Python exercices pack 1 with Bouzian

Exercice 1 : basic syntax and input/output

1. write a python protam that asks the user for their namd and age, then prints a message lik `Bonjour [name]! Vous avez [Age] ans.`

In [ ]:
```
name = input('enter your name: ')
age = int(input('enter your age: '))

print('Bonjour {}! Vous avez {} ans.'.format(name, age))
```

2. write a program that calculates and prints the area of a rectangel. ask the user for the length and width

In [ ]:
```
length = float(input('enter the length of the rectangle: '))
width = float(input('enter the  of the rectangle: '))

area = length * width
print('The area of the rectangle is {}'.format(area))
```

Exercice 2 : calculations and operators

1. wrtie a program that takes two number s as input and prints

- The sum
- The difference
- The product
- The quotient (division)

- The remainder (modulo)

In [ ]:
```
num1 = int(input('enter the values of the first number: '))
num2 = int(input('enter the values of the second number: '))

# the sum
somme = num1 + num2
print(f'the sum of two numbers is {somme}')
# the difference
diff = num1 - num2
print(f'the difference of two numbers is {diff}')
# the product
product = num1 * num1
print(f'the product of two numbers is {product}')
# the quotion(division)
division = num1 / num2
print(f'the division of two numbers is {division}')
# the remainder (modulo)
remainder = num1 % num2
print(remainder)
```

2. write a program that converts a temperature from Celsius to Fahrenheit

In [ ]:
```
Temperature_Celsius  = float(input('enter the value of the temperature on Celsius: '))

Temperature_converted_Fahrenheit  = (Temperature_Celsius * 9/5) + 32
print(f'The temperature you just entered is {Temperature_converted_Fahrenheit} Fahreneit')
```

Exercice 3: conditionals (if/else)

1. write a program that asks the user for a number and print whether it si positive, negative, or zero:

In [ ]:
```
number = int(input('enter a integer to check: '))

if number > 0:
```

```
    print('positive')
elif number == 0:
    print('zero')
else:
    print('negative')
```

2. write a program that check if number is even or odd and prints the result

In [ ]:
```
number = 5
if number % 2 == 0:
    print('even')
else :
    print('odd')
```

3. write a progr5aqm that asks teh user fot their age and prints:
   - "vous etes mineur" if the age is less than 18.
   - "vous etes majour" if the age is 18 or older.

In [ ]:
```
age = int(input('enter your age: '))
if age > 0:
    if age >= 18:
        print("vous etes majeur")
    else:
        print('vous etes mineur')
else:
    print('the age must be greater then 0!!')
```

Exercice 4 : loops (for/while)

1. wrtie a program that prints the first 10 numbers in the Fibonacci using a for loop

In [ ]:
```
a, b = 0, 1

print("the first 10 numbers in the Fibonacci sequece are: ")
```

```
for i in range(10):
    print(a, end=" ")
    a, b = b, a+b
```

2. wrtie a progra that uses a while loop to keep asking the user for anumber until they enter a number greater than 100

In [ ]:
```
number = int(input('enter a number greater then 100: '))

while True:
    if number <= 100:
        print("try again")
        number = int(input('enter a number greater then 100: '))
    else:
        print("end program")
        break
```

3. write a program that pring the multiplication table fo a number entered b the user (from 1, to 10)

In [13]:
```
n = 5
for i in range(1, 11):
    result = i * n
    print(f'{i} * {n} = {result}')
```

```
1 * 5 = 5
2 * 5 = 10
3 * 5 = 15
4 * 5 = 20
5 * 5 = 25
6 * 5 = 30
7 * 5 = 35
8 * 5 = 40
9 * 5 = 45
10 * 5 = 50
```

Exercice 5 : strings

1. wrtei a program that asks the user for a word and prints:

- the length of the word
- the word in uppercase
- the word in lowercase

In [ ]:
```
string = input('enter a string contain uppercase and lowercase words : ')

string_length = len(string)
print(f'the length of the string is {string_length}')

# the word in uppercase and in lowercase
string = string.split()
word_upper = []
word_lower = []
for c in string:
    if c.isupper():
        word_upper.append(c)
    elif c.islower():
        word_lower.append(c)
print(f'the words in uppercase are {word_upper}\nand the words in lowercase are {word_lower}')
```

2. wrtie a program that reverses a string entered by the user.

In [ ]:
```
string = input('enter a text to reverse: ')

string_reversed = list(reversed(string))
string_reversed = "".join(string_reversed)
print(f'the string reversed is {string_reversed}')
```

3. write a program that checks if a string enterd by the user is a palindrome (reads the same backward as forward)

In [ ]:
```
word = input('enter a word to check: ')

word_letter = []
for c in word:
    word_letter.append(c)
word_letter_reversed = list(reversed(word_letter))

if word_letter == word_letter_reversed :
```

```
    print(True)
else :
    print(False)
```

Exercice 6: lists

1. write a program that creates a list of 5 numbers and prints:
   - the sum of all numbers
   - the largest number in the list
   - the smalles number in the list

In [ ]:
```
liste = [23, 3, 44, 453]

# the sum
print(f'the sum of all numbers is {sum(liste)}')

# the largest number
print(f'the largest number is {max(liste)}')

# the smallest
print(f'the smallest number is {min(liste)}')
```

2. write a program that removes all duplicates froom a list and prints the updated list

In [30]:
```
liste = [23, 3, 44, 453, 23, 25, 3]

list_set = set(liste)

print(f'the updated list is {list(list_set)}')
```

```
the updated list is [3, 453, 44, 23, 25]
```

3. wrtie a program that asks the user for 5 names, store theme in a list, and then prints the list in alphabetical order

In [33]:
```python
print('enter 5 names')
# add the names to the list
names = []
for name in range(5):
    name = input('>>>')
    names.append(name)

# print the list in alphabetical order

names.sort()
print(names)
```

```
enter 5 names
['anouar', 'hamza', 'hassan', 'mohammed', 'ridouan']
```