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Jt Scratch Lesson 3B • Summer 2012 • slide 1

Scratch Programming

Lesson 3B : Multiple Decisions Within
One Script

A New Problem : Checkout

- After told the price of an item a customer wants to purchase, tell how much they must fork over to the cashier, given they might hold a 10% off coupon, and on some items they have to pay tax.

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A New Problem : Checkout

- After told the price of an item a customer wants to purchase, tell how much they must fork over to the cashier, given they might hold a 10% off coupon, and on some items they have to pay tax. **Also, announce how much change they should get back, based on how much cash they give the cashier.**

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Checkout : Some Variables

- **Item** - name of item they are buying

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Checkout : Some Variables

- Item - name of item they are buying
- **Coupon** -
 - Y indicates they have a coupon
 - N indicates they do not

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Checkout : Some Variables

- Item - name of item they are buying
- Coupon -
 - Y indicates they have a coupon
 - N indicates they do not
- **Bill** - tells what they owe at any moment

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Checkout : Some Variables

- Item - name of item they are buying
- Coupon -
 - Y indicates they have a coupon
 - N indicates they do not
- **Bill** - tells what they owe at any moment
set this to the original cost of the item and change if necessary based on tax & coupon

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Checkout : Some Variables

- Item - name of item they are buying
- Coupon -
 - Y indicates they have a coupon
 - N indicates they do not
- **Bill** - tells what they owe at any moment
- **Cash** - amount they give to cashier

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Checkout : Assumptions

Since problem does not tell us, let us make some assumptions.

- **Tax rate?**

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Checkout : Assumptions

Since problem does not tell us, let us make some assumptions.

- **Tax rate? Lets say they pay 7% sales tax**

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Checkout : Assumptions

Since problem does not tell us, let us make some assumptions.

- **Tax rate? Lets say they pay 7% sales tax**
- **Which items are taxed?**

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Checkout : Assumptions

Since problem does not tell us, let us make some assumptions.

- Tax rate? Lets say they pay 7% sales tax
- Which items are taxed? For now, lets say everything but soda and cereal.

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Checkout : Assumptions

Since problem does not tell us, let us make some assumptions.

- Tax rate? Lets say they pay 7% sales tax
- Which items are taxed? For now, lets say everything but soda and cereal. [We will design script so it can easily be expanded to exclude other items.]

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First Version: Coupons / No tax

- When working on code, it is sometimes smart to work on a simpler version first that only does some of what you want, and then later modified that code to do more things

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First Version: Coupons / No tax

- When working on code, it is sometimes smart to work on a simpler version first that only does some of what you want, and then later modified that code to do more things
- Lets do a version that handles the coupons if the person has it, but doesn't handle taxes yet

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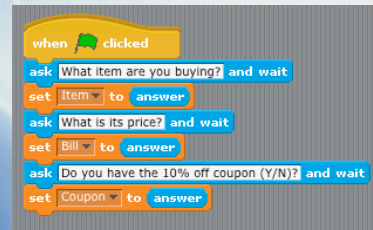
Checkout : Input

- Find out item, its costs and whether there is a coupon:

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Checkout : Input

- Find out item, its costs and whether there is a coupon:



```
when clicked
ask What item are you buying? and wait
set Item to answer
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
```

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Checkout : Input

- Find out item, its costs and whether there is a coupon:

Notice we start bill to be price of the item

```
when clicked
ask What item are you buying? and wait
set Item to answer
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
```

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Checkout : Input

- Find out item, its costs and whether there is a coupon:

We have asked them to answer with Y or N

```
when clicked
ask What item are you buying? and wait
set Item to answer
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
```

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?

Bill = ?

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?

Bill = ?

Example:

Bill (item cost) currently \$100
10% off is how many dollars?

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?

Bill = ?

Example:

Bill (item cost) currently \$100
10% off is how many dollars? \$10

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?
Bill = ?

Example:
 Bill (item cost) currently \$100
 10% off is how many dollars? \$10
 So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?
Bill = ?

Example:
 Bill (item cost) currently \$100
 10% off is how many dollars? \$10
 So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?
Bill = ?
general equation?

Example:
 Bill (item cost) currently \$100
 10% off is how many dollars? \$10
 So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?
Bill = ?
Bill = 90

Example:
 Bill (item cost) currently \$100
 10% off is how many dollars? \$10
 So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?
Bill = ?
Bill = 90 = 100 - 10

Example:
 Bill (item cost) currently \$100
 10% off is how many dollars? \$10
 So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?
Bill = ?
Bill = 90 = 100 - 10 = Bill - .10 * Bill

Example:
 Bill (item cost) currently \$100
 10% off is how many dollars? \$10
 So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?

$$\text{Bill} = \text{Bill} - .10 * \text{Bill}$$

Example:

Bill (item cost) currently \$100
10% off is how many dollars? \$10
So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?

$$\text{Bill} = \text{Bill} - .10 * \text{Bill}$$

this is actually the same as $.9 * \text{Bill}$

Example:

Bill (item cost) currently \$100
10% off is how many dollars? \$10
So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?

$$\text{Bill} = .9 * \text{Bill}$$

Example:

Bill (item cost) currently \$100
10% off is how many dollars? \$10
So bill becomes how much? \$90

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Checkout : Calculation

- What is the math to adjust the bill if the ten percent off coupon exists?



Example:

Bill (item cost) currently \$100
10% off is how many dollars? \$10
So bill becomes how much? \$90

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Checkout : Calculation

- Should we always adjust the bill in this way for every customer?



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Checkout : Calculation

- Should we always adjust the bill in this way for every customer?




- No only for some people right?

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Checkout : Calculation

- Should we always adjust the bill in this way for every customer?




- Only if they have a coupon.

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Checkout : Calculation

- Should we always adjust the bill in this way for every customer?



- Only if they have a coupon. We sometimes do it.

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Checkout : Calculation

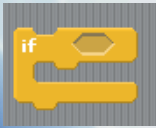

- What structure do you use to do something sometimes?

- Only if they have a coupon. We sometimes do it.

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Checkout : Calculation

- What structure do you use to do something sometimes?



Either

Or


- Only if they have a coupon. We sometimes do it.

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Checkout : Calculation

- What structure do you use to do something sometimes?

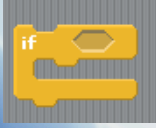
Either

Or

Which one?

- Only if they have a coupon. We sometimes do it.

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Checkout : Calculation

- What structure do you use to do something sometimes?


Which one?

- Only if they have a coupon. We sometimes do it.

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Checkout : Calculation

- So for coupon change bill within an IF. We might as well tell them what we are doing.

```
if
  say We are taking 10% off your cost for 2 secs
  set Bill to 0.9 * Bill
```

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Checkout : Calculation

- So for coupon change bill within an IF. We might as well tell them what we are doing.

```
if
  say We are taking 10% off your cost for 2 secs
  set Bill to 0.9 * Bill
```

How do we decide?

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Checkout : Calculation

- So for coupon change bill within an IF. We might as well tell them what we are doing.

```
if
  say We are taking 10% off your cost for 2 secs
  set Bill to 0.9 * Bill
```

How do we decide?
What is the condition?

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Checkout : Calculation

- So for coupon change bill within an IF. We might as well tell them what we are doing.

```
if Coupon = Y
  say We are taking 10% off your cost for 2 secs
  set Bill to 0.9 * Bill
```

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Checkout : Output

- Tell them the bill and find out how much cash they are giving us.

```
say join Your bill is $ Bill for 5 secs
ask How much cash are you giving us? and wait
set Cash to answer
```

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Checkout : Output

- Calculate and announce change given back.

```
say join Here is $ join Cash - Bill in change. Have a good day! for 5 secs
stop all
```

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Checkout : Output

- Calculate and announce change given back.

```
say join Here is $ join Cash - Bill In change. Have a good day! for 5 secs
stop all
```

This is new. Instead of making a new variable, and using a Set, we just did the calculation within the Say itself.

Checkout : Output

- Calculate and announce change given back.

Simple calculation. Think about it

```
say join Here is $ join Cash - Bill In change. Have a good day! for 5 secs
stop all
```

This is new. Instead of making a new variable, and using a Set, we just did the calculation within the Say itself.

Checkout : Output

- Calculate and announce change given back.

If Bill was \$80 and they gave us \$100 Cash ...

```
say join Here is $ join Cash - Bill In change. Have a good day! for 5 secs
stop all
```

This is new. Instead of making a new variable, and using a Set, we just did the calculation within the Say itself.

Checkout : Output

- Calculate and announce change given back.

If Bill was \$80 and they gave us \$100 Cash ...
... we should give them \$20 back .. Or Cash - Bill

```
say join Here is $ join Cash - Bill In change. Have a good day! for 5 secs
stop all
```

This is new. Instead of making a new variable, and using a Set, we just did the calculation within the Say itself.

Checkout : Complete Code

```
when clicked
ask What item are you buying? and wait
set item to answer
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
if Coupon = Y
say We are taking 10% off your cost! for 2 secs
set Bill to (0.9 * Bill)
say join Your bill is $ Bill for 5 secs
ask How much cash are you giving us? and wait
set Cash to answer
say join Here is $ join Cash - Bill In change. Have a good day! for 5 secs
stop all
```

I. Input

II. Sometimes adjust bill for coupon

III. Ask for & get cash

IV. Tell change

Checkout : Complete Code

Demo:
Checkout 1

```
when clicked
ask What item are you buying? and wait
set item to answer
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
if Coupon = Y
say We are taking 10% off your cost! for 2 secs
set Bill to (0.9 * Bill)
say join Your bill is $ Bill for 5 secs
ask How much cash are you giving us? and wait
set Cash to answer
say join Here is $ join Cash - Bill In change. Have a good day! for 5 secs
stop all
```

II. Sometimes adjust bill for coupon

III. Ask for & get cash

IV. Tell change

Checkout : Handling the taxes

- Lets say when we handle taxes, we want to tell them if we are charging taxes or not, and of course, add on the 7% when we have to.

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Checkout : Handling the taxes

- Lets say when we handle taxes, we want to tell them if we are charging taxes or not, and of course, add on the 7% when we have to.
- The code has to **decide** to charge taxes or not, but it is **definitely going to do something** in either case.

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Checkout : Handling the taxes

- Lets say when we handle taxes, we want to tell them if we are charging taxes or not, and of course, add on the 7% when we have to.
- The code has to **decide** to charge taxes or not, but it is **definitely going to do something** in either case.
- **What type of statement should we use?**

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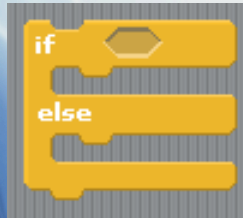
Checkout : Handling the taxes

- **decide** but **either way do something**. What type of statement should we use?

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Checkout : Handling the taxes

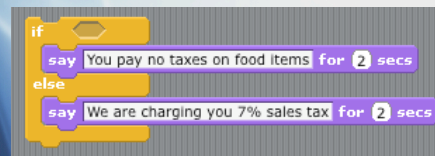
- **decide** but **either way do something**. What type of statement should we use?



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Checkout : Handling the taxes

- **Tell them if we are taxing them or not.**



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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

Bill = ?

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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

Bill = ?

Example: Bill is \$100 before tax
How many dollars is tax?

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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

Bill = ?

Example: Bill is \$100 before tax
How many dollars is tax? \$7

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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

Bill = ?

Example: Bill is \$100 before tax
How many dollars is tax? \$7
How much is new Bill?

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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

Bill = ?

Example: Bill is \$100 before tax
How many dollars is tax? \$7
How much is new Bill? \$107

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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

$$\text{Bill} = \text{general equation?}$$

Example: Bill is \$100 before tax
How many dollars is tax? \$7
How much is new Bill? \$107

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Checkout : Handling the taxes

- What do we do to the bill if we add on 7% tax?

$$\text{Bill} = 1.07 * \text{Bill}$$

Example: Bill is \$100 before tax
How many dollars is tax? \$7
How much is new Bill? \$107

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Checkout : Handling the taxes

- Code so far:

```
if
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- Code so far: Lets say soda was the only thing with no tax. What condition do we use?

```
if
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- Code so far: Lets say soda was the only thing with no tax. What condition do we use?

```
if
  say You pay no tax
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- Code so far:

```
if Item = soda
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- But more than what item has no tax.

```
if Item = soda
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- What can we do?

```
if Item = soda
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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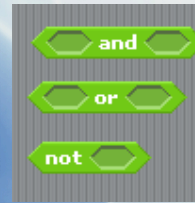
Quick Lesson: Logical Operators

- Three boolean or logical operators can be used to make more complex conditions to use in IFs and elsewhere.

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Quick Lesson: Logical Operators

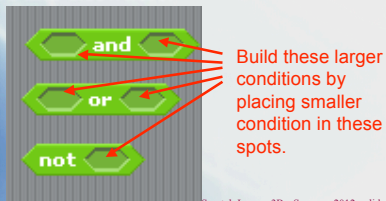
- Three boolean or logical operators can be used to make more complex conditions to use in IFs and elsewhere:



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Quick Lesson: Logical Operators

- Three boolean or logical operators can be used to make more complex conditions to use in IFs and elsewhere:



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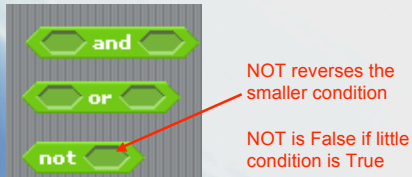
Quick Lesson: Logical Operators

- How do these work? They need to come out True or False.

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Quick Lesson: Logical Operators

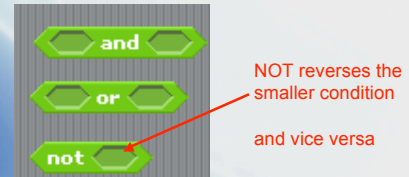
- How do these work? They need to come out True or False.



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Quick Lesson: Logical Operators

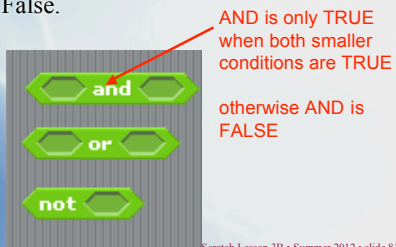
- How do these work? They need to come out True or False.



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Quick Lesson: Logical Operators

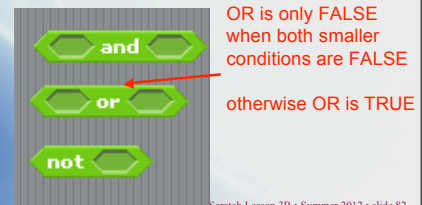
- How do these work? They need to come out True or False.



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Quick Lesson: Logical Operators

- How do these work? They need to come out True or False.



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Quick Lesson: Logical Operators

- Example: Item is Apple and Weight is 500
Is this True or False?



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Quick Lesson: Logical Operators

- Example: Item is Apple and Weight is 500
Is this True or False? FALSE



NOT reverses the smaller condition
NOT is False if little condition is True

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Quick Lesson: Logical Operators

- Example: Item is Apple and Weight is 500
Is this True or False?



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Quick Lesson: Logical Operators

- Example: Item is Apple and Weight is 500
Is this True or False? FALSE



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Quick Lesson: Logical Operators

- Example: Item is Apple and Weight is 500
Is this True or False? FALSE



AND is only TRUE
when both smaller
conditions are TRUE

otherwise AND is
FALSE

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Quick Lesson: Logical Operators

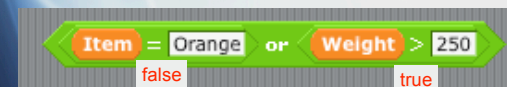
- Example: Item is Apple and Weight is 500
Is this True or False?



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Quick Lesson: Logical Operators

- Example: Item is Apple and Weight is 500
Is this True or False? TRUE



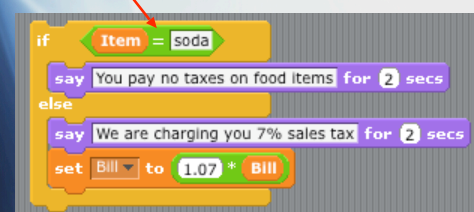
OR is only FALSE
when both smaller
conditions are FALSE

otherwise OR is TRUE

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Checkout : Handling the taxes

- What can we do if more than one item has no taxes?



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Checkout : Handling the taxes

- We need an operator that can check multiple possibilities but is true if just one of them is true.

```
if <Item = soda>
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- We need an operator that can check multiple possibilities but is true if just one of them is true. Which one?

```
if <Item = soda>
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- We need an operator that can check multiple possibilities but is true if just one of them is true. OR

```
if <Item = soda>
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- We need an operator that can check multiple possibilities but is true if just one of them is true. OR

```
if <Item = soda or Item = cereal>
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- We need an operator that can check multiple possibilities but is true if just one of them is true. Use more ORs if other non-tax items

```
if <Item = soda or Item = cereal>
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

- Place this in our code after coupon handled.

```
if <Item = soda or Item = cereal>
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to 1.07 * Bill
```

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Checkout : Handling the taxes

Coupon

Taxes

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Checkout : Handling the taxes

Coupon

Taxes

Demo:
Checkout 2

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Checkout : Problems

- Too many decimal digits in bill.

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Checkout : Problems

- Too many decimal digits in bill.

TRICK:

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Checkout : Problems

- Too many decimal digits in bill.

TRICK:

Demo:
Checkout 3

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Checkout : Problems

- Whoops, they might not give us enough cash!

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Checkout : Problems

- Whoops, they might not give us enough cash! We should complain if they do not give us enough.

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Checkout : Problems

- Whoops, they might not give us enough cash! We should complain if they do not give us enough. So, we want to decide between telling them how much change they get back or otherwise complaining.

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Checkout : Problems

- Whoops, they might not give us enough cash! We should complain if they do not give us enough. So, we want to decide between telling them how much change they get back or otherwise complaining. What do we use if we have to decide between two choices and we definitely want to do one of the two?

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Checkout : Problems

- Whoops, they might not give us enough cash! We should complain if they do not give us enough. So, we want to decide between telling them how much change they get back or otherwise complaining. What do we use if we have to decide between two choices and we definitely want to do one of the two?

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Checkout : Problems

- Whoops, they might not give us enough cash! We should complain if they do not give us enough. So, we want to decide between telling them how much change they get back or otherwise complaining. What do we use if we have to decide between two choices and we definitely want to do one of the two? IF/ELSE

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Checkout : Problems

- What do we use if we have to decide between two choices and we definitely want to do one of the two? IF/ELSE

```
if
  say You are a crook. for 6 secs
else
  say join Here is $ join Cash - Bill in change. Have a good day! for 5 secs
```

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Checkout : Problems

- What do we use if we have to decide between two choices and we definitely want to do one of the two? IF/ELSE

What condition means they are a crook?

It Scratch Lesson 3B • Summer 2012 • slide 109

Checkout : Problems

- What do we use if we have to decide between two choices and we definitely want to do one of the two? IF/ELSE

What condition means they are a crook?

It Scratch Lesson 3B • Summer 2012 • slide 110

Checkout : Problems

- What do we use if we have to decide between two choices and we definitely want to do one of the two? IF/ELSE

What condition means they are a crook?

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Checkout : Code without Problems

It Scratch Lesson 3B • Summer 2012 • slide 112

Checkout : Code without Problems

It Scratch Lesson 3B • Summer 2012 • slide 113

Checkout : Code without Problems

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Demo:
Checkout 4

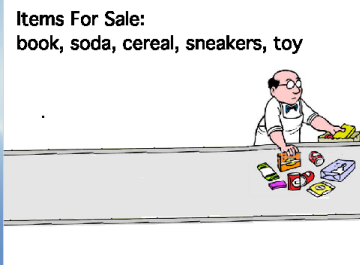
Checkout : Multimedia Added

Demo: Checkout

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Checkout : Multimedia Added

- Stage
 - Items For Sale: book, soda, cereal, sneakers, toy



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Checkout : Multimedia Added


- Sprite costumes
 - sneakers
 - book
 - cereal
 - toy
 - soda
 - Start



Ji Scratch Lesson 3B • Summer 2012 • slide 117

Checkout : Multimedia Added

- Sounds
 - cashregister
 - CONVEYOR
 - sirenpolice1



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Checkout : Multimedia Added

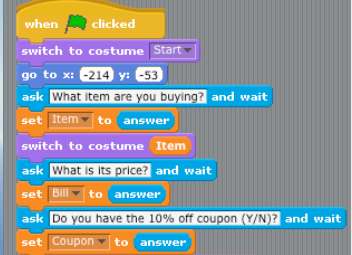
- Script
 - when clicked
 - switch to costume Start
 - go to x: 214 y: 53
 - ask What item are you buying? and wait
 - set Item to answer
 - switch to costume Item
 - ask What is its price? and wait
 - set Bill to answer
 - ask Do you have the 10% off coupon (Y/N)? and wait
 - set Coupon to answer



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Checkout : Multimedia Added

- Start
 - when clicked
 - switch to costume Start
 - go to x: 214 y: 53
 - ask What item are you buying? and wait
 - set Item to answer
 - switch to costume Item
 - ask What is its price? and wait
 - set Bill to answer
 - ask Do you have the 10% off coupon (Y/N)? and wait
 - set Coupon to answer



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Checkout : Multimedia Added

- Start

```

when clicked
switch to costume Start
go to x: -214 y: -53
ask What item are you buying? and wait
set Item to answer
switch to costume Item
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
  
```

Question Mark

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Checkout : Multimedia Added

- Start

```

when clicked
switch to costume Start
go to x: -214 y: -53
ask What item are you buying? and wait
set Item to answer
switch to costume Item
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
  
```

Position on left

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Checkout : Multimedia Added

- Start

```

when clicked
switch to costume Start
go to x: -214 y: -53
ask What item are you buying? and wait
set Item to answer
switch to costume Item
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
  
```

What item?

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Checkout : Multimedia Added

- Start

```

when clicked
switch to costume Start
go to x: -214 y: -53
ask What item are you buying? and wait
set Item to answer
switch to costume Item
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
  
```

Turn sprite into item

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Checkout : Multimedia Added

- Start

```

when clicked
switch to costume Start
go to x: -214 y: -53
ask What item are you buying? and wait
set Item to answer
switch to costume Item
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
  
```

Turn sprite into item
NEW: actually using variable rather than picking from menu of costume names like we did in past code

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Checkout : Multimedia Added

- Start

```

when clicked
switch to costume Start
go to x: -214 y: -53
ask What item are you buying? and wait
set Item to answer
switch to costume Item
ask What is its price? and wait
set Bill to answer
ask Do you have the 10% off coupon (Y/N)? and wait
set Coupon to answer
  
```

Get price and find out if there is a coupon

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Checkout : Multimedia Added

Fun Effects

```
play sound cashregister until done
play sound CONVEYOR
glide 3 secs to x: 110 y: -89
```

Play sound effects and show item moving down checkout aisle

Jt Scratch Lesson 3B • Summer 2012 • slide 127

Checkout : Multimedia Added

Coupon?

```
if Coupon = Y
  say We are taking 10% off your cost for 2 secs
  set Bill to 0.9 * Bill
```

Decide if coupon must be handled and if so change the bill appropriately

Jt Scratch Lesson 3B • Summer 2012 • slide 128

Checkout : Multimedia Added

Taxes?

```
if Item = soda or Item = cereal
  say You pay no taxes on food items for 2 secs
else
  say We are charging you 7% sales tax for 2 secs
  set Bill to round 107 * Bill / 100
```

Decide if taxes are to be handled and if so change the bill appropriately. Either way tell person whether taxes being charged.

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Checkout : Multimedia Added

Handle transaction

```
say join Your bill is $ Bill for 5 secs
ask How much cash are you giving us? and wait
set Cash to answer
```

Tell person what the bill is and get their money.

Jt Scratch Lesson 3B • Summer 2012 • slide 130

Checkout : Multimedia Added

Change?

```
if Cash < Bill
  play sound sirenpolice1
  say You are a crook for 6 secs
else
  say join Here is $ join Cash - Bill in change. Have a good day! for 5 secs
stop all
```

Decide if they gave enough money and if so, tell them the change they get. Otherwise complain!

Jt Scratch Lesson 3B • Summer 2012 • slide 131

Checkout : Multimedia Added

Change?

```
if Cash < Bill
  play sound sirenpolice1
  say You are a crook for 6 secs
else
  say join Here is $ join Cash - Bill in change. Have a good day! for 5 secs
stop all
```

Nice use of sound effect

Decide if they gave enough money and if so, tell them the change they get. Otherwise complain!

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Script

Ji Scratch Lesson 3B • Summer 2012 • slide 133

Script

Start

Ji Scratch Lesson 3B • Summer 2012 • slide 134

Script

Fun Effects

Ji Scratch Lesson 3B • Summer 2012 • slide 135

Script

Coupon?

Ji Scratch Lesson 3B • Summer 2012 • slide 136

Script

Taxes?

Ji Scratch Lesson 3B • Summer 2012 • slide 137

Script

Transaction

Ji Scratch Lesson 3B • Summer 2012 • slide 138

Script

```

when clicked
  switch to costume [C1]
  go to x: 470 y: 470
  ask "What item are you buying?" and wait
  ask COST to answer
  switch to costume [C2]
  ask "What is its price?" and wait
  ask PR to answer
  ask "Do you have the 10% off coupon (Y/N)?" and wait
  ask COUPON to answer
  play sound [C2]
  play sound [C2]
  play sound [C2]
  while 1 does to: 470 y: 470
  if COUPON is Y
    say "We are taking 10% off your cost!" for 2 secs
    set PR to PR * 0.9
  if PR < 100 or PR < 1000
    say "You pay for this item $PR" for 3 secs
  else
    say "We are charging you 7% sales tax!" for 3 secs
    set PR to round(PR * 1.07)
  join PR with $
  say "How much cash are you giving?" and wait
  ask CASH to answer
  if CASH < PR
    say "Cash is low!"
  else
    say "You are a crook!" for 3 secs
    join PR with $
    join CASH with $
    say "Go change, make a good day!" for 3 secs
  stop all
  
```

Crook?

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Script

```

when clicked
  switch to costume [C1]
  go to x: 470 y: 470
  ask "What item are you buying?" and wait
  ask COST to answer
  switch to costume [C2]
  ask "What is its price?" and wait
  ask PR to answer
  ask "Do you have the 10% off coupon (Y/N)?" and wait
  ask COUPON to answer
  play sound [C2]
  play sound [C2]
  play sound [C2]
  while 1 does to: 470 y: 470
  if COUPON is Y
    say "We are taking 10% off your cost!" for 2 secs
    set PR to PR * 0.9
  if PR < 100 or PR < 1000
    say "You pay for this item $PR" for 3 secs
  else
    say "We are charging you 7% sales tax!" for 3 secs
    set PR to round(PR * 1.07)
  join PR with $
  say "How much cash are you giving?" and wait
  ask CASH to answer
  if CASH < PR
    say "Cash is low!"
  else
    say "You are a crook!" for 3 secs
    join PR with $
    join CASH with $
    say "Go change, make a good day!" for 3 secs
  stop all
  
```

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slides and/or podcasts
for this lecture

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