
CS620c Structured Programming

Lesson 11

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Another example

- Look at the following program fragment:

```
int count = 13;
while ( count >= 0 )
{
    System.out.println("Count is: " + count );
    count = count ++;
}
System.out.println("Count was "+count + "when the condition become
false");
```

- Look over each of the three parts of a loop

While Loops Revisited

```
int count = 0; // INITIALISATION
while ( count < 10) // CONDITION
{
    System.out.println("Count is:" + count );
    count + +; // UPDATE
}
```

- We can re-write this as a for loop

For Loops

- The structure of a for loops is:

```
for (initialisation; condition; update)
{
    //body
}
```

Previous while loop as a for loop

```
for(int count = 0; count<10; count++)  
{  
    System.out.println("Count is: " + count);  
}
```

Try one...

- Convert the following while loop to a for loop

```
int count = 10;
while ( count >= 0 )
{
    System.out.println("Count is: " + count );
    count --;
}
```

```
for(int count = 10; count >= 0; count--)
{System.out.println("Count is" + count);
}
```

Do While loop

```
<initialization>
do{
    <statement(s)>;
    <update>
}while( <condition> );
```

```
int num=1;
do
{
    System.out.print(" "+num);
    num++;
}while( num<=5 );
Run time display: 1 2 3 4 5
```

- Question:
What is the difference between a while loop and a do-while loop?

Constants

- If you have a variable in your program that's value won't change then you can use the keyword `final` to designate it as a constant
- For example, often we will have a maximum or minimum value in a loop
 - ❑ `for (i =0; i< 10; i++){ }`
 - ❑ `int max = 10; for (i =0; i< max; i++){ }`
 - ❑ `final int MAX = 10; for (i =0; i< MAX; i++){ }`

Think!

- Think about your program to break up every three-digit number
 - What variables would you make constant?
 - How would you use a for-loop to do this?
 - How would you use a do-while loop to do this?
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