

If Statements

- If statements work by checking a given condition, and **if that condition is true, the code below will be executed**
- If the condition is false the code will continue running and pass the code within the if statement.
- For example:

```
if x == 2:  
    print("hi")
```

```
print("bye")
```

If Statements

- For example:

```
if x == 2:  
    print("hi")
```

```
print("bye")
```

- If $x = 1$, what will happen?

If Statements

- For example:

```
if x == 2:  
    print("hi")
```

FALSE
Will NOT print "hi"

```
print("bye")
```

Will exit and print "bye"

- If $x = 1$, what will happen?

If Statements

- For example:

```
if x == 2:  
    print("hi")
```

```
print("bye")
```

- If $x = 2$, what will happen?

If Statements

- For example:

```
if x == 2:
    print("hi")
```

TRUE
Will print "hi"

```
print("bye")
```

Will exit and print "bye"

- If $x = 2$, what will happen?

If/Else Statements

- What if you only want your code to print “bye” if x is not equal to 2?

If/Else Statements

- What if you only want your code to print “bye” if x is not equal to 2?

```
if x == 2:  
    print("hi")  
else:  
    print("bye")
```

If/Else Statements

- What if you only want your code to print “bye” if x is not equal to 2?

```
if x == 2:  
    print("hi")  
else:  
    print("bye")
```

- If x = 2, what will happen?

If/Else Statements

- What if you only want your code to print “bye” if x is not equal to 2?

```
if x == 2:
    print("hi")
else:
    print("bye")
```

TRUE
Will print “hi”

WILL NOT ENTER ELSE
Will NOT print “bye”

- If x = 2, what will happen?

If/Else Statements

- What if you only want your code to print “bye” if x is not equal to 2?

```
if x == 2:  
    print("hi")  
else:  
    print("bye")
```

- If x = 1, what will happen?

If/Else Statements

- What if you only want your code to print “bye” if x is not equal to 2?

```
if x == 2:
    print("hi")
else:
    print("bye")
```

FALSE
Will NOT print “hi”

WILL ENTER ELSE
Will print “bye”

- If x = 1, what will happen?

Multiple Conditions

- What if you have multiple conditions?
 - Way 1: Multiple If statements
 - Use this if you want to check all conditions regardless if multiple conditions are true
 - The code will go through every condition for each If statement
 - Way 2: If/Elif/Else statements
 - Use this if you want to check the conditions until one is true, then stop checking the rest of the conditions
 - The code will run through the if statements until one condition is true, then exit

Multiple If Statements

```
if x == 2:  
    print("hi")
```

```
if x%2 == 0:  
    print("cat")
```

```
print("bye")
```

- If x = 4, what will happen?

Multiple If Statements

```
if x == 2:  
    print("hi")
```

FALSE
Will not print "hi"

```
if x%2 == 0:  
    print("cat")
```

TRUE
Will print "cat"

```
print("bye")
```

Will exit and print "bye"

- If $x = 4$, what will happen?

Multiple If Statements

```
if x == 2:  
    print("hi")
```

```
if x%2 == 0:  
    print("cat")
```

```
print("bye")
```

- If $x = 2$, what will happen?

Multiple If Statements

```
if x == 2:  
    print("hi")
```

TRUE
Will print "hi"

```
if x%2 == 0:  
    print("cat")
```

TRUE
Will print "cat"

```
print("bye")
```

Will exit and print "bye"

- If x = 2, what will happen?

If/Elif/Else Statements

```
if x == 2:  
    print("hi")  
  
elif x%2 == 0:  
    print("cat")  
  
else:  
    print("bye")
```

- If $x = 2$, what will happen?

If/Elif/Else Statements

```
if x == 2:
    print("hi")
```

TRUE
Will print "hi"

```
elif x%2 == 0:
    print("cat")
```

WILL PASS NEXT CONDITION
Will NOT print "cat"

```
else:
    print("bye")
```

WILL PASS ELSE
Will NOT print "bye"

- If x = 2, what will happen?

If/Elif/Else Statements

```
if x == 2:  
    print("hi")  
  
elif x%2 == 0:  
    print("cat")  
  
else:  
    print("bye")
```

- If $x = 4$, what will happen?

If/Elif/Else Statements

```
if x == 2:           FALSE  
    print("hi")      Will NOT print "hi"  
  
elif x%2 == 0:      TRUE  
    print("cat")     Will print "cat"  
  
else:               WILL PASS ELSE  
    print("bye")     Will NOT print "bye"
```

- If $x = 4$, what will happen?

If/Elif/Else Statements

```
if x == 2:  
    print("hi")  
  
elif x%2 == 0:  
    print("cat")  
  
else:  
    print("bye")
```

- If $x = 1$, what will happen?

If/Elif/Else Statements

```
if x == 2:           FALSE  
    print("hi")      Will NOT print "hi"  
  
elif x%2 == 0:       FALSE  
    print("cat")     Will NOT print "cat"  
  
else:                WILL ENTER ELSE  
    print("bye")     Will print "bye"
```

- If $x = 1$, what will happen?