

ITEC 120

Lecture 4
Conditionals

Review

- Questions
- Strings
 - Methods?

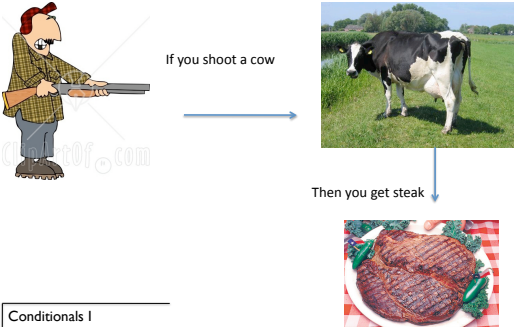
Conditionals I

Objectives

- Rationale behind conditionals
- Syntax
- Examples

Conditionals I

Example



If you shoot a cow

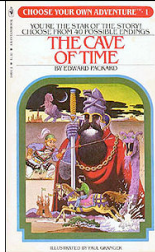
Then you get steak

Conditionals I

Choose your own adventure

- Book where you make choices as you read

*If you decide to start back home, turn to page 4.
If you decide to wait, turn to page 5.*



- Choices you make impact the story
 - Wildly rich
 - Horrible deaths

Conditionals I

Java syntax

```
public class template
{
    public static void main(String[] args)
    {
        int x;
        Scanner scan= new Scanner(System.in);
        x= scan.nextInt();
        if (x > 0)
        {
            System.out.println("Positive");
        }
        if (x < 0)
        {
            System.out.println("Negative");
        }
    }
}
```

Conditionals I

Structure

- Expression (True or false)
 - Numbers: <,>==,!=
 - Strings: name.equals(second) and !
- Based on the result of the expression a block of code gets executed

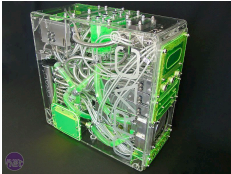
Conditionals I

Example

```
public class example
{
    public static void main(String[] args)
    {
        String one = "hi";
        String two = "hello";
        if (!one.equals(two))
        {
            System.out.println("Hello Hi");
        }
    }
}
```

Conditionals I

Priorities



Conditionals I

Java

- First choice = if
- Second choice = else if
- Third choice = else if
- Last choice = else

Linear progression
Begins with if
Ends with else



Conditionals I

Example

```
public static void main(String[] args)
{
    int x=3;
    int y=4;
    if (x>3)
        {System.out.println("X is big");}
    else if (y <4)
        {System.out.println("Y is small");}
    else if (x == y)
        {System.out.println("Same");}
    else
        {System.out.println("Can you see me now?");}
}
```

Conditionals I

Example

- Can you guess the number between 1-10 that I'm thinking of exercise
- Check to see if it is between 1 and 10
- Then say Exact if it is 5, Higher than my choice if it is above 5, Lower than my choice if it is less than 5

Conditionals I

More than one if

```
public static void main(String[] args)
{
    int x=3;
    int y=4;
    if (x>3)
        {System.out.println("X is big");}
    else if (y <4)
        {System.out.println("Y is small");}
    else if (x == y)
        {System.out.println("Same");}
    else
        {System.out.println("Can you see me now?");}
    if (x + y > 3)
        {System.out.println("Two things should print");}
}
```

Conditionals I

Chaining

```
public static void main(String[] args)
{
    int total;
    int max;
    int sum;
    //Scanner code to read in the values
    if (total == max)
    {
        if (total < sum)
        {
            System.out.println("T < S");
        }
        else
        {
            System.out.println(" T = M < S");
        }
    }
}
```

Conditionals I

Traveling



Do you want to visit Disney World or Jurassic Park

Conditionals I

Acquisition



or



and



or



Conditionals I

And

- Function that takes two Booleans and returns a Boolean
- Represented by `boolA && boolB` in Java
- Truth table

boolA	boolB	Result of and
True	True	True
True	False	False
False	True	False
False	False	False

Conditionals I

Example

```
int x;
int y;
FunctionContainer fc = new FunctionContainer();
x = fc.readNuclearTemperature();
y = fc.readAvailableCooling();
if ( x > 100 && y > 0)
{
    fc.beginCooling();
}
else
{
    fc.soundAlarm();
}
```

Conditionals I

Or

- Function that takes two Booleans and returns a Boolean
- Represented by `boolA || boolB` in Java
- Truth table

boolA	boolB	Result of or
True	True	True
True	False	True
False	True	True
False	False	False

Conditionals I

Example

```
int x;
String y;
FunctionContainer fc = new FunctionContainer();
x = fc.getResidency();

//0 == Citizen
//1 == Green card
//2 == Visa
if (x == 0 || x == 1 || x == 2)
{
    System.out.println("You meet the requirements");
}
```

Conditionals I

Summary

- Conditionals
 - if
 - else if
 - else
 - ! < > <= >= == .equals
 - And / or

Conditionals I