CP LAB – Control Structures DECISION MAKING

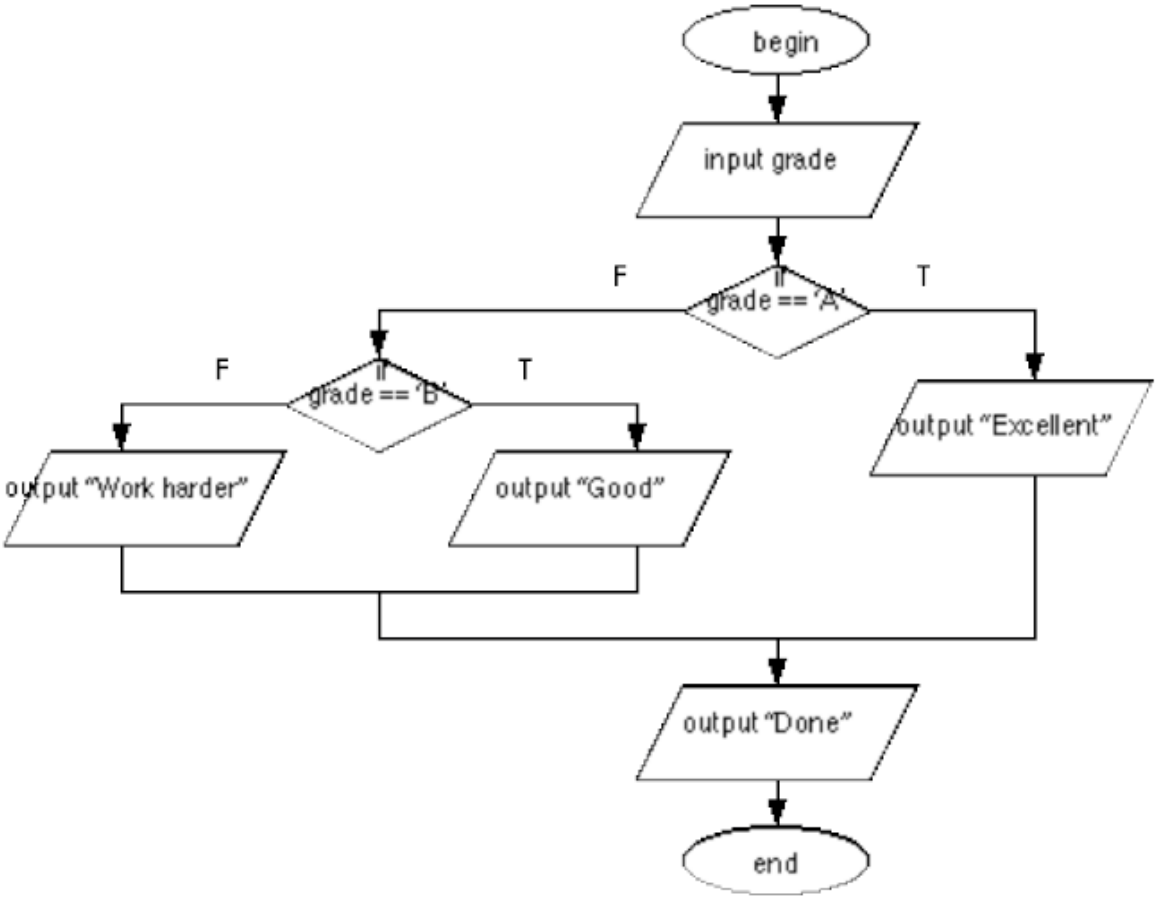
Department of Computer Science & Engineering AUMC

Max Time: 3:00 hrs Instructor: Ahmad Mohsin

Decision Making switch statements

Nested if-else

Practice Que:1: Ask grade from the student if it is A then display the message Excellent if it is B display Good else display work hard.



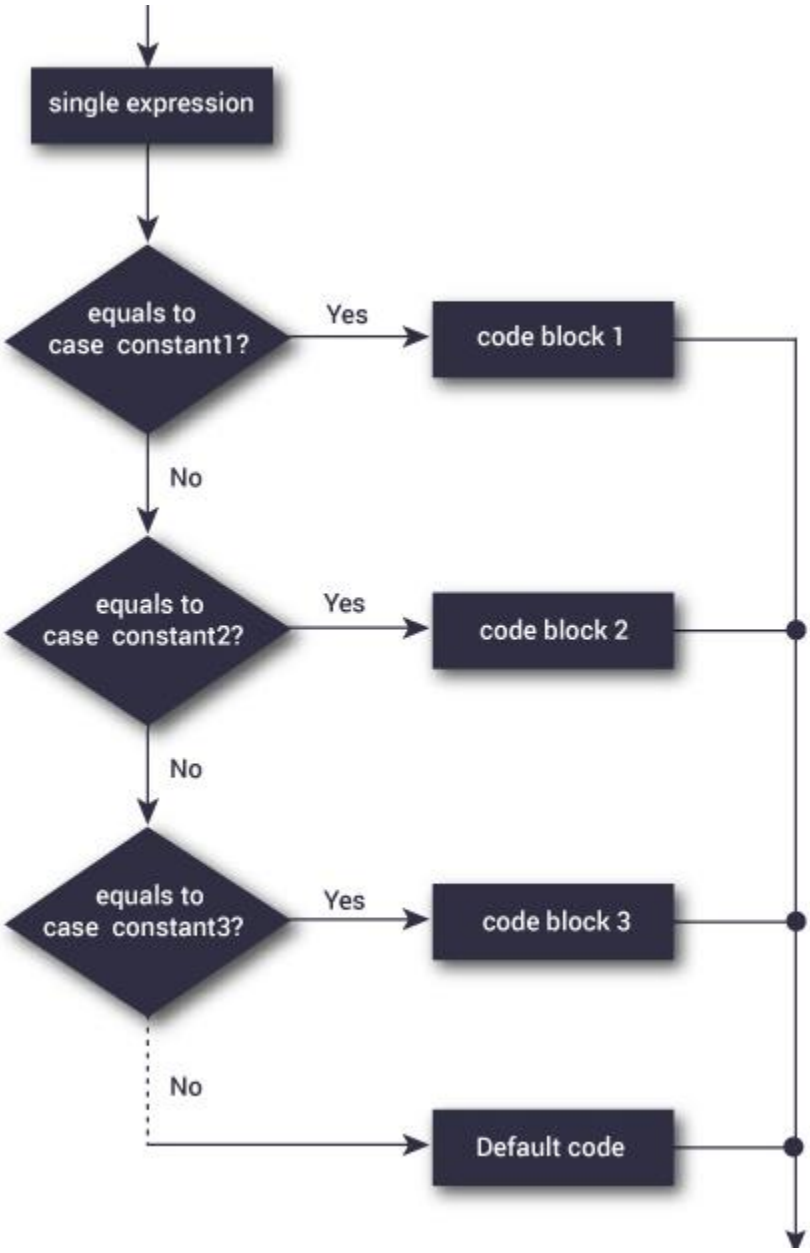
```
cout << "Enter your grade (A - F): ";
cin >> grade;
if(grade == 'A')
{
cout << "Excellent\n";
}
else
{
if(grade == 'B')
{
cout << "Good\n";
}
else
{
cout << "Work harder\n";
}
}
cout << "Done";
```

Exercise No: 1: Flowchart and write a C++ program that receives an integer from the user and do the following
If it is between 1-100 then display “valid” and do the following else show “invalid”.

- If number is even and between 1-10 display the message.
- If number is even and between 21-40 display the message.
- If number is even and between 41-80 display the message.
- If number is even and between 81-100 display the message.
- If number is odd and between 1-10 display the message.
- If number is odd and between 21-40 display the message.
- If number is odd and between 41-80 display the message.
- If number is odd and between 81-100 display the message.

Switch Statement

We have already seen how if statements can affect the branching of a program during execution. Another way to do this is using the switch statement. It is also a conditional statement. The switch statement uses the value of an integer expression to determine which group of statements to branch through. The sample program below illustrates the syntax.


single expression
equals to
case constant1?
Yes
code block 1
No
equals to
case constant2?
Yes
code block 2
No
equals to
case constant3?
Yes
code block 3
No
Default code

Practice Que No:1 Ask Grade form the user and then display Excellent for A, good job for B, satisfactory for C, there is a problem for D, you failed better luck next time for F and you did not enter A B C D F for default.

```
#include <iostream>
using namespace std;
int main()
{
char grade;
cout << "What grade did you earn in Programming I?" << endl;
cin >> grade;
switch( grade ) // This is where the switch statement begins
{
case 'A':cout << "an A - excellent work!" << endl;
break;
case 'B':cout << "you got a B - good job" << endl;
break;
case 'C':cout << "earning a C is satisfactory" << endl;
break;
case 'D':cout << "while D is passing, there is a problem" << endl;
break;
case 'F':cout << "you failed - better luck next time" << endl;
break;
default:cout << "You did not enter an A, B, C, D, or F" << endl;
}
return 0;
}
```

Exercise No 1: This program asks the percentage of a student and display which division he/she has got. The criteria for division is displayed below:

Percentage	Division
>=80	Distinction
>=60 and <80	First division
>=50 and <60	Second Division
>=40 and <50	Third Division
<40	Fail