

Decision Statements

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Decisions

- How many decisions do you make in a day?
- If you're hungry, what do you do?
- If your alarm goes off, what do you do?
- If you are out of gas, what do you do?

Asking Questions

- Writing a decision statement in programming is similar to asking a question
- BUT...the question must be answered with true or false (yes or no)
- For example, you can't ask:
"What did the user type?"
- Instead, you must ask:
"Did the user type the word hello?"

Why do you think questions
can only be answered with
true and false?

Why True and False

- Remember the hardware we talked about?
- Remember those circuits on the motherboard?
- They transport numbers, what kind?
- 0 = False
- 1 = True

If Statement

if _____:

do something

If Statement

```
score = int(input('Please enter your score: '))
```

```
if score >= 90:
```

```
    print('You received an A! Yay!')
```


Relational Operators

Relation	Operator
Greater Than	>
Greater Than or Equal To	>=
Less Than	<
Less Than or Equal To	<=
Equal To	==
Not Equal To	!=

What if the answer is false?

- If the answer to an if statement is false, you may or may not want to do something different...if you do, we have the else statement:

if _____:

do something

else:

do something else

If Else

```
if score >= 90:
```

```
    print('You received an A! Yay!')
```

```
else:
```

```
    print('You did not receive an A...')
```


Well, if you didn't score
an A, what did you score?

Else-if

- This is a statement that allows us to combine multiple if statements that are related...

Else-if

- What are your thoughts on the following?

```
if sky == 'blue':
```

```
    print('Perfect day to play outside!')
```

```
elif x > 3:
```

```
    y = x * 3 + 5
```

```
else:
```

```
    print('Assignments are due tomorrow!')
```


Else-if

- What are your thoughts on the following?

```
if sky == 'blue':
```

```
    print('Perfect day to go to the beach')
```

```
elif x > 3:
```

```
    y = x * 3 + 5
```

```
else:
```

```
    print('Assignments are due tomorrow!')
```

This doesn't make sense!
These topics aren't related!

Else-if

```
if score >= 90:
```

```
    print('You received an A! Yay!')
```

```
elif score >= 80:
```

```
    print('You received a B! Yay!')
```

```
elif score >= 70:
```

```
    print('You received a C. Try harder!')
```

```
elif score >= 60:
```

```
    print('You received a D. Try studying more.')
```

```
else:
```

```
    print('You received an F. You may want to ask for help!')
```


What's the difference?

```
if score >= 90:  
    print('You received an A!  
    Yay!')  
elif score >= 80:  
    print('You received a B!  
    Yay!')  
elif score >= 70:  
    print('You received a C. Try  
    harder!')  
elif score >= 60:  
    print('You received a D. Try  
    studying more.')  
else:  
    print('You received an F. You  
    may want to ask for help!')
```

```
if score >= 90:  
    print('You received an A!  
    Yay!')  
if score >= 80:  
    print('You received a B!  
    Yay!')  
if score >= 70:  
    print('You received a C. Try  
    harder!')  
if score >= 60:  
    print('You received a D. Try  
    studying more.')  
else:  
    print('You received an F. You  
    may want to ask for help!')
```


Practice

- Write a short program that sets the value of a variable named "answer" to 1 if a variable named "result" is equal to 100. Otherwise, set "answer" equal to 2.
- Ask the user the miles/gallon of their car. Ask the user for the distance to travel. Print out whether or not the user has enough gas to reach his/her destination.
- Determine if the user can make it to the destination and back

What should I be doing...

- If you have multiple workspaces in Repl.it, please combine them
- Read the online text and do some of the practice problems
- Ask me questions
- Complete the homework assignment