Task 4

Exercise 3.1: Names.

```python
names=['Saad', 'Sarmad', 'Hadi']
print(names[0])
print(names[1])
print(names[2])
```

```
Saad
Sarmad
Hadi
```

Exercise 3.2: Greetings.

```python
names=['Saad', 'Sarmad', 'Hadi']
print("Hi, "+names[0])
print("Hi, "+names[1])
print("Hi, "+names[2])
```

```
Hi, Saad
Hi, Sarmad
Hi, Hadi
```

Exercise 3.3: Your own list.

```python
transportation=['car', 'bike', 'bus']
print("I would like to own a "+transportation[0])
print("I would love to drive a "+transportation[1])
print("I would like to travel by "+transportation[2])
```

```
I would like to own a car
I would love to drive a bike
I would like to travel by bus
```

Exercise 3.4: Guest list.

```python
guestList=['Saad', 'Sarmad', 'Hadi']
print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
print("Hi, "+guestList[2]+", I would like to invite you for dinner.")
```

```
Hi, Saad, I would like to invite you for dinner.
Hi, Sarmad, I would like to invite you for dinner.
Hi, Hadi, I would like to invite you for dinner.
```

Exercise 3.5: Changing guest list.

```python
guestList=['Saad', 'Sarmad', 'Hadi']
print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
```

```
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
print("Hi, "+guestList[2]+", I would like to invite you for dinner.")
print(guestList[1]+" can't make it to dinner.")
guestList[1]='Ali'
print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
print("Hi, "+guestList[2]+", I would like to invite you for dinner.")
```

```
Hi, Saad, I would like to invite you for dinner.
Hi, Sarmad, I would like to invite you for dinner.
Hi, Hadi, I would like to invite you for dinner.
Sarmad can't make it to dinner.
Hi, Saad, I would like to invite you for dinner.
Hi, Ali, I would like to invite you for dinner.
Hi, Hadi, I would like to invite you for dinner.
```

Exercise 3.6: More guests.

In [ ]:
```
guestList=['Saad', 'Sarmad', 'Hadi']
print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
print("Hi, "+guestList[2]+", I would like to invite you for dinner.")
print("We have found a bigger dinner table.")
guestList.insert(0,'Ali')
guestList.insert(2,'Ahmed')
guestList.append('Zain')
print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
print("Hi, "+guestList[2]+", I would like to invite you for dinner.")
print("Hi, "+guestList[3]+", I would like to invite you for dinner.")
print("Hi, "+guestList[4]+", I would like to invite you for dinner.")
print("Hi, "+guestList[5]+", I would like to invite you for dinner.")
```

```
Hi, Saad, I would like to invite you for dinner.
Hi, Sarmad, I would like to invite you for dinner.
Hi, Hadi, I would like to invite you for dinner.
We have found a bigger dinner table.
Hi, Ali, I would like to invite you for dinner.
Hi, Saad, I would like to invite you for dinner.
Hi, Ahmed, I would like to invite you for dinner.
Hi, Sarmad, I would like to invite you for dinner.
Hi, Hadi, I would like to invite you for dinner.
Hi, Zain, I would like to invite you for dinner.
```

Exercise 3.7: Shrinking guest list.

In [ ]:
```
guestList = ['Saad', 'Sarmad', 'Hadi']
print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
print("Hi, "+guestList[2]+", I would like to invite you for dinner.")
print("We have found a bigger dinner table.")
guestList.insert(0, 'Ali')
guestList.insert(2, 'Ahmed')
guestList.append('Zain')
print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
```

```python
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
print("Hi, "+guestList[2]+", I would like to invite you for dinner.")
print("Hi, "+guestList[3]+", I would like to invite you for dinner.")
print("Hi, "+guestList[4]+", I would like to invite you for dinner.")
print("Hi, "+guestList[5]+", I would like to invite you for dinner.")
print("The table won't arrive in time, so we can only invite two people.")

print("Sorry, "+guestList.pop()+", I can't invite you for dinner.")
print("Sorry, "+guestList.pop()+", I can't invite you for dinner.")
print("Sorry, "+guestList.pop()+", I can't invite you for dinner.")
print("Sorry, "+guestList.pop()+", I can't invite you for dinner.")

print("Hi, "+guestList[0]+", I would like to invite you for dinner.")
print("Hi, "+guestList[1]+", I would like to invite you for dinner.")
del guestList[0]
del guestList[0]
print(guestList)
```

```
Hi, Saad, I would like to invite you for dinner.
Hi, Sarmad, I would like to invite you for dinner.
Hi, Hadi, I would like to invite you for dinner.
We have found a bigger dinner table.
Hi, Ali, I would like to invite you for dinner.
Hi, Saad, I would like to invite you for dinner.
Hi, Ahmed, I would like to invite you for dinner.
Hi, Sarmad, I would like to invite you for dinner.
Hi, Hadi, I would like to invite you for dinner.
Hi, Zain, I would like to invite you for dinner.
The table won't arrive in time, so we can only invite two people.
Sorry, Zain, I can't invite you for dinner.
Sorry, Hadi, I can't invite you for dinner.
Sorry, Sarmad, I can't invite you for dinner.
Sorry, Ahmed, I can't invite you for dinner.
Hi, Ali, I would like to invite you for dinner.
Hi, Saad, I would like to invite you for dinner.
[]
```

Exercise 3.8: Seeing the world.

```python
places=['Paris', 'London', 'New York', 'Dubai', 'Rome']
print(places)
print(sorted(places))
print(places)
print(sorted(places, reverse=True))
print(places)
places.reverse()
print(places)
places.reverse()
print(places)
places.sort()
print(places)
places.sort(reverse=True)
print(places)
```

```
['Paris', 'London', 'New York', 'Dubai', 'Rome']
['Dubai', 'London', 'New York', 'Paris', 'Rome']
['Paris', 'London', 'New York', 'Dubai', 'Rome']
['Rome', 'Paris', 'New York', 'London', 'Dubai']
['Paris', 'London', 'New York', 'Dubai', 'Rome']
['Rome', 'Dubai', 'New York', 'London', 'Paris']
['Paris', 'London', 'New York', 'Dubai', 'Rome']
['Dubai', 'London', 'New York', 'Paris', 'Rome']
['Rome', 'Paris', 'New York', 'London', 'Dubai']
```

Exercise 3.9: Dinner guests.

```
In [ ]: guestList=['Saad', 'Sarmad', 'Hadi']
        print(len(guestList))
```

```
3
```

Exercise 3.10: Every function.

```
In [ ]: languages=['English', 'Urdu', 'Arabic', 'French', 'Spanish']
        languages.insert(0, 'German')
        languages.append('Italian')
        languages.insert(2, 'Chinese')
        print(languages)
        languages.pop()
        print(languages)
        print(sorted(languages))
        print(sorted(languages, reverse=True))
        languages.reverse()
        print(languages)
        languages.reverse()
        print(languages)
        languages.sort()
        print(languages)
```

```
['German', 'English', 'Chinese', 'Urdu', 'Arabic', 'French', 'Spanish', 'Italian']
['German', 'English', 'Chinese', 'Urdu', 'Arabic', 'French', 'Spanish']
['Arabic', 'Chinese', 'English', 'French', 'German', 'Spanish', 'Urdu']
['Urdu', 'Spanish', 'German', 'French', 'English', 'Chinese', 'Arabic']
['Spanish', 'French', 'Arabic', 'Urdu', 'Chinese', 'English', 'German']
['German', 'English', 'Chinese', 'Urdu', 'Arabic', 'French', 'Spanish']
['Arabic', 'Chinese', 'English', 'French', 'German', 'Spanish', 'Urdu']
```

Exercise 4.1: Pizzas.

```
In [ ]: pizzas=['Chicken Tikka', 'BBQ', 'Chicken Supreme']
        for pizza in pizzas:
            print("I like "+pizza+" pizza.")
        print("I really love pizza!")
```

```
I like Chicken Tikka pizza.
I like BBQ pizza.
I like Chicken Supreme pizza.
I really love pizza!
```

Exercise 4.2: Animals.

```
In [ ]: animals=['Dog', 'Cat', 'Rabbit']
        for animal in animals:
            print("A "+animal+" would make a great pet.")
        print("Any of these animals would make a great pet!")
```

```
A Dog would make a great pet.
A Cat would make a great pet.
A Rabbit would make a great pet.
Any of these animals would make a great pet!
```

Exercise 4.3: Counting to twenty.

```
In [ ]: for num in range(20):
            print(num+1)
```

```
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
```

Exercise 4.5: Summing a million.

```
In [ ]: numbers=list(range(1, 1000001))
        print(min(numbers))
        print(max(numbers))
        print(sum(numbers))
```

```
1
1000000
500000500000
```

Exercise 4.6: Odd numbers.

```
In [ ]: oddNumbers=list(range(1, 21, 2))
        for oddNumber in oddNumbers:
```

```
    print(oddNumber)
```

```
1
3
5
7
9
11
13
15
17
19
```

Exercise 4.7: Threes.

In [ ]:
```
threes = list(range(3, 31, 3))

for number in threes:
    print(number)
```

```
3
6
9
12
15
18
21
24
27
30
```

Exercise 4.8: Cubes.

In [ ]:
```
cubes = []
for number in range(1, 11):
    cube = number**3
    cubes.append(cube)

for cube in cubes:
    print(cube)
```

```
1
8
27
64
125
216
343
512
729
1000
```

Exercise 4.9: Cube comprehension.

```
In [ ]: cubes=[number**3 for number in range(1, 11)]
        for cube in cubes:
            print(cube)
```

```
1
8
27
64
125
216
343
512
729
1000
```

Exercise 4.10: Slices.

```
In [ ]: languages=['English', 'Urdu', 'Arabic', 'French', 'Spanish']
        print("First three items in the list are:", languages[:3])
        print("Three items from the middle of the list are:", languages[1:4])
        print("Last three items in the list are:", languages[-3:])
```

```
First three items in the list are: ['English', 'Urdu', 'Arabic']
Three items from the middle of the list are: ['Urdu', 'Arabic', 'French']
Last three items in the list are: ['Arabic', 'French', 'Spanish']
```

Exercise 4.11: My pizzas, your pizzas.

```
In [ ]: favouritePizzas=['Chicken Tikka', 'BBQ', 'Chicken Supreme']
        friendPizzas=favouritePizzas[:]
        favouritePizzas.append('Mushroom')
        friendPizzas.append('Pepperoni')
        print("My favourite pizzas are:")
        for pizza in favouritePizzas:
            print(pizza)
        print("My friend's favourite pizzas are:")
        for pizza in friendPizzas:
            print(pizza)
```

```
My favourite pizzas are:
Chicken Tikka
BBQ
Chicken Supreme
Mushroom
My friend's favourite pizzas are:
Chicken Tikka
BBQ
Chicken Supreme
Pepperoni
```

Exercise 4.13: Buffet.

```
In [ ]: buffetMenu=('Chicken Tikka', 'BBQ', 'Chicken Supreme', 'Mushroom', 'Pepperoni')
        print("Menu items are:")
```

```
for food in buffetMenu:
    print(food)
buffetMenu=('Chicken Tikka', 'BBQ', 'Chicken Supreme', 'Mushroom', 'Pepperoni', 'Ch
print("\nWe have changed our menu.")
print("\nNew menu items are:")
for food in buffetMenu:
    print(food)
```

```
Menu items are:
Chicken Tikka
BBQ
Chicken Supreme
Mushroom
Pepperoni

We have changed our menu.

New menu items are:
Chicken Tikka
BBQ
Chicken Supreme
Mushroom
Pepperoni
Chicken Wings
```