CS 110
If, else, and elif

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Announcements

- PA 3 (start now!)
- Regrade requests
- PA Feedback in Gradescope

if-else

Use the `if` statement to execute code in the ***True*** case

Can add an `else` to specify code to run in the ***False*** case

```
statements . . .

if condition:
    statement 1a
    statement 2a
    . . .
    statement Na
else:
    statement 1b
    statement 2b
    . . .
    statement Nb

statements . . .
```

if-else

What pair of inputs would cause *only* "**Workload OK**" to print ?

```
title = input('Job title: ')
hours = int(input('Hours worked per week: '))

if title != 'manager' and hours > 20:
    if title == 'waiter':
        print('Workload too high')
    else:
        print('Workload OK')
if hours > 40:
    print('Reduce hours')
else:
    print('Acceptable hours')
```

What inputs to print “Cannot arrive in time” ?

```
flight_time = int(input('Enter flight time:\n')) # 30
delay = int(input('Enter flight delay in minutes:\n')) # 25
meeting_time = int(input('Enter time until next meeting:\n')) # 50

if flight_time > meeting_time:
    print('You will be late')
if flight_time + delay > meeting_time:
    if delay < 20:
        print('You might make the meeting')
    else:
        print('Cannot arrive in time')
else:
    print('Don\'t worry')
```

String comparison

- Compares alphabetically, one character at-a-time, left-to-right

```
'albatross'    ==    'albertson'
```

What is the result?

String comparison

- Compares alphabetically, one character at-a-time, left-to-right

```
'albatross'    <=    'albertson'
```

What is the result?

String comparison

- Compares alphabetically, one character at-a-time, left-to-right

```
'albatross'    <=    'albERTSON'
```

What is the result?

What will it print?

```
name = input('What is your name (lower case)? ')

if name <= 'chase' or name > 'trevor':
    print('name category 1')
elif name > 'chase' and name < 'ianto':
    print('name category 2')
else:
    print('name category 3')
```

What will it print?

When the input is `jeff` ?

```
name = input('What is your name (lower case)? ')

if name <= 'chase' or name > 'trevor':
    print('name category 1')
elif name > 'chase' and name < 'ianto':
    print('name category 2')
else:
    print('name category 3')
```

What will it print?

When the input is chance ?

```
name = input('What is your name (lower case)? ')

if name <= 'chase' or name > 'trevor':
    print('name category 1')
elif name > 'chase' and name < 'ianto':
    print('name category 2')
else:
    print('name category 3')
```

What will it print?

When the input is `iancu` ?

```
name = input('What is your name (lower case)? ')

if name <= 'chase' or name > 'trevor':
    print('name category 1')
elif name > 'chase' and name < 'ianto':
    print('name category 2')
else:
    print('name category 3')
```

elif

- You can follow an **if** with zero or more **elif** statements
- With **elif** statements, you provide a **condition** as you do with an **if** statement
- A chain of **if/elif** will be followed until it reaches a condition that evaluates to **True**
- One such a condition is reached, python will execute the body of that particular **if** or **elif** and then continue on after the chain.

```
statements . . .

if conditionA:
    statements
elif conditionB:
    statements

statements . . .
```

```
statements . . .

if conditionA:
    statements
elif conditionB:
    statements
elif conditionC:
    statements

statements . . .
```

```
statements . . .

if conditionA:
    statements
elif conditionB:
    statements
elif conditionC:
    statements
elif conditionD:
    statements

statements . . .
```

```
statements . . .

if conditionA:
    statements
elif conditionB:
    statements
elif conditionC:
    statements
else:
    statements

statements . . .
```

Write the program

- Accepts a number as input
- Prints out the letter grade that you will receive

```
What is your numeric grade? 72
You will get a C

What is your numeric grade? 97
You will get an A

What is your numeric grade? 50
You will get an F
```

Greater (or equal) than 90% at least an A
Greater (or equal) than 80% at least a B
Greater (or equal) than 70% at least a C
Greater (or equal) than 60% at least a D
Anything less, at least an E / F

```
numeric_grade = input('What is your numeric grade? ')
if numeric_grade.isnumeric() == False:
    print('Enter a different value next time. Exiting.')
    exit()

numeric_grade = int(numeric_grade)


# Write your code as if it would go here
```

```
if numeric_grade >= 60: # 81
    if numeric_grade >= 70:
        if numeric_grade >= 80:
            if numeric_grade >= 90:
                print('You will get an A')
                exit()
            print('You will get a B')
            exit()
        print('You will get a C')
        exit()
    print('You will get a D')
    exit()

print('You will get an F')
```

```
if numeric_grade >= 90:
    print ('You will get an A')
if numeric_grade >= 80:
    print ('You will get a B')
if numeric_grade >= 70:
    print ('You will get a C')
if numeric_grade >= 60:
    print ('You will get a D')
if numeric_grade < 60:
    print ('You will get an F')
```

```
if numeric_grade >= 90:
    print ('You will get an A')
elif numeric_grade >= 80:
    print ('You will get a B')
elif numeric_grade >= 70:
    print ('You will get a C')
elif numeric_grade >= 60:
    print ('You will get a D')
elif numeric_grade < 60:
    print ('You will get an F')
```

```
if numeric_grade >= 90:
    print ('You will get an A')
elif numeric_grade >= 80:
    print ('You will get a B')
elif numeric_grade >= 70:
    print ('You will get a C')
elif numeric_grade >= 60:
    print ('You will get a D')
else:
    print ('You will get an F')
```