

More Control Structures

- switch - case
- do - while
- for

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switch - case Structure

- A selection structure that can be used to select one of many branches
- Can be used with integer or character "switch" variable ONLY. (No floating point)

```

switch (cGrade)
{
    case 'A': case 'a':
        cout << " Excellent work\n";
        break;
    case 'B': case 'b':
        cout << " Good work\n";
        break;
}
    
```

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do - while Structure

- A loop structure that guarantees the loop body is executed once.
- Condition is tested at bottom of loop
- Don't forget the semicolon for while(...);

```

Initialize Counter;
do
{
    statement1;
    statement2;
    Increment Counter;
}while(Check Counter);
    
```

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switch case, do while Example

```

#include <iostream>
using namespace std;

int main(void)
{
    char cGrade;
    do
    {
        cout << "Enter the letter Grade or Q=Quit\n";
        cin >> cGrade;
        switch (cGrade)
        {
            case 'A': case 'a':
                cout << " Excellent work\n";
                break;
        }
    } while (cGrade != 'Q' && cGrade != 'q');
    return 0;
}
    
```

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switch case, do while Example

```

        case 'B': case 'b':
            cout << " Good work\n";
            break;
        case 'C': case 'c':
            cout << " Average work\n";
            break;
        case 'D': case 'd':
        case 'F': case 'f':
            cout << " Poor work\n";
            break;
        case 'Q': case 'q': break;
    
```

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switch case, do while Example

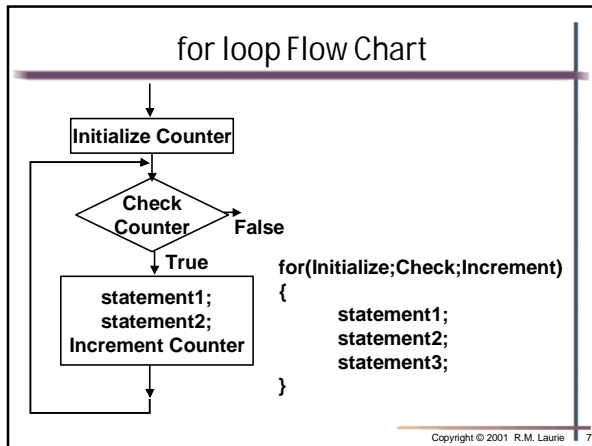
```

        default: // catch all other characters
            cout << " Incorrect letter
                Grade.\n";
            break;
    }
    cin.ignore(100, '\n');
    } while (cGrade != 'Q' && cGrade != 'q');
    cout << "Quit";
    return 0;
}
    
```

```

Enter the letter Grade or Q=Quit
>A
Excellent work
Enter the letter Grade or Q=Quit
>C
Average work
Enter the letter Grade or Q=Quit
>B
    
```

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for Example

```

#include <iostream>
using namespace std;
int main(void)
{
    int nI, nJ;
    for(nI=1; nI<=10; nI++) cout << nI;

    for(nI = 5; nI >= 0; --nI)
    {
        cout << endl;
        for( nJ = 4; nJ >= 0; --nJ)
        {
            cout << (nI + nJ) << ' ';
        }
    }
    return 0;
}
    
```

12345678910
9 8 7 6 5
8 7 6 5 4
7 6 5 4 3
6 5 4 3 2
5 4 3 2 1
4 3 2 1 0

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