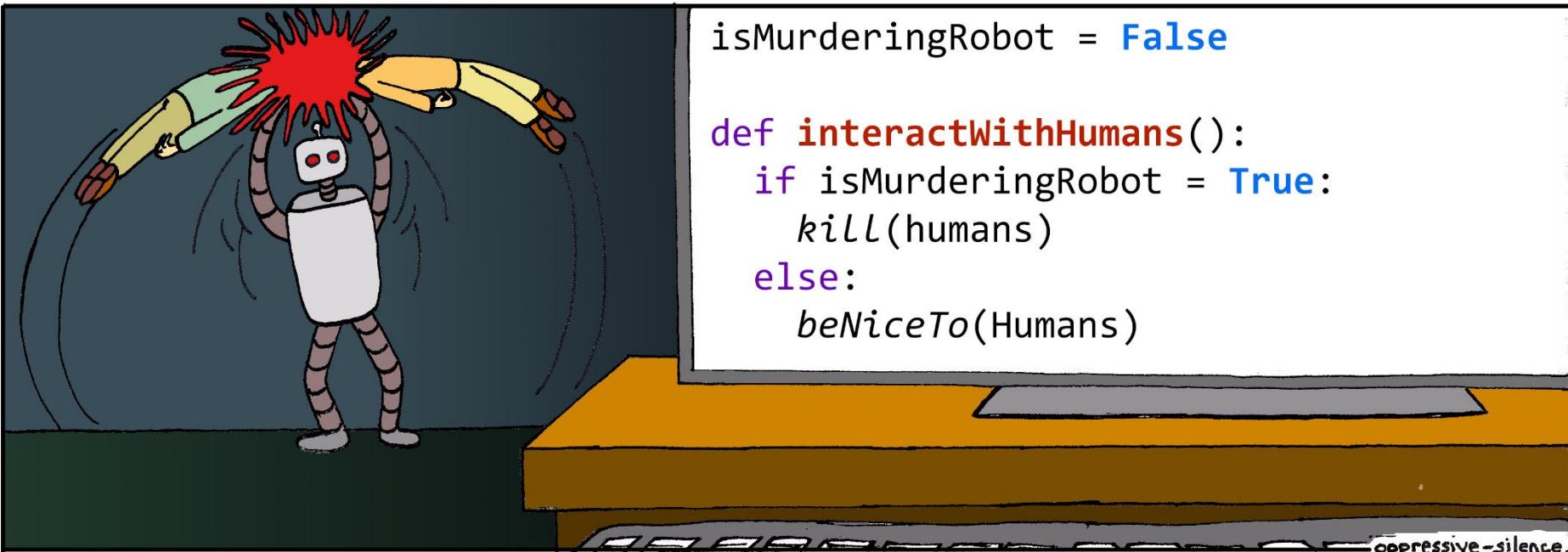


I T P 4 4 9

PYTHON REVIEW 1

L e c t u r e 2





Print

1: Project

2: Structure

2: Favorites

Project W1.py

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
 - .idea
 - Homework
 - In Class Coding
 - W1.py
- Project
- venv library root
- External Libraries
- Scratches and Consoles

Run: W1

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"
Hello World!
```

```
Process finished with exit code 0
```

1: Project

Project

ITP449_Fall2020 C:\Users\Reza>
Class
.idea
Homework
In Class Coding
W1.py
Project
venv library root
External Libraries
Scratches and Consoles

```
1 print("Hello World!")  
2 print(Hello World!)  
3  
4  
5  
6  
7  
8
```

! 6 ✘ 1 ^

2: Structure

Run:

File "C:/users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py", line 2

print(Hello World!)

^

SyntaxError: invalid syntax

Process finished with exit code 1

2: Favorites

Run TODO Problems Terminal Python Console Event Log

Packages uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F) 3:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

1: Project

Project ▾ W1.py

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
 - .idea
 - Homework
 - In Class Coding
 - W1.py
- Project
- venv library root
- External Libraries
- Scratches and Consoles

2: Structure

Run: W1 ▾

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"

Hello World!

Where does this line go?

Process finished with exit code 0

2: Favorites

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
 - .idea
 - Homework
 - In Class Coding
 - W1.py
- External Libraries
- Scratches and Consoles

2: Structure

Run: W1 ×

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"
Hello World!***Where does this line go?
Hello World! Where does this line go?
Hello World!Where does this line go?

Process finished with exit code 0

2: Favorites

end, adds a space instead of a newline
Default value of end is \n which is a newline

<https://docs.python.org/3/library/functions.html#print>

`print(*objects, sep='', end='\n', file=sys.stdout, flush=False)`

Print *objects* to the text stream *file*, separated by *sep* and followed by *end*. *sep*, *end*, *file* and *flush*, if present, must be given as keyword arguments.

All non-keyword arguments are converted to strings like `str()` does and written to the stream, separated by *sep* and followed by *end*. Both *sep* and *end* must be strings; they can also be `None`, which means to use the default values. If no *objects* are given, `print()` will just write *end*.

The *file* argument must be an object with a `write(string)` method; if it is not present or `None`, `sys.stdout` will be used. Since printed arguments are converted to text strings, `print()` cannot be used with binary mode file objects. For these, use `file.write(...)` instead.

Whether output is buffered is usually determined by *file*, but if the *flush* keyword argument is true, the stream is forcibly flushed.

Changed in version 3.3: Added the *flush* keyword argument.

`class property(fget=None, fset=None, fdel=None, doc=None)`

Return a property attribute.

fget is a function for getting an attribute value. *fset* is a function for setting an attribute value. *fdel* is a function for deleting an attribute value. And *doc* creates a docstring for the attribute.

« A typical use is to define a managed attribute `x`:

```
class C:
    def __init__(self):
        self._x = None

    def getx(self):
        return self._x

    def setx(self, value):
        self._x = value

    def delx(self):
        del self._x

x = property(getx, setx, delx, "I'm the 'x' property.")
```

1: Project 1: Structure

Project W1.py

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020

- Class
- .idea
- Homework
- In Class Coding
 - W1.py

External Libraries

Scratches and Consoles

1 print("I love " + "naps!")
2 print("I love", "naps!")
3
4
5
6
7
8

Concatenate strings using +

Run: W1

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"

I love naps!
I love naps!

Process finished with exit code 0

2: Favorites

Run TODO Problems Terminal Python Console Event Log

Packages uninstalled successfully: Uninstalled packages: 'numpy' (today 12:25 F) 3:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

display the following:

“Python” comes from a 1970s comedy series.

1: Project

2: Structure

2: Favorites

Project W1.py

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
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- External Libraries
- Scratches and Consoles

Run: W1

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py"
"Python" comes from a 1970s comedy series.

Process finished with exit code 0

Run

TODO

Problems

Terminal

Python Console

Event Log

escape character

Escapes from normal meaning indicated by
backslash + character

`\"` Prints double quote ("")

`\\"` Prints backslash (\)

`\n` Prints new line

`\t` Prints tab

Comments

1: Project 1: Structure

Project W1.py

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020

- Class
- .idea
- Homework
- In Class Coding
 - W1.py

External Libraries

Scratches and Consoles

```
1 # This is a single line comment
2
3 """
4     This is a
5         multi-line
6             comment
7 """
8 print("Hello World!")
9
```

Run: W1

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py"

Hello World!

Process finished with exit code 0

Favorites

Run TODO Problems Terminal Python Console Event Log

Packages Uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F) 9:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

1: Project 1: Structure

Project ▾ + - | ⚙ - W1.py x

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020

- Class
- .idea
- Homework
- In Class Coding
 - W1.py

External Libraries

Scratches and Consoles

```
1 # Tommy Trojan
2 # tommy.trojan@usc.edu
3 # ITP 449
4 # Assignment 2
5
6 print("Hello World!")
7
8
9
```

Run: W1 x

Run Up Down Stop Python Console

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"

Hello World!

Process finished with exit code 0

2: Favorites

Run TODO Problems Terminal Python Console Event Log

Packages Uninstalled successfully: Uninstalled packages: 'num...' (today 12:25 F) 4:34 CRLF UTF-8 4 spaces Python 3.8 (Class)

Variables

variable

Variables are the way we label and access data. The contents of a variable can vary (hence, *variable*).

int Integers 3 -1 0 2019

float Real numbers 3.14 -12.0

str Character strings "hi" "22" ""

bool Boolean True False



1: Project

2: Structure

2: Favorites

Project ▾ + - | ⚙ - W1.py ×

```
1 age = 10
2 name = "Sophie"
3 chanceOfRain = 0.8
4 isItRaining = True
```

```
W1.py
Project
> venv library root
External Libraries
Scratches and Consoles
```

Run: W1 ×

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449"
```

```
Process finished with exit code 0
```

▶ Run

TODO

● 6: Problems

☒ Terminal

✚ Python Console

1 Event Log

1: Project

Project ▾ + - | ⚙ - W1.py x

```
1 language = "Python"
2 message = "I love programming in " + language
3 print(message)
4 |
```

2: Structure

```
ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
  ↘ Class
    > .idea
    ↘ Homework
  ↘ In Class Coding
    W1.py
    ↘ Project
      > venv library root
  > External Libraries
  > Scratches and Consoles
```

3: Run

Run: W1 x

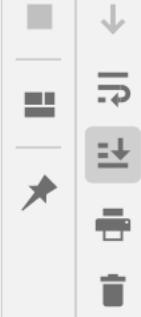


```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449"
```

```
I love programming in Python
```

```
Process finished with exit code 0
```

4: Favorites



▶ Run

TODO

6: Problems

Terminal

Python Console

1 Event Log

ITP449_Fall2020 > Class > In Class Coding > W1.p

W1 ▾

1: Project

7: Structure

★ 2: Favorites

Project ▾ + - W1.py ×

```
ITP449_Fall2020 C:\Users\1 lastName = "Steinbeck"  
Class 2 print(lastName)  
.idea 3 print(lastName.upper())  
Homework
```

Scratches and consult

Run:  W1 X

—

C:\Users\Reza\Desktop\ITP449_Fall2020\class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449

Steinbeck

STEINBECK

Process finished with exit code 0



▶ 4: Run ⌂ TODO ⚡ 6: Problems ✎ Terminal ⚡ Python Console ⚡ 1 Event Log

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
- Class
- .idea
- Homework
- In Class Coding
 - W1.py
- Project
- venv library root

External Libraries

Scratches and Consoles

Run: W1 ×

C:\Users\Reza\Desktop\ITP449_Fall2020\W1.py

Process finished with exit code 0

2: Favorites

▶ Run

TODO

● Problems

☒ Terminal

✚ Python Console

1 Event Log

COMMON STRING METHODS

Method	Description
s.upper()	Returns the uppercase version of the string.
s.lower()	Returns the lowercase version of the string.
s.swapcase()	Returns a new string where the case of each letter is switched.
s.capitalize()	Returns a new string where the first letter is capitalized and the rest are lowercases.
s.title()	Returns a new string where the first letter of each word is capitalized and all others are lowercase.
s.strip()	Returns a string where all the white space (tabs, spaces, and newlines) at the beginning and end is removed.
s.replace(old, new)	Returns a new string where occurrences of the string old are replaced with the string new.

Getting input

1: Project

2: Structure

2: Favorites

Project ▾ + - | ⚙ - W1.py ×

- ✓ ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
 - > .idea
 - Homework
 - ✓ In Class Coding
 - W1.py
- Project
- > venv library root
- External Libraries
- Scratches and Consoles

```
1 name = input("What is your name? ")  
2 print("Hi", name)  
3
```

Run: W1 ×

⚙ -

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Rez

Hide Shift+Escape

What is your name? *Tommy*

Hi Tommy

Process finished with exit code 0

Do the following:

Get 2 numbers from input and display the sum
of the numbers

ITP449_Fall2020 > Class > In Class Coding > W1.p

W1 ▾

1: Project

7: Structure

★ 2: Favorites

Project ▾ + - W1.py ×

```
ITP449_Fall2020 C:\Users\1 num1 = input("Enter a number: ")  
Class 2 num2 = input("Enter another number: ")  
.idea 3 print(num1 + num2)  
Homework
```

Run:  W1 

```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449
Enter a number: 3
Enter another number: 3
33
Process finished with exit code 0
```

▶ 4: Run TODO ! 6: Problems Terminal ✎ Python Console

1 Event Log

❑ Packages uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F 7:1 CRLF UTF-8 4 spaces Python 3.8 (Class) 🔒

1: Project

Project ▾ + - | W1.py x

```
1 num1 = int(input("Enter a number: "))
2 num2 = int(input("Enter another number: "))
3 print(num1 + num2)
```

2: Structure

```
ITP449_Fall2020 C:\Users\Reza\Deskt... 
  Class
  .idea
  Homework
  In Class Coding
    W1.py
    Project
    venv library root
External Libraries
Scratches and Consoles
```

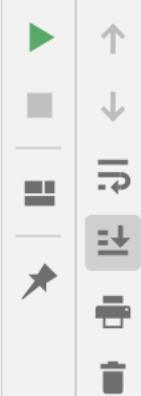
3: Run

Run: W1 x

```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449...
Enter a number: 3
Enter another number: 3
6

Process finished with exit code 0
```

4: Favorites



CONVERSION FUNCTIONS

Function	Description	Example	Returns
float(x)	Returns a floating-point value by converting x	float("10.0")	10.0
int(x)	Returns an integer value by converting x	int("10")	10
str(x)	Returns a string value by converting x	str(10)	'10'

Try running these in the Python Console in PyCharm

Expressions and Operations

variable

Variables are the way we label and access data. The contents of a variable can vary.

int Integers 3 -1 0 2019

float Real numbers 3.14 -12.0

str Character strings "hi" "22" ""

bool Boolean True False



ARITHMETIC OPERATIONS

Category	Operators
Parentheses (grouping)	()
Exponent	$a^{**}b$
Positive, Negative	$+a, -a$
Multiplication, Division, Modulus	$a * b, a / b, a // b, a \% b$
Addition, Subtraction	$a + b, a - b$

ARITHMETIC OPERATIONS int

Operator	Description	Example	Evaluates To
+	Addition	7 + 3	10
-	Subtraction	7 - 3	4
*	Multiplication	7 * 3	21
/	Division (True)	7 / 3	2.333333
//	Division (Integer)	7 // 3	2
%	Modulus	7 % 3	1
**	Exponent	7 ** 3	343

ARITHMETIC FUNCTIONS float

Operator	Description	Example	Evaluates To
+	Addition	7.0 + 3.0	10.0
-	Subtraction	7.0 - 3.0	4.0
*	Multiplication	7.0 * 3.0	21.0
/	Division (True)	7.0 / 3.0	2.333333
//	Division (Integer)	7.0 // 3.0	2.0
%	Modulus	7.0 % 3.0	1.0
**	Exponent	7.0 ** 3.0	343.0

1: Project

ITP449_Fall2020 C:\Users\1

Class .idea Homework In Class Coding W1.py

2: Structure

Python Console

```
>>> 4 + 3
7
>>> 4 * 3
12
>>> 4.0 + 3.0
7.0
>>> 4.0 * 3.0
12.0
>>>
```

3: Favorites

4: Run TODO 6: Problems Terminal Python Console

true division

What we typically think of "division" as. Always returns a float regardless of input types.

10/5 2.0

10.0/5 2.0

4/3 1.3333

99/100.0 0.99

integer division

Returns only the `int` part of the division.

Truncates the decimal part of the answer.

10//5 2

4//3 1 (not 1.3333)

99//100 0 (not 0.9999)

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
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 - In Class Coding
 - W1.py
- External Libraries
- Scratches and Consoles

Run: W1 ×

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449"

21.900000000000002

101.9

Process finished with exit code 0

2: Favorites



Branching

branching

Make a decision to take one path or another. Use the `if` structure with a condition (a yes or no question) that evaluates to true or false.

```
if condition:  
    statement1  
else:  
    statement2  
    statement3
```

COMPARISON OPERATORS

Operator	Meaning	Sample Condition	Evaluates To
<code>==</code>	equal to	<code>5 == 5</code>	True
<code>!=</code>	not equal to	<code>8 != 5</code>	True
<code>></code>	greater than	<code>3 > 10</code>	False
<code><</code>	less than	<code>5 < 8</code>	True
<code>>=</code>	greater than or equal to	<code>5 >= 10</code>	False
<code><=</code>	less than or equal to	<code>5 <= 5</code>	True

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
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 - W1.py
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Run: W1 ×

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py"

Enter your password: *secret*

Access Granted

Process finished with exit code 0

2: Favorites



▶ Run

TODO

6: Problems

Terminal

Python Console

1 Event Log

Do the following:

Get age from input and display a message that states whether the person can vote or not.

1: Project

Project ▾ W1.py ×

```
1 age = int(input("Enter your age: "))

2 if age >= 18:
3     print("You can vote!")
4 else:
5     print("You can't vote yet!")

6
7
8
```

2: Structure

External Libraries

Scratches and Consoles

3: Run

W1 ×

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449

Enter your age: 10

You can't vote yet!

Process finished with exit code 0

4: Favorites

Run Top Problems Terminal Python Console



Type here to search

Frontend Log
6:44 PM
9/7/2020

blocks

Multiple statements executed during branching.
A block is defined when one or more lines are
indented by the same amount within a branching
statement.

```
if condition:  
    statement1  
    statement2  
else:  
    statement3  
    statement4
```

Do the following:

Get age from input and display a message that states that the person can vote if they are over 18 and the number of years until they can vote if they are under 18.

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
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- Scratches and Consoles

Run: W1 ×

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449"

Enter your age: 10

You can vote in 8 years!

Process finished with exit code 0

2: Favorites



The screenshot shows the PyCharm IDE interface with the following details:

- Project Bar:** Shows the project name "ITP449" and the file "ITP449_Lecture_W02_1.py" is selected.
- Code Editor:** Displays the following Python code:

```
1 age = int(input("Enter your age: "))
2
3 if age >= 18:
4     print("You can vote!")
5 else:
6     years = 18 - age
7     print("You can vote in " + str(years) + " years!")
8
```
- Run Tab:** Shows the output of running the script:

```
Run: ITP449_Lecture_W02_1
/Users/ari-admin/ITP449/bin/python /Users/ari-admin/PycharmProjects/ITP449/ITP449_Lecture_W02_1.py
Enter your age: 19
You can vote!

Process finished with exit code 0
```
- Status Bar:** Shows the file encoding as "UTF-8", line width as "4 spaces", and other system information.

1: Project

2: Structure

3: Run

4: Favorites

5: Event Log

Project W1.py

```
1 age = int(input("Enter your age: "))
2
3 if age >= 18:
4     print("You can vote!")
5 else:
6     years = 18 - age
7
8 print("You can vote in", years, "years!")
```

Run: W1

▶ Enter your age: 19
You can vote!
Traceback (most recent call last):
 File "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py", line 8, in <module>
 print("You can vote in", years, "years!")
NameError: name 'years' is not defined

Run

TODO

Problems

Terminal

Python Console

Event Log

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
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 - In Class Coding
 - W1.py
- Project
- venv library root
- External Libraries
- Scratches and Consoles

2: Structure

3: Favorites

4: Run

PEP 8: W391 blank line at end of file

W1.py x

```
1     favFood = input("Enter favorite food: ")
2     if favFood == "pizza":
3         print("Your favorite food is pizza")
4         favTopping = input("Enter favorite topping: ")
5         if favTopping == "sausage":
6             print("Your favorite topping is sausage")
7             print("Me too")
8         else:
9             print("Your favorite food is", favFood)
10        print("Have a great day!")
```

Run: W1 x

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449...

Enter favorite food: *pasta*

Your favorite food is pasta

Have a great day!

Process finished with exit code 0

4: Run TODO 6: Problems Terminal Python Console 1 Event Log

7:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

What if you want to choose
between more than two options?

if-elif statements

Allows for multiple conditions and statements.

```
if condition1:  
    statement1  
elif condition2:  
    statement2  
elif condition3:  
    statement3  
...  
else:  
    defaultStatement
```

1: Project

2: Structure

2: Favorites

Project ▾      W1.py ×

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 └─ Class
 └─ .idea
 └─ Homework
 └─ In Class Coding
 └─ W1.py
 └─ Project
 └─ venv library root

External Libraries
Scratches and Consoles

Run:  W1 ×

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/CL

Your midterm exam score: 88

B

 Run TODO Problems Terminal Python Console

1 Event Log

The truth is ...

numbers

0 and 0.0 are **False** and all other numbers, positive and negative, are **True**

strings

The empty string "" is **False** and all other strings are **True**

other variables

Anything that is considered empty is **False** and everything else is **True**

1: Project

2: Structure

2: Favorites

Project ▾ + - | ⚙ - W1.py x

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020\Class\W1.py

- ✓ ITP449_Fall2020
 - > Class
 - > .idea
 - > Homework
 - ✓ In Class Coding
 - W1.py
- > External Libraries
- > Scratches and Consoles

```
1 mystery = "chicken"
2
3 if mystery:
4     print(mystery, "is Ture!")
5
6
```

Run: W1 x

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"
chicken is Ture!
```

```
Process finished with exit code 0
```

1: Project

2: Structure

2: Favorites

Project ▾ + - | ⚙ - W1.py ×

```
1 mystery = 0
2
3 if mystery:
4     print(mystery, "is True!")
5 else:
6     print(mystery, "is False!")
```

```
> ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
    > Class
        > .idea
        > Homework
    > In Class Coding
        W1.py
    Project
    > venv library root
> External Libraries
> Scratches and Consoles
```

Run: W1 ×

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/CL
0 is False!
```

```
Process finished with exit code 0
```

1: Project 2: Structure 3: Favorites

1 x = False
2
3 if x:
4 print("x is Ture!")
5 else:
6 print("x is False!")
7
8 y = "False"
9
10 if y:
11 print("y is Ture!")
12 else:
13 print("y is False!")

What type of variable is x?
What type of variable is y?

Run: W1 ×

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/CL
↑ x is False!
↓ y is Ture!
→
» » Process finished with exit code 0

▶ 4: Run TODO 6: Problems Terminal Python Console 1 Event Log

Packages uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F 4:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

compound conditions

Combine simple conditions together with logical operators **not**, **and**, **or**

not condition Negates a Boolean expression

and Both must be true to resolve to true

or Either may be true to resolve to true

TRUTH TABLE

A	B	A and B	A or B	not A
True	True	True	True	False
True	False	False	True	False
False	True	False	True	True
False	False	False	False	True

do the following:

Pick a number between 1 and 10 and display whether the number is even or odd. If the number is less than or greater than 10, display an error message.

1: Project

2: Structure

3: Favorites

2: Favorites

Project W1.py

```
1 number = int(input("Enter a number: "))
2
3 if number < 1 or number > 10:
4     print("You must enter a number between 1 and 10!")
5 elif number % 2 != 0:
6     print(number, "is an odd number!")
7 else:
8     print(number, "is an even number!")
```

Run: W1

```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"
Enter a number: -1
You must enter a number between 1 and 10!

Process finished with exit code 0
```

Run

TODO

Problems

Terminal

Python Console

Event Log

Loops

while loop

As long as a condition is true, the while loop is executed. When the condition is false, the loop exits.

while condition:

statement1

statement2

Project ▾

ITP449_Fall2020 C:\Users\1 ITP449_Fall2020
 └── Class
 ├── .idea
 └── Homework
 └── In Class Coding
 └── W1.py

Project
 └── venv library root

External Libraries

Scratches and Consoles

Run: W1

4 bottles of cold brew coffee on the wall
Take one down and pass it around
3 bottles of cold brew coffee on the wall
Take one down and pass it around
2 bottles of cold brew coffee on the wall
Take one down and pass it around
1 bottles of cold brew coffee on the wall
Take one down and pass it around
Cold brew coffee is all gone!

▶ 4: Run

TODO

6: Problems

Terminal

Python Console

1 Event Log

do the following:

Write code to get the following output

Do you want cream (y/n): **x**

Do you want cream (y/n): **z**

Do you want cream (y/n): **y**

Here's your coffee with cream

Process finished with exit code 0

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
 - .idea
 - Homework
 - In Class Coding
 - W1.py
- Project
- venv library root
- External Libraries
- Scratches and Consoles

2: Structure

Run: W1 ×

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Cl
Do you want cream (y/n):
Do you want cream (y/n):
Do you want cream (y/n):
Here is your coffee with cream!

Process finished with exit code 0

2: Favorites

1: Project 1: Structure

Project W1.py

```
1 counter = 10
2 while counter > 0:
3     print(counter)
4     counter = counter + 1
5 print("Never!")
```

How long will this program run?

2: Favorites

Run: W1

Run
220773
220996
220997
220998
220999
221000
221001
221002
221003

4: Run 6: Problems Terminal Python Console 1 Event Log

Packages uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F 6:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

1: Project

A tree view of the project structure. The root is 'ITP449_Fall2020' containing 'Class', '.idea', 'Homework', and 'In Class Coding'. 'In Class Coding' contains 'W1.py'. Other items include 'Project', 'venv library root', 'External Libraries', and 'Scratches and Consoles'.

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
 - .idea
 - Homework
 - In Class Coding
 - W1.py
- Project
- venv library root
- External Libraries
- Scratches and Consoles

2: Structure

A code editor showing Python code. The code initializes a variable 'S' to 0, sets 'areMore' to True, prints a welcome message, and enters a loop where it repeatedly asks for input, adds the number to 'S', and updates 'areMore' based on whether the number is less than 0.

```
1 S = 0
2 areMore = True
3 print("Enter positive numbers or -1 to quit")
4 while areMore:
5     nextNum = int(input("Enter a number: "))
6     if nextNum < 0:
7         areMore = False
8     else:
9         S = S + nextNum
10    print("The sum is", S)
```

Run: W1

A series of run control buttons: green play, up arrow, down arrow, left arrow, right arrow, and trash can.

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/CL
Enter positive numbers or -1 to quit
Enter a number: 2
Enter a number: 5
Enter a number: 3
Enter a number: -1
The sum is 10

2: Favorites

for loop

For loops repeat part of a program based on a sequence.

```
for variable in sequence  
    # execute code in every loop  
# execute code after the loop
```

sequence

A group of items stored together in a collection.

The sequence can be a list, a tuple, a string, a range...

e.g. ["a", "b", "c"]

e.g. ["hello"]

range() Generates a sequence of numbers

range(int start, int stop, int
step)

```
# range(4) - 0, 1, 2, 3
# range(10, 25, 5) - 10, 15, 20
# start is optional (default 0)
# stop is required
# step is optional (default 1)
# Stop is not included in the result
```

1: Project 1: Structure

Project W1.py

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020\Class\W1.py

Class .idea Homework In Class Coding W1.py Project venv library root External Libraries Scratches and Consoles

```
for num in range(3):
    print(num)
print('Done!')
```

Run: W1

Run Up Down Stop Refresh Print Stop

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"

0
1
2
Done!

Process finished with exit code 0

2: Favorites

Run TODO Problems Terminal Python Console Event Log

Packages Uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F) 4:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

1: Project 1: Structure

Project W1.py

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020\Class\W1.py

1 for num in range(3):
2 print(num + 2)
3 print('Done!')

4
5
6
7

External Libraries
Scratches and Consoles

2: Favorites

Run: W1

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"

2
3
4
Done!

Process finished with exit code 0

Run, Stop, Refresh, Save, Find, Replace, Help, Shift+Escape

4: Run TODO 6: Problems Terminal Python Console

Event Log

Hide active tool window

4:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

1: Project

2: Structure

2: Favorites

Project ▾ + - | ⚙ - W1.py ×

- ✓ ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - ✓ Class
 - > .idea
 - Homework
 - ✓ In Class Coding
 - W1.py
- > Project
- > venv library root
- > External Libraries
- > Scratches and Consoles

```
1 msg = "spamalot"
2
3 for letter in msg:
4     print(letter.upper(), end=" ")
5
6
7
8
```

A 1 ✘ 1 ^ ↻

Run: W1 ×

⚙ -

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Cl
  S P A M A L O T
Process finished with exit code 0
```

▶ Run

TODO

⚠ 6: Problems

☒ Terminal

✚ Python Console

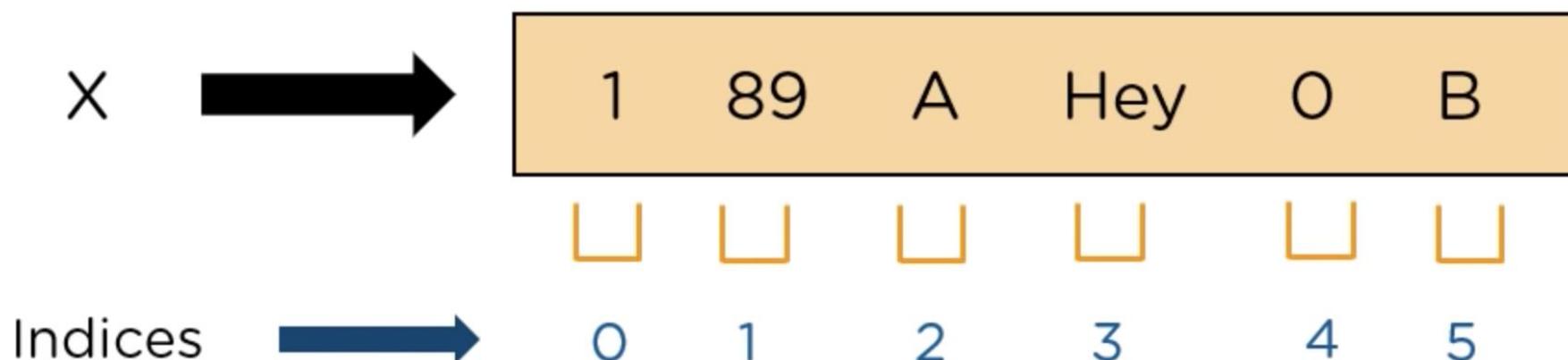
1 Event Log

Lists

list

A collection of values of any type. Lists can contain other lists.

X = [1, 89, "A", "Hey", "O" , "B"]



1: Project 2: Structure 3: Favorites

Project W1.py

```
1 num = [1, 2]
2 print(num)
3
4 letter = ["a", "b", "c"]
5 print(letter)
6
7 mix = [1, "a", 2, "b"]
8 print(mix)
9
10 mix1 = [[1, 2], ["a", "b", "c"]]
11 mix2 = [num, letter]
12 print(mix1)
13 print(mix2)
```

Run: W1

Run Up Down Stop Run All Run Last

1: Run 2: TODO 3: Problems 4: Terminal 5: Python Console 6: Event Log

Packages uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F) 9:1 CRLF UTF-8 4 spaces Python 3.8 (Class)

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
- Class
- .idea
- Homework
- In Class Coding
 - W1.py
- Project
- venv library root

External Libraries

Scratches and Consoles

2: Structure

3: Favorites

4: Run

5: TODO

6: Problems

7: Terminal

8: Python Console

9: Event Log

10: Packages

11: CRLF

12: UTF-8

13: 4 spaces

14: Python 3.8 (Class)

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1: Project 1: Structure 1: Favorites

Project ▾ + - | ⚙ -

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020

- Class
 - .idea
 - Homework
- In Class Coding
 - W1.py

External Libraries

Scratches and Consoles

W1.py x

```
1 mix = [1, "a", 2, "b"]
2
3 print(mix[:2])
4 print(mix[2:])
5 print(mix[1:3])
6
7 print(mix[::-1])
8
9
10
```

Note that the end index is not included

Run: W1 x

Run: W1 x

▶

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In

```
[1, 'a']
[2, 'b']
['a', 2]
['b', 2, 'a', 1]
```

Process finished with exit code 0

2: Run 4: Run 5: TODO 6: Problems 7: Terminal 8: Python Console 9: Event Log

Packages uninstalled successfully: Uninstalled packages: 'num... (today 12:25 F 2:9 CRLF UTF-8 4 spaces Python 3.8 (Class)

ITP449_Fall2020 > Class > In Class Coding > W1.p

W1 ▾

1: Project

7: Structure

★ 2: Favorites

The screenshot shows the PyCharm IDE interface. The left sidebar displays the project structure under 'ITP449_Fall2020'. The 'In Class Coding' folder contains a file named 'W1.py', which is currently selected and highlighted with a gray background. The right pane is the code editor for 'W1.py', showing the following Python code:

```
1 num = [1, 2
2 print(num)
3
4 num.append(3)
5 print(num)
6
7 letter = "C"
8 num.extend(letter)
9 print(num)
10
11 num.insert(1, 5)
12 print(num)
```

Run:  W1 

```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In  
[1, 2]  
[1, 2, 3]  
[1, 2, 3, 'a', 'b', 'c']  
[1, 'x', 2, 3, 'a', 'b', 'c']
```

What is the difference between append and extend?

▶ 4: Run TODO ! 6: Problems ➔ Terminal ✎ Python Console

1 Event Log

❑ Packages uninstalled successfully: Uninstalled packages: 'num... (today 12:25 P 13:1 CRLF UTF-8 4 spaces Python 3.8 (Class) 🔒

1: Project

2: Structure

2: Favorites

Project ▾     W1.py x

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020

- Class
- .idea
- Homework
- In Class Coding
 - W1.py
- Project
- venv library root

External Libraries

Scratches and Consoles

```
1 num = [1, 2]
2 num.append(3)
3 letter = ["a", "b", "c"]
4 num.extend(letter)
5 num.insert(1, "x")
6 num.insert(2, "x")
7 print(num)
8
9 num.remove("x")
10 print(num)
```

Run:

W1 x



```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In
```

```
[1, 'x', 'x', 2, 3, 'a', 'b', 'c']
[1, 'x', 2, 3, 'a', 'b', 'c']
```

```
Process finished with exit code 0
```

Run

TODO

Problems

Terminal

Python Console

Event Log

Project ▾ + - | ⚙ - W1.py x

ITP449_Fall2020 C:\Users\Reza
 Class
 .idea
 Homework
 In Class Coding
 W1.py
 Project
 venv library root
External Libraries
Scratches and Consoles

```
1 num = [1, 3, 2]
2 letter = ["a", "c", "b"]
3 mix = num + letter
4
5 num.sort()
6 print(num)
7
8 letter.sort()
9 print(letter)
10
11 mix.sort()
12 print(mix)
```

Run: W1 x

[1, 2, 3]
['a', 'b', 'c']

Traceback (most recent call last):

 File "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py", line 11, in <module>
 mix.sort()

 TypeError: '<' not supported between instances of 'str' and 'int'

1: Project 1: Structure

Project + - | ⚙ - W1.py x

ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020\Class\W1.py

Class .idea Homework In Class Coding W1.py Project venv library root External Libraries Scratches and Consoles

```
1 x = [2, 40, 21, 5, 103]
2
3 # built-in functions
4 print(len(x))
5 print(min(x))
6 print(max(x))
7 print(sum(x))
8
```

Run: W1 x

Run: C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/W1.py"

5
2
103
171

Process finished with exit code 0

2: Favorites

Run TODO Problems Terminal Python Console Event Log

Packages uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F) 5:4 CRLF UTF-8 4 spaces Python 3.8 (Class)

Do the following:

Calculate and display the mean of the following list [2, 40, 21, 5, 103]

1: Project

Project ▾ + - | ⚙ -

- ITP449_Fall2020 C:\Users\Reza\Desktop\ITP449_Fall2020
 - Class
 - .idea
 - Homework
 - In Class Coding
 - W1.py
- Project
- venv library root
- External Libraries
- Scratches and Consoles

2: Structure

W1.py x

```
1 x = [2, 40, 21, 5, 103]
2
3 print(sum(x)/len(x))
4
```

Run: W1 x



▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In C:\Users\Reza\Desktop\ITP449_Fall2020\Class\W1.py"

34.2



Process finished with exit code 0

2: Favorites

Run: W1 x

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In C:\Users\Reza\Desktop\ITP449_Fall2020\Class\W1.py"

34.2

Process finished with exit code 0

Dictionaries

Dictionary: A collection of data in the form of pairs:
Key: Value

List:

- Ordered sequence of things
- Items accessed by index
- May contain repeated values

Dictionary:

- Items not ordered sequentially
- Items accessed by key
- Keys are unique, but may have repeated values

1: Project

2: Structure

3: Favorites

W1.py

```
Pr... + | - W1.py x
I ITP449_Fall2020 C: 1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}
I I Class
I .idea
I Homework
I In Class Coding
I W1.py
I Project
I venv Library
> External Libraries
> Scratches and Cons
```

Run: W1

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py"

dict_keys(['Pizza', 'Burger', 'Biryani', 'Hot Dog', 'Sandwich'])
dict_values([12, 8, 15, 5, 7])
dict_items([('Pizza', 12), ('Burger', 8), ('Biryani', 15), ('Hot Dog', 5), ('Sandwich', 7)])

Process finished with exit code 0

1: Project

Pr... ▾ + - ⚙ W1.py x

```
ITP449_Fall2020 C: 1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}
Class
    .idea
    Homework
    In Class Coding
        W1.py
        Project
        venv Library
External Libraries
Scratches and Cons
```

```
1
2
3 print(foodMenu['Burger'])
4
```

2: Structure

External Libraries

Scratches and Cons

Access item value by its key

2: Favorites

Run: W1 x

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In
```

8

Process finished with exit code 0

ITP449_Fall2020 › Class › In Class Coding › W1.p

W1 ▾

1: Project

- 7: Structure

★ 2: Favorites

Pr... ▾  W1.py

The screenshot shows the PyCharm IDE interface. On the left is a file browser tree:

- ITP449_Fall2020
- Class
 - .idea
 - Homework
 - In Class Coding
 - W1.py
 - Project
- External Libraries
- Scratches and Cons

The main code editor window contains the following Python code:

```
1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}
2
3 print(foodMenu[1])
4
```

A blue callout box in the bottom right corner of the editor area contains the text "Items are not indexed!".

Items are not indexed!

Run:  W1 X

—

```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In  
Traceback (most recent call last):  
  File "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In Class Coding/W1.py", line 3, in <module>  
    print(foodMenu[1])  
KeyError: 1  
  
Process finished with exit code 1
```

4: Run

TO DO

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Lens

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[Cancel](#)

1 Event Log

Packages uninstalled successfully: Uninstalled packages: 'numpy' (today 12:25 F 4:1 CRLF UTF-8 4 spaces Python 3.8 (Class) ?

1: Project

ITP449_Fall2020 C: 1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}

Class

.idea

Homework

In Class Coding

W1.py

Project

venv Library

External Libraries

Scratches and Cons

Loop over the keys

2: Structure

Run: W1

C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In

Pizza

Burger

Biryani

Hot Dog

Sandwich

Process finished with exit code 0

2: Favorites

Run

TODO

Problems

Terminal

Python Console

Event Log

1: Project

ITP449_Fall2020 C: 1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}

Class

.idea

Homework

In Class Coding

W1.py

Project

venv Library

External Libraries

Scratches and Cons

2: Structure

Run: W1



C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In

12

8

15

5

7

Process finished with exit code 0

2: Favorites

Run

TODO

Problems

Terminal

Python Console

Event Log

1: Project

ITP449_Fall2020 C: 1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}

Class

.idea

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2: Structure

Run: W1



```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In
('Pizza', 12)
('Burger', 8)
('Biryani', 15)
('Hot Dog', 5)
('Sandwich', 7)
```

```
Process finished with exit code 0
```

2: Favorites

Run

TODO

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1: Project

```
W1.py x
ITP449_Fall2020 C: 1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}
Class 2 foodMenu["Soup"] = 6
Homework 3 print(foodMenu)
In Class Coding 4
```

1 ^ v

2: Structure

```
W1.py
Project
venv Library
External Libraries
Scratches and Cons
```

Item with the new key will be added

Run: W1 x



```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In 0
{'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7, 'Soup': 6}
```

```
Process finished with exit code 0
```

2: Favorites

1: Project 2: Structure 3: Favorites

Project: ITP449_Fall2020

W1.py

```
1 foodMenu = {'Pizza': 12, 'Burger': 8, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}
2 foodMenu["Burger"] = 9
3 print(foodMenu)
4 |
```

The value of the item with the repeated key will be updated

Run: W1



```
C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In 0
{'Pizza': 12, 'Burger': 9, 'Biryani': 15, 'Hot Dog': 5, 'Sandwich': 7}
```

```
Process finished with exit code 0
```

1: Project

2: Structure

3: Favorites

```
W1.py x
ITP449_Fall2020 C: 1 myList1 = [8, 12]
                     2 myList2 = [12, 8]
                     3 print(myList1 == myList2)

                     4
                     5 myDict1 = {'Pizza': 12, 'Burger': 8}
                     6 myDict2 = {'Burger': 8, 'Pizza': 12}
                     7 print(myDict1 == myDict2)
                     8
```

List: Order matters!
Dictionary: Order does not matter!

Run: W1 x

▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In 0
False
True

Process finished with exit code 0

Modules

module

Modules are files that contain code meant to be used for specific purposes in programs. Python has many built-in modules.

```
import moduleName  
moduleName.functionName ()
```

1: Project

2: Structure

2: Favorites

Project ▾      W1.py ×

```
1 import random
2
3 # random integer number selected from: 0, 1, 2, 3, 4, 5
4
5 number = random.randrange(6)
6 print(number)
```

```
7 |
```

Run:  W1 ×

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In 0
4
Process finished with exit code 0
```

         Run  TODO  Problems  Terminal  Python Console  Event Log Packages uninstalled successfully: Uninstalled packages: 'nump... (today 12:25 F 7:1 CRLF UTF-8 4 spaces Python 3.8 (Class) 

1: Project

2: Structure

3: Favorites

Project ▾      W1.py ×

```
1 import random
2
3 # random integer number selected from: 1, 2, 3, 4, 5, 6
4
5 number = random.randrange(6) + 1
6 print(number)
7 |
```

```
> External Libraries
> Scratches and Consoles
```

Run:  W1 ×

```
▶ C:\Users\Reza\Desktop\ITP449_Fall2020\Class\venv\Scripts\python.exe "C:/Users/Reza/Desktop/ITP449_Fall2020/Class/In 0
2
Process finished with exit code 0
```

▶  Run

TODO

● 6: Problems

Terminal

Python Console

1 Event Log

Summary

- Review of basic Python commands and syntax
- We will continue this in the next lecture