

Selection (`if` Statements)

Short Circuiting `if`

Lecture Contents

- Short Circuit of `if` statements

Short Circuit of &&

```
// Short Circuit &&  
if( false && x>5 ) {  
    System.out.println("Will NEVER execute this.");  
} else {  
    System.out.println("Will always execute this.");  
}
```

Short Circuit of &&

```
// Short Circuit &&  
if( false && x>5 ) {  
    System.out.println("Will NEVER execute this.");  
} else {  
    System.out.println("Will always execute this.");  
}
```

Will always execute this.

Short Circuit of &&

```
int x = 0;
if( x != 0 && (1/x) < 1 ) {
    System.out.println("When x==0, 1/x divides by zero");
} else {
    System.out.println("1/0 should give an ARITHMETIC_EXCEPTION");
    System.out.println("Why does this still work?!");
}
```

Short Circuit of &&

```
int x = 0;
if( x != 0 && (1/x) < 1 ) {
    System.out.println("When x==0, 1/x divides by zero");
} else {
    System.out.println("1/0 should give an ARITHMETIC_EXCEPTION");
    System.out.println("Why does this still work?!");
}
```

1/0 should give an ARITHMETIC_EXCEPTION
Why does this still work?!

Short Circuit of &&

```
// Short Circuit &&  
if( true || x>5 ) {  
    System.out.println("Will always execute this.");  
} else {  
    System.out.println("Will NEVER execute this.");  
}
```

Short Circuit of &&

```
// Short Circuit &&  
if( true || x>5 ) {  
    System.out.println("Will always execute this.");  
} else {  
    System.out.println("Will NEVER execute this.");  
}
```

Will always execute this.

Short Circuit of ||

```
int x = 0;
if( x == 0 || (1/x) < 1 ) {
    System.out.println("When x==0, 1/x divides by zero");
} else {
    System.out.println("1/0 should give an ARITHMETIC_EXCEPTION");
    System.out.println("Why does this still work?!");
}
```

When x==0, 1/x divides by zero

Short Circuit of ||

```
int x = 0;
if( x == 0 || (1/x) < 1 ) {
    System.out.println("When x==0, 1/x divides by zero");
} else {
    System.out.println("1/0 should give an ARITHMETIC_EXCEPTION");
    System.out.println("Why does this still work?!");
}
```

When x==0, 1/x divides by zero

Remember the Order of Operations!



```
int x = 0;
if( x == 0 || (1/x) < 1 ) {
    System.out.println("Works");
} else {
    System.out.println("Never prints");
}
```



```
int x = 0;
if( (1/x) < 1 || x == 0 ) {
    System.out.println("Doesn't Work");
} else {
    System.out.println("Exception.");
}
```



Since we evaluate left-to-right, this code will lead to an exception.

Selection (`if` Statements)

Short Circuiting `if`