

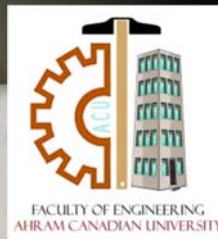


# Lecture (05)

# 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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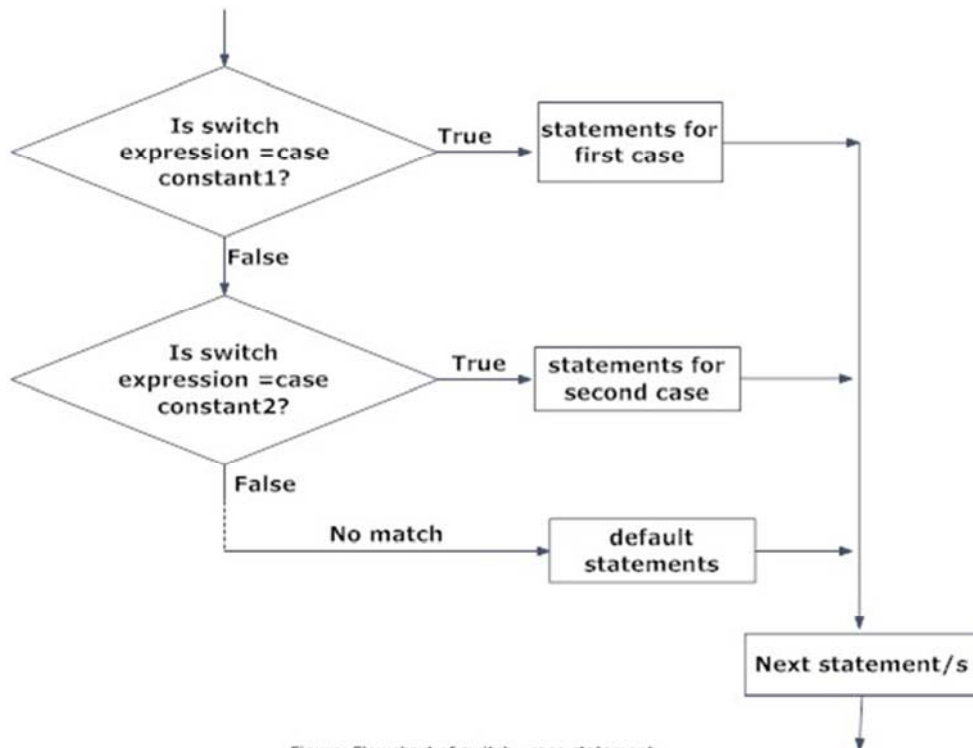


Figure: Flowchart of switch...case statement

## 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
```

```
#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>

```
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_
```

```

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

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```

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

9 * 18 = 162

press <ret> to exit_

```

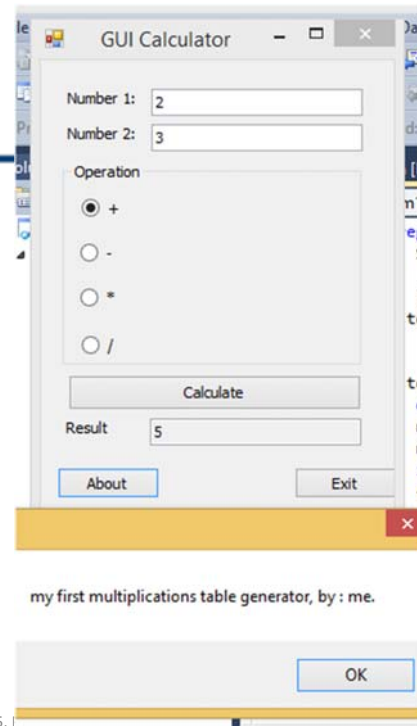
```

#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



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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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