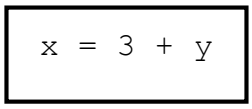
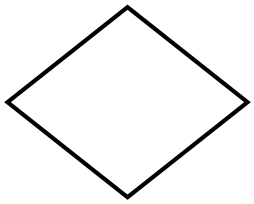
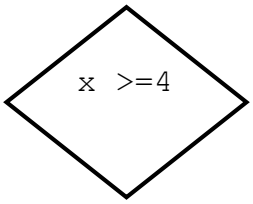
CECS 174 – Lecture 11 – If Statements Continued

Flowcharts –

Flowcharts are diagrams that represent of the flow of logic in an algorithm or process. Flowcharts are useful because they can often help you figure out the flow of your program's structure. They can also help you find sections of code that may be missing.

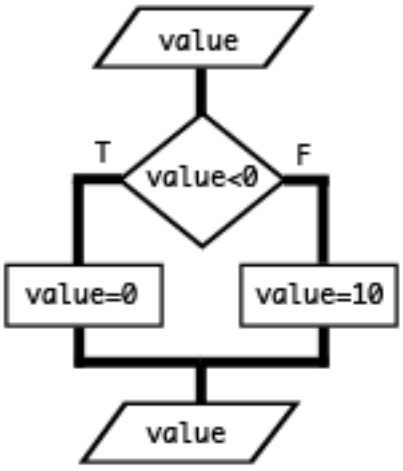
Symbols -

Statements		
Decisions		
Input/Output		

Example:

```
int value = in.nextInt();

if ( value < 0 )
{
     value = 0;
}
else
{
     value = 10;
}
System.out.println(value);
```



Nested If Statements –

If-statements are executed sequentially, which means that the order that they are placed in can make a difference on the end result. When if-statements are placed within other if-statements the inner if-statements will only execute if the outer if-statements are true.

Comparison:

Example (Non-nested if-statements):

```
int value = 50;

if ( value >= 0 )
{
     System.out.println("Value is >= 0");
}
if ( value >=25 )
{
     System.out.println("Value is >= 25");
}

/* Output:
     Value is >= 0
     Value is >= 25
*/
```

Example (Nested if-statements):

```
int value = 50;

if ( value >=0 )
{
     if ( value > 25 )
     {
          System.out.println("Value is > 25");
     }
     else
     {
          System.out.println("Value is between 0-25");
     }
}
else
{
     System.out.println("Value is < 0");
}

/* Output:
     Value is >= 25
*/
```

Else-If Statements

Else-If statements have a similar structure and logic as nested if-statements.

Comparison:

Example – Nested If Statement:

```
int test = 0;

if ( test == 10 )
{
     System.out.println("Ten");
}
else
{
     if (test == 5)
     {
          System.out.println("Five");
     }
     else
     {
          System.out.println("Not 5 or 10");
     }
}
```

Example – Else-If Statement:

```
if (test == 10)
{
     System.out.println("Ten");
}
else if (test == 5)
{
     System.out.println("Five");
}
else
{
     System.out.println("Not 5 or 10");
}
```

Notice that Else-If Statements make the code cleaner, easier to read and easier to follow. The Else-If Statement only takes this one type of logic (ie. branching from the else), so your logic must conform to this structure if you want to use an Else-If statement.