IE 345-K "Introduction to Deep Learning: Fundamental Concepts"

Reference: Pages from 19 to 26 of the Book "Data Analysis From Scratch With Python", Peters Morgan

Python Quick Review

Matematical Operations [Pag. 19]

In [1]:
```
3+3
```
Out[1]: 6

In [2]:
```
print(3+3)
```
```
6
```

In [3]:
```
7-1
```
Out[3]: 6

In [4]:
```
5*2
```
Out[4]: 10

In [5]:
```
20/5
```
Out[5]: 4.0

In [6]:
```
9%2   #modulo operation, returns the remainder of the division
```
Out[6]: 1

In [7]:
```
2**3  #exponentiation, 2 to the 3rd power
```
Out[7]: 8

Assigning Values to Variables [Pag. 19]

In [8]:
```
myName = "Thor"
print(myName)  #output is "Thor"
x=5
y=6
print(x + y)  # result is 11
print(x*3)     #result is 15
```
```
Thor
11
15
```

Working on strings and variables [Pag. 19-20]

In [9]:
```
myName = "Thor"
age = 25
hobby = "programming"
print('Hi, my name is '+ myName + 'and my age is ' + str(age) + '. Anyway, my hobby is '+ hobby +
'.')

# Everything after the hashtag in this line is a comment
# Make it understandable to you, learners, and other programmers
```
```
Hi, my name is Thorand my age is 25. Anyway, my hobby is programming.
```

Comparison Operators [Pag. 20]

```
In [10]: 8 == 8
Out[10]: True

In [11]: 8 > 4
Out[11]: True

In [12]: 8 < 4
Out[12]: False

In [13]: 8 != 4
Out[13]: True

In [14]: 8 != 8
Out[14]: False

In [15]: 8 >= 2
Out[15]: True

In [16]: 8 <= 2
Out[16]: False

In [17]: 'hello' == 'hello'
Out[17]: True

In [18]: 'cat'!= 'dog'
Out[18]: True
```

Boolean Operator (and, or, not) [Pag. 21]

```
In [19]: 8>3 and 8>4
Out[19]: True

In [20]: 8>3 and 8>9
Out[20]: False

In [21]: 8>9 and 8>10
Out[21]: False

In [22]: 8>3 or 8>800
Out[22]: True

In [23]: 'hello' == 'hello' or 'cat'=='dog'
Out[23]: True
```

if, Elif, and Else Statements (for Flow Control) [Pag. 21]

In [24]:
```
print("What's your email?")
myEmail = input()
savedPassword = 'lisber'
print("Type in your password.")
typedPassword = input()
if typedPassword == savedPassword:
    print("Congratulations! You're now logged in.")
else:
    print("Your password is incorrect. Please try again.")
```

```
What's your email?
lisberarana@gmail.com
Type in your password.
lisber
Congratulations! You're now logged in.
```

While loop [Pag. 21]

In [25]:
```
inbox = 0
while inbox<10:
    print("You have a message.")
    inbox=inbox+1
```

```
You have a message.
You have a message.
You have a message.
You have a message.
You have a message.
You have a message.
You have a message.
You have a message.
You have a message.
You have a message.
```

In [26]:
```
# LOOP DOESN'T EXIT UNTIL YOU TYPED 'Casanova'
name = ''
while name != 'Casanova':
    print('Please type your name. ')
    name = input()
print('Congratulations!')
```

```
Please type your name.
Luis
Please type your name.
Jorge
Please type your name.
Casanova
Congratulations!
```

For loop [Pag. 22-23]

In [27]:
```
for i in range(10):
    print(i**2)
```

```
0
1
4
9
16
25
36
49
64
81
```

In [28]:
```
#ADDING NUMBERS FROM 0 TO 100
total = 0
for num in range(101):
    total = total + num
print (total)
```

```
5050
```

In [29]:
```
# ANOTHER EXAMPLE. POSITIVE AND NEGATIVE REVIEWS
all_reviews = [5,5,4,4,5,3,2,5,3,2,5,4,3,1,1,2,3,5,5]
positive_reviews = []
for i in all_reviews:
    if i>3:
        print('Pass')
        positive_reviews.append(i)
    else:
        print('Fail')
print(positive_reviews)
print(len(positive_reviews))
ratio_positive=len(positive_reviews)/len(all_reviews)
print('Percentage of positive reviews: ')
print(ratio_positive *100)
```

```
Pass
Pass
Pass
Pass
Pass
Fail
Fail
Pass
Fail
Fail
Pass
Pass
Fail
Fail
Fail
Fail
Fail
Pass
Pass
[5, 5, 4, 4, 5, 5, 5, 4, 5, 5]
10
Percentage of positive reviews:
52.63157894736842
```

Functions [Pag. 24]

In [30]:
```
def hello():
    print('Hello word!')
hello()
```

```
Hello word!
```

In [41]:
```
#DEFINE THE FUNCTION, TELL WHAT IT SHOULD DO AND THEN USE OR CALL IT LATER

def add_numbers(a, b):
    print(a+b)
add_numbers(5, 10)
add_numbers(35, 55)
```

```
15
90
```

In [32]:
```
#CHECK IF A NUMBER IS ODD OR EVEN.

def even_check(num):
    if num % 2 == 0:
        print('Number is even.')
    else:
        print('Hmm, it is odd.')
even_check(50)
even_check(51)
```

```
Number is even.
Hmm, it is odd.
```

Lists [Pág. 24]

In [40]:
```
my_list=['eggs', 'ham', 'bacon']  #list with string
colours=['red','green', 'blue']
cousin_ages=[33, 35, 42]  #list with integers
mixed_list=[3.14, 'circle', 'eggs', 500] #list with integers and strings

#Working with list
colours = ['red', 'blue','green']
colours[0] #indexing starts at 0, so it returns firts item in the list which is 'red'
colours[1] #returns second item, which is 'green'

#Slicing the list
my_list=[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
print(len(my_list))  # return 10

#Assigning new values to list items
colours = ['red', 'green', 'blue']
colours[0]='yellow'
print(colours)  #result should be ['yellow', 'green', 'blue']

#Concatenation and appending
colours = ['red', 'green', 'blue']
colours.append('pink')
print(colours)

#The result will be:  ['red', 'green', 'blue', 'pink']
fave_series=['GOT', 'TWD', 'WW']
fave_movies=['HP', 'LOTR', 'SW']
my_list=['eggs', 'ham', 'bacon']  #list with string
colours=['red','green', 'blue']
cousin_ages=[33, 35, 42]  #list with integers
mixed_list=[3.14, 'circle', 'eggs', 500] #list with integers and strings

fave_all = fave_series + fave_movies
print(fave_all)

#This prints ['GOT', 'TWD', 'WW', 'HP', 'LOTR', 'SW']
```

```
10
['yellow', 'green', 'blue']
['red', 'green', 'blue', 'pink']
['GOT', 'TWD', 'WW', 'HP', 'LOTR', 'SW']
```

Qualquer dúvida escreva para:

Pablo David Minango Negrete pablodavid218@gmail.com
Lisber Arana Hinostroza lisberarana@gmail.com