```

5. else if (Value == (float) Value)

5.1 Display message “Type : 1”

5.2 Display message “Diagnostic Test : Hemoglobin A1C (HbA1C)”

5.3 If ((Value > 0) && (Value < 5.7))

5.3.1 Display message “Status : Normal”

```
else if (Value == (float) Value) {
    cout << "Type : 1\n";
    cout << "Diagnostic Test : Hemoglobin A1C (HbA1C)\n";

    if ( (Value > 0) && (Value < 5.7) )
        cout <<"Status : Normal\n" ;
}
```

5.4 Else if ((Value ≥ 5.7) && (Value < 6.5))

5.4.1 Display message “Status : Prediabetes”

5.4.2 Calculate ReduceToNor = Value – 5.69

5.4.3 Display message “Amount of value to reduce to Normal State : “ + ReduceToNor

```
else if ( (Value >= 5.7) && ( Value < 6.5 )) {
    cout << "Status : Prediabetes\n\n";
    ReduceToNor = Value - 5.69 ;
    cout <<"Amount of value to reduce to Normal State : " << ReduceToNor << endl;
}
```

5.5 Else if (Value ≥ 6.5)

5.5.1 Display message “Status : Diabetes”

5.5.2 Calculate ReduceToNor = Value – 5.69

5.5.3 Display message “Amount of value to reduce to Normal State : “ + ReduceToNor

5.5.4 Calculate ReduceToPre = Value – 6.49

5.5.5 Display message “Amount of value to reduce to Prediabetes State : “ + ReduceToPre

5.6 End if

6. End if

```
else if (Value >= 6.5) {  
    cout << "Status : Diabetes\n\n";  
    ReduceToNor = Value - 5.69;  
    cout << "Amount of value to reduce to Normal State : " << ReduceToNor <<  
endl;  
    ReduceToPre = Value - 6.49;  
    cout << "Amount of value to reduce to Prediabetes State : " << ReduceToPre  
<< endl ;  
    }  
}
```

7. End