

While...

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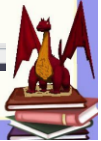


Today's Agenda

- 1. Boolean Values
- 2. The While Instruction



4-2



Boolean Values

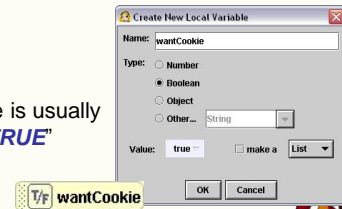
- True or False?
 - Boolean values are abstract concepts used in computations?
- TRUE!

4-3



Boolean Variables

- Boolean Variables hold only two values
 - True
 - False
- Initial Value is usually set to be "TRUE"



4-4



Boolean Functions

- Boolean Functions *return* one value from the choice of
 - True
 - False
- Also primitive functions that are Boolean
 - User prompted to answer *Yes* (true) or *No* (false)



4-5



Relational Comparisons

- Relational Operators used to compare values and determine whether relationships such as greater than, less than, or equal to exist
- Compare two values and determine how they *relate* to each other

Operator	Meaning
==	Equal to
!=	Not equal to
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than equal to

4-6



If Statements and Boolean Expressions

```

if (x > y)
    System.out.println("X is greater than Y");
if(x == y)
    System.out.println("X is equal to Y");
if(x != y){
    System.out.println("X is not equal to Y");
    x = y;
    System.out.println("However, now it is.");
}
    
```



4.5

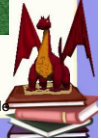
The While Instruction

- While instruction is a loop that repeats as long as a Boolean condition is **true**
- Second repetition structure
- Called conditional loop...since the loop is controlled by a condition



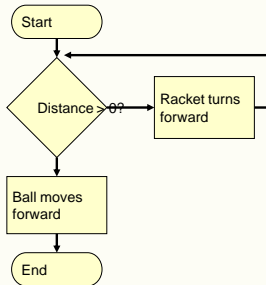
Penguin While

4-8



Flowcharting a While Instruction

4.5



- Loop's condition is tested before each repetition of the loop
- First, it tests condition
 - If true...performs a repetition and starts over
 - If false...the loop terminates

