



Lecture (05)

Branching and decision making II

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Switch case

- Decision making are needed when, the program encounters the situation to choose a particular statement among many statements.

```
switch (n) {  
  case constant1:  
    code/s to be executed if n equals to  
    constant1;  
    break;  
  case constant2:  
    code/s to be executed if n equals to  
    constant2;  
    break;  
  .  
  .  
  .  
  default:  
    code/s to be executed if n doesn't match  
    to any cases;  
}
```

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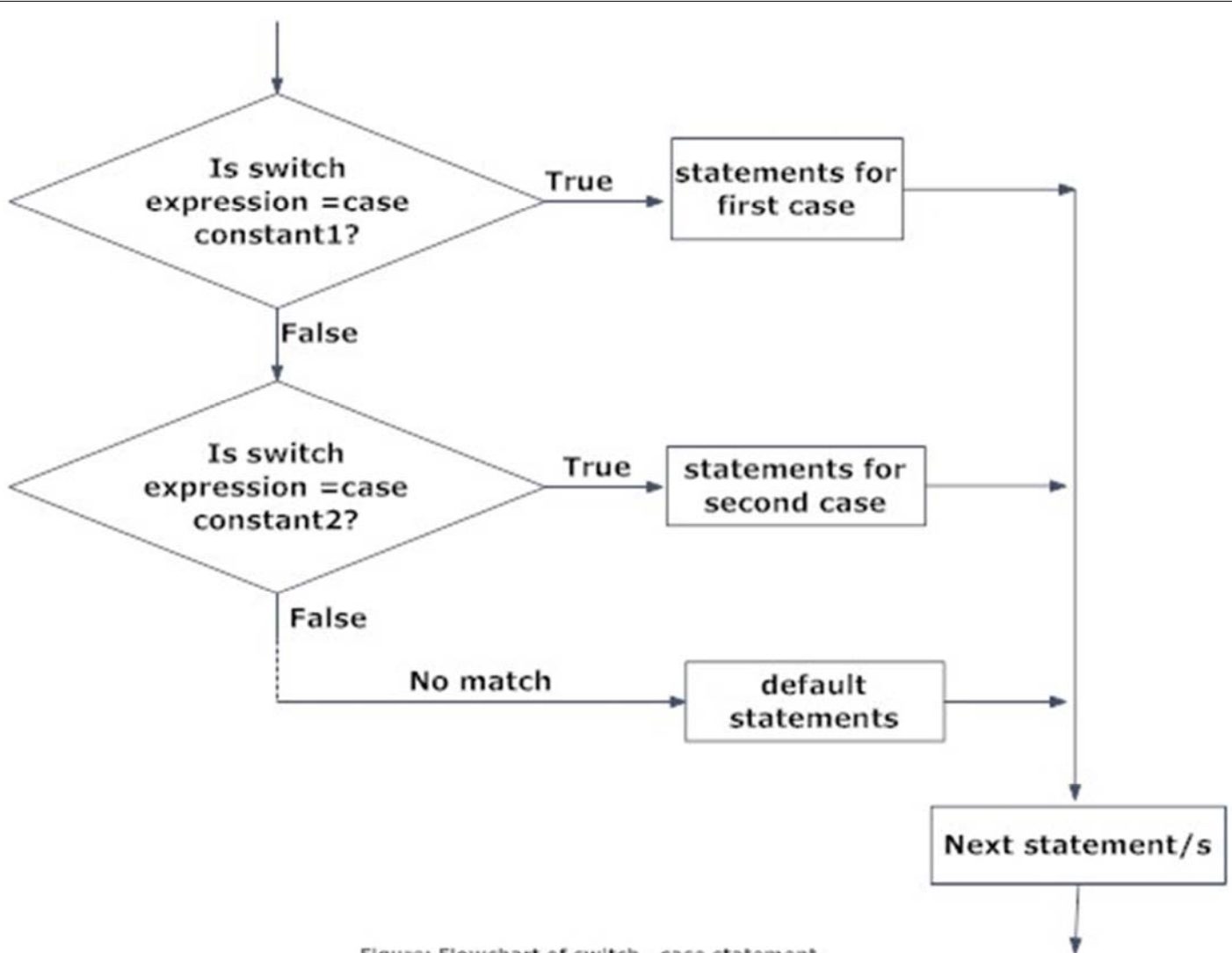


Figure: Flowchart of switch...case statement

Example 05

- Build a simple console calculator

```
D:\ACU Briefcase\Courses\Fall 2015\05 - Programming I\02 - Lectures\Lecture_...
Enter first number :15
Enter operator(+,-,*,/):*
Enter 2nd number :5

15 * 5 = 75
-
```

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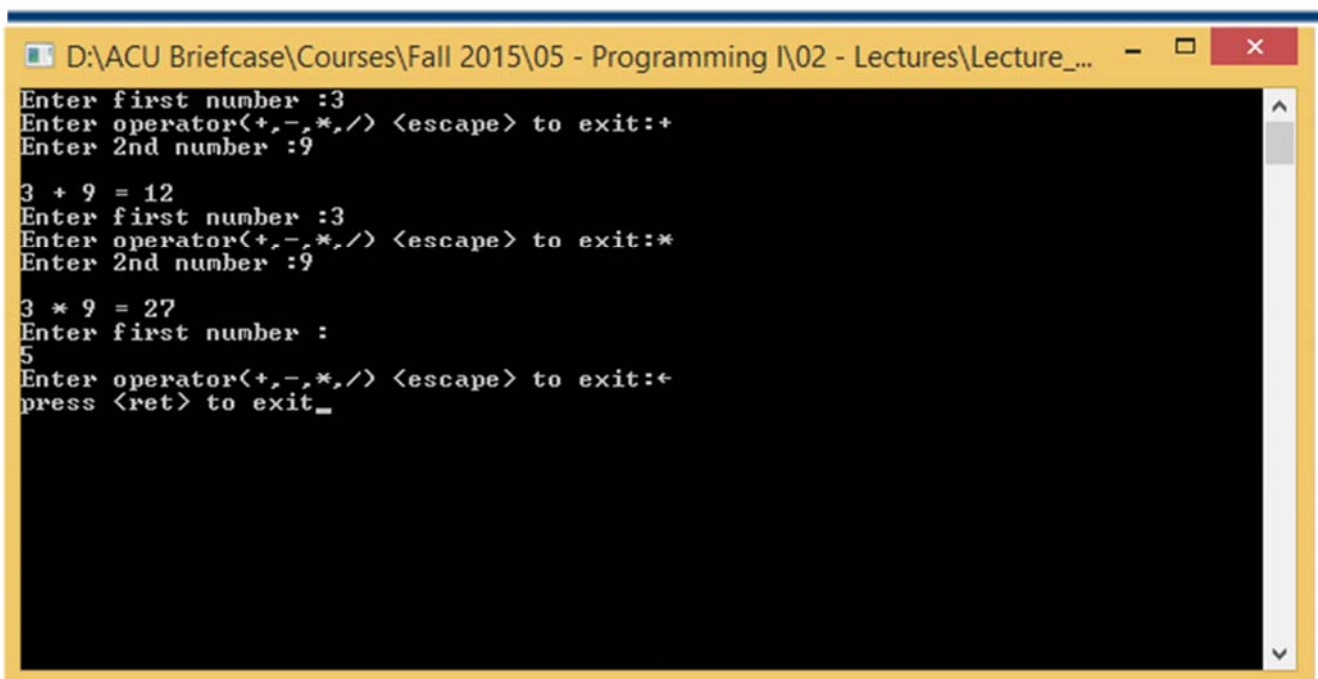
```
#include "stdafx.h"
#include <iostream>
#include <stdio.h>
#include <conio.h>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    double num1,num2,result;
    char op;
    cout<<"Enter first number :";
    cin>>num1;
    fflush(stdin);
    cout<<"Enter operator(+,-,*,/):";
    op=getche();
    cout<<endl<<"Enter 2nd number :";
    cin>>num2;
    switch(op)
    {
    case '+':
        result=num1+num2;
        break;
    case '-':
        result=num1-num2;
        break;
    case '*':
        result=num1*num2;
        break;
    case '/':
        result=num1/num2;
        break;
    default:
        result=0;
        cout<<"unknown operator."<<endl;
    }
    cout<<endl<<num1<<" "<<op<<" "<<num2<<" = "<<result<<endl;
    fflush(stdin);
    cin.get();
    return 0;
}
```

Example 06

- Build simple console calculator, that keep asking user for input till pressing <escape>

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```
D:\ACU Briefcase\Courses\Fall 2015\05 - Programming I\02 - Lectures\Lecture_...
Enter first number :3
Enter operator(+,-,*,/) <escape> to exit:+
Enter 2nd number :9

3 + 9 = 12
Enter first number :3
Enter operator(+,-,*,/) <escape> to exit:*
Enter 2nd number :9

3 * 9 = 27
Enter first number :
5
Enter operator(+,-,*,/) <escape> to exit:←
press <ret> to exit_
```

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```

using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    double num1,num2,result;
    char op;
    while(1)
    {
        cout<<"Enter first number :";
        cin>>num1;
        fflush(stdin);
        cout<<"Enter operator(+,-,*,/) <escape> to exit:";
        op=getche();
        if(op==27) break;
        cout<<endl<<"Enter 2nd number :";
        cin>>num2;

        switch(op)
        {
            case '+':
                result=num1+num2;
                break;
            case '-':
                result=num1-num2;
                break;
            case '*':
                result=num1*num2;
                break;
            case '/':
                result=num1/num2;
                break;
            default:
                result=0;
                cout<<"unknown operator."<<endl;
        }
        cout<<endl<<num1<<" "<<op<<" "<<num2<<" = "<<result<<endl;
    }
    cout<<endl<<"press <ret> to exit";
    fflush(stdin);
    cin.get();
    return 0;
}

```

Example 06

Build a simple calculator that accept equation from user as follows

Num1 <op> num2 <ret>

Then displays result

```
D:\ACU Briefcase\Courses\Fall 2015\05 - Programming I\02 - Lectures\Lecture_... - [X]
Enter operation as follows, then press <ret> :
num1 <op> num2 :
55 + 11

55 + 11 = 66
press <ret> to exit_
```

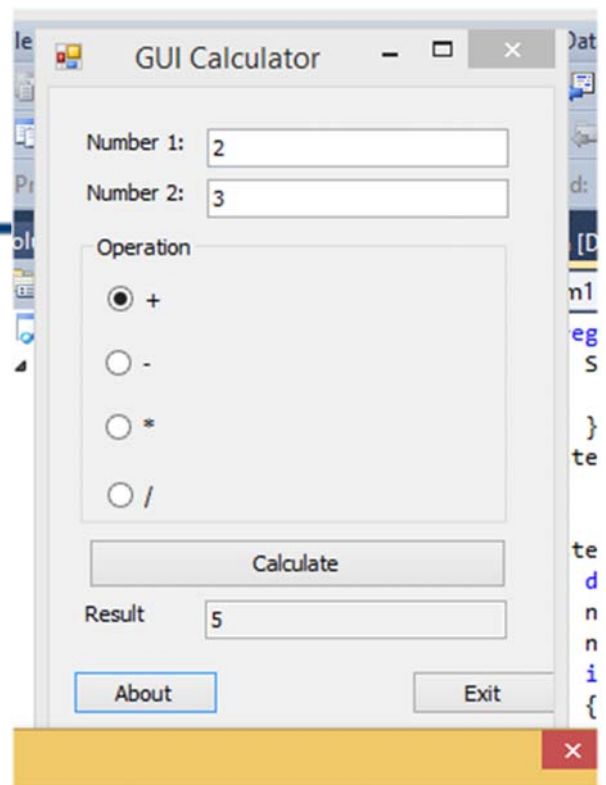
```
D:\ACU Briefcase\Courses\Fall 2015\05 - Programming I\02 - Lectures\Lecture_... - [X]
Enter operation as follows, then press <ret> :
num1 <op> num2 :
9 * 18

9 * 18 = 162
press <ret> to exit_
```

```
#include "stdafx.h"
#include <iostream>
#include <stdio.h>
#include <conio.h>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    double num1,num2,result;
    char op;
    cout<<"Enter operation as follows, then press <ret> : "<<endl;
    cout<<"num1 <op> num2 : "<<endl;
    cin>>num1>>op>>num2;
    fflush(stdin);
    switch(op)
    {
        case '+':
            result=num1+num2;
            break;
        case '-':
            result=num1-num2;
            break;
        case '*':
            result=num1*num2;
            break;
        case '/':
            result=num1/num2;
            break;
        default:
            result=0;
            cout<<"unknown operator."<<endl;
    }
    cout<<endl<<num1<<" "<<op<<" "<<num2<<" = "<<result<<endl;
    cout<<endl<<"press <ret> to exit";
    fflush(stdin);
    cin.get();
    return 0;
}
```

Application 01

- Build a simple GUI calculator



my first multiplications table generator, by : me.



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```
private: System::Void button2_Click(System::Object^ sender, System::EventArgs^ e) {
    Application::Exit();
}
private: System::Void button3_Click(System::Object^ sender, System::EventArgs^ e) {
    MessageBox::Show("my first multiplications table generator, by : me.");
}
private: System::Void button1_Click(System::Object^ sender, System::EventArgs^ e) {
    double num1, num2, result;
    num1 = double::Parse(textBox1->Text);
    num2 = double::Parse(textBox2->Text);
    if (radioButton1->Checked)
    {
        result = num1 + num2;
    }
    else if (radioButton2->Checked)
    {
        result = num1 - num2;
    }
    else if (radioButton3->Checked)
    {
        result = num1 * num2;
    }
    else if (radioButton4->Checked)
    {
        result = num1 / num2;
    }
    else
    {
        MessageBox::Show("Select operation first.");
        return;
    }
    textBox3->Text = result.ToString();
}
```



Thanks,..
See you next week (ISA),...

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