Solution - Exercises - W4D2

Edit Chapter

Exercises XP

Exercise 1 : Favorite Numbers

```
my_fav_numbers = [1, 3, 2, 5, 7, 44]
my_fav_numbers += [55, 43]
my_fav_numbers.pop(-1)
friend_fav_numbers = [9, 8, 5, 22, 90]
our_fav_numbers = my_fav_numbers + friend_fav_numbers
```

Exercise 2: Tuple

```
print("No, it is not possible to add numbers (or anything) to a tuple. Tuples are immutable
```

Exercise 3 : Print A Range Of Numbers

`python for i in range(1, 21): print(i)`

Exercise 4: Floats

1. Can you think of another way of generating a sequence of floats? *Missing correction*
2. Create a list containing the sequence 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5 without hard-coding the sequence.

```
num = 1.5
num_list = [num]
for i in range(7):
    num += 0.5
    num_list.append(num)
print(num_list)
```

Exercise 5: Shopping List

```
basket = ["Banana", "Apples", "Oranges", "Blueberries"]
basket.remove("Banana")
basket.remove("Blueberries")
basket.append("Kiwi")
basket.insert(0, "Apples")
print(basket.count("Apples"))
basket.clear()
print(basket)

basket2 = ["Banana", "Apples", "Oranges", "Blueberries"]
while len(basket2) > 0:
    print(basket2.pop(-1))
```

Exercise 6 : Loop

1. Write a while loop that will keep asking the user for input until the input is the same as your name.

```
while True:
    name = input("whats your name?")
    if name == "Guillaume":
        break
```

Exercise 7

```
count = [1, 2, 3, 4, 5, 6, 7, 8]
for i in count:
    if count.index(i) % 2 == 0:
        print(i)
```

Exercise 8

1. Make a list of the multiples of 3 from 3 to 30. Use a `for` loop to print the numbers in your list.

```
threes = [x*3 for x in range(11)]
print(threes)
```

Exercise 9

1. Use a for loop to find the numbers which are divisible by 7 and multiple of 5, between 1500 and 2700.

```
list = [x for x in range(1500, 2700) if x%5 == 0 and x%7 == 0]
print(list)
```

Exercise 10: Favorite Fruits

```
basket = input("Enter your fav fruits: ").split(" ")
fruit = input("Enter a fruit: ")
if fruit in basket:
  print("You chose one of your favorite fruits! Enjoy!")
else:
  print("You chose a new fruit. I hope you enjoy it too!")
```

Exercise 11: Who Ordered A Pizza ?

1. Write a loop that prompts the user to enter a series of pizza toppings until they enter a ‘quit’ value.
2. As they enter each topping, print a message saying you’ll add that topping to their pizza.
3. Upon exit print all the toppings on the pizza and what the total is (10 + 2.5 for each topping)

```
toppings = []

while True:
    pizza = input("input pizza topping, when finshed write quit")
    if pizza.lower() != "quit":
        print(f"i'll add {pizza} to you're pizza")
        toppings.append(pizza)
    else:
        total = 10 + (2.5*len(toppings))
        print(f"You're toppings are {toppings}, and you're total is {total}")
        break
```

Exercise 12: Cinemax

```
total = 0
while True:
    age = input("Please enter your age: ")
    if len(age) == 0:
        break
    elif int(age) < 3:
        pass
    elif 3 <= int(age) <= 12:
        total += 10
    else:
        total += 15
print(f"Your total is {total}")

group = []
while True:
    age = input("Enter age: ")
    if len(age) == 0:
        break
    if 16 <= int(age) <= 21:
        group.append(int(age))
print(group)
```

Exercise 13 : Who Is Under 16?

```
users = ['nava', 'rafael', 'maya', 'chava', 'nonny']

for user in reversed(users):
    age = input(f'{user}, what is your age?')
    if int(age) < 16:
        users.remove(user)
    else :
        continue

print(users)
```

Or

```
users = ["adam", "bob", "charlie", "dave", "eddy"]
users_over_16 = []
for user in users:
    age = int(input(f"Hi {user}, how old are you? "))
    if age >= 16:
        users_over_16.append(user)
print(users_over_16)
```

Exercise 14: Family Members

```
family = []
while True:
    selection = int(input("Select a number 1 - 4: "))

    if selection == 1:
        new_name = input("add a name: ")
        family.append(new_name)
    elif selection == 2:
        rem_name = input("Who do you want to remove? ")
        family.remove(rem_name)
    elif selection == 3:
        print(family)

    elif selection == 4:
        break
    else:
        print("Invalid number entered")
```

Exercises XP GOLD

Exercise 1 : Concatenate Lists

1. Write a script that concatenate two lists together without using the + sign.

```
list_1 = [3, 6, 9]
list_2 = [4, 5, 7]
list_1.extend(list_2)
print(list_1)

OR

list1 = [1, 2, 3]
list2 = [4, 5, 6]
while len(list2) > 0:
    list1.append(list2.pop(0))
```

Exercise 2: Greatest Number

```
numbers = []
for i in range(3):
    numbers.append(input('Give me a number'))
print(f"The greatest number is:", max(numbers))
```

Exercise 3 : The Alphabet

1. Write a script to check whether the letters of the alphabet is a vowel or consonant.

   Hint: represent the alphabet with a string

```
import string
alpha = list(string.ascii_lowercase)
vowels = list("iouae")
for letter in alpha:
    if vowels.count(letter) > 0:
        print(letter + ": vowel")
    else:
        print(letter + ": consonant")

item = input("Enter an item: ")
print(f"{item} occurs at {alpha.index(item)}")
```

Exercise 4 :

1. Write a script that returns the index of the first occurrence of an item in a list.

Missing correction

Exercise 5 : Words And Letters

Missing correction

Exercise 6 :

1. Make a list of the numbers from one to one million, and then use a `for` loop to print the numbers.

   (If the output is taking too long, stop it by pressing ctrl-C or by closing the output window.)

```
list_of_numbers = list(range(1, 1000001))
for number in list_of_numbers:
    print(number)
```

Exercise 7 :

1. Make a list of the numbers from one to one million, and then use `min()` and `max()` to make sure your list actually starts at one and ends at one million. Also, use the `sum()` function to see how quickly Python can add a million numbers .

```
print(min(list_of_numbers))
print(max(list_of_numbers))
print(sum(list_of_numbers))
```

Exercise 8 :

```
user_list = input("Enter numbers seperated by commas: ")
user_list = user_list.split(",")
user_tuple = tuple(user_list)
print(user_list)
print(user_tuple)
```

Exercise 9 : Random Number

1. Accept input from a user if its between 1 and 9 (including).
2. Get a random number between 1 and 9. *Hint*: random module.
3. Print a message if the user guessed the correct number or not.
4. **Bonus**: use a menu to let the user keep guessing until he wants to quit
5. **Bonus 2**: on exit tally up and display total games, wins and losses

Missing part of the correction

```
import random
rand = random.randint(1, 9)
guess = 0
while guess is not rand:
    guess = int(input("Enter a number between 1-9: "))
print("you've guessed it!")
```

Exercise 10: Check Please !

```
name= input("Enter customer name: ")
waiter = input("Enter Waiter Name: ")
item = input("Enter the item ordered: ")
price = int(input(f"Enter price of {item}: "))
amount = int(input("Enter how much was ordered: "))
discount = int(input("Enter the discount: ")) # out of 100
total = price * amount - price * amount * discount / 100 + price * amount * 0.2
print(f"""
########################
name: {name}
waiter: {waiter}
{item} X {amount} = {price * amount}
discount: {discount}%
VAT: 20%
final amount: {total}
########################
""")
```

Exercises XP NINJA

Exercise 1 : Formula

```
from math import sqrt
C = 50
H = 30
answers = []
numbers = input("Enter some csv numbers: ").split(",")
for number in numbers:
    answers.append(str(round(sqrt((2*C*int(number))/H))))
print(",".join(answers))
```

Exercise 2 : List Of Numbers

1. **Bonus**: Find the sum, the average the largest and smallest number without using builtin functions.

   12.**Extra bonus**: instead of using pre-defined lists of numbers, ask the user for 10 numbers between -100 and 100.

   a. Ask the user for an integer between -100 and 100 – repeat this question 10 times. Each answer from the user should be added onto a list variable that you created earlier.

   b. After asking the user 10 times, you should now have a list of integers.

   c. Print a line to separate the input section (getting the numbers from the user) from the output section).

```
list1 = [22, 47, 99, -80, 22, 97, 54, -23, 5, 7]
for i in list1:
    print(i, end=" ")
print()
print()
list2 = sorted(list1, reverse=True)
for i in list2:
    print(i)
print()
print(sum(list1))
print([list1[0], list1[-1]])
list50 = []
for i in list1:
    if i > 50:
        list50.append(i)
print(list50)
list10 = []
for i in list1:
    if i < 10:
        list10.append(i)
print(list10)
listsquare = []
for i in list1:
    listsquare.append(i ** 2)
print(listsquare)
print(list(set(list1)), end=" ")
print(len(set(list1)))
print(sum(list1) / len(list1))
print(max(list1))
print(min(list1))
```

Exercise 3: Working On A Paragraph

```
para = "Balloons are pretty and come in different colors, different shapes, different si
       "sizes as needed. But don't make them too big or they might just pop, and then by
       "and lost for the rest of mankind. They can serve a variety of purposes, from dec
       "wars. You just have to use your head to think a little bit about what to do with

print(len(para))
print(len(para.split("."))-1)
print(len(para.split(" ")))
count = 0;
para_words = para.replace(".", "").split(" ")
for i in para_words:
    if para_words.count(i) == 1:
        count += 1
print(count)
```

Exercise 4

```
text = "New to Python or choosing between Python 2 and Python 3? Read Python 2 or Python 3.
text = text.split(" ")
for i in text:
    if text.count(i) > 1:
        print(f"{i}: {text.count(i)}")
        text = " ".join(text)
        text = text.replace(i, "")
        text = text.split(" ")
    elif text.count(i) == 1:
        print(f"{i}: {text.count(i)}")
```

Daily Challenge: Happy Birthday

```
from datetime import datetime, timedelta
birthday = input('what is your birthday ex. DD/MM/YYYY')
birthday_convert_to_date = datetime.strptime(birthday, "%d/%m/%Y")
current_date = datetime.now()
age = int((current_date - birthday_convert_to_date) / 365 / timedelta (days=1))
age_to_string = str(age)
last_digit_of_age = int(age_to_string[-1])
candles = 'i' * int(last_digit_of_age)
cake = (f'''\t ___{candles}___
       | :H:a:p:p:y:  |
     __|_____________|__
    |^^^^^^^^^^^^^^^^^^^|
    | :B:i:r:t:h:d:a:y:  |
    |                   |
    ~~~~~~~~~~~~~~~~~~~~~
    ''')

#check if leap year, print two cakes if yes
if birthday_convert_to_date.year % 4 == 0 :
    if birthday_convert_to_date.year % 100 == 0 :
        if birthday_convert_to_date.year % 400 == 0 :
            print(cake * 2)
        else :
            print(cake)
    else :
        print(cake * 2)
else :
    print(cake)
```

Feedback

Tell us what you thought about the chapter: Solution - Exercises - W4D2

0	1	2	3	4	5	6	7	8	9	10

Not at all likely — Extremely likely