University of Mohamed khider

Faculty of Economics, Business and Management Sciences

Subject: Fundamentals of Programming with Python

Level: First Year – Common Core

Exercise 1
Solution

```
# Step 1: Create the list
fruits = ["apple", "banana", "cherry"]

# Step 2: Print the whole list
print(fruits)

# Step 3: Print the first element
print(fruits[0])

# Step 4: Print the last element
print(fruits[-1])

# Step 5: Change "banana" to "orange"
fruits[1] = "orange"

# Step 6: Print the list again
print(fruits)

# Step 7: Print each element on a separate line
for fruit in fruits:
    print(fruit)

# Step 8: Print the length of the list
print(len(fruits))
```

Exercise 2
Solution

```
numbers = [3, 8, 1, 10, 5]

print("All numbers:")
for num in numbers:
    print(num)
print("Numbers greater than 5:")
for num in numbers:
    if num > 5:
        print(num)

print("Even or Odd:")
for num in numbers:
    if num % 2 == 0:
        print(num, "Even")
    else:
```

```
        print(num, "Odd")

total = 0
for num in numbers:
    if num > 3:
        total += num
print("Sum of numbers greater than 3:", total)
for num in numbers:
    print(num, "squared is", num**2)
```

Exercise 3

Solution

```
names = ["Mohamed", "Adam", "Nour", "Selma", "Ahmed", "Omar", "Fatima", "Karim"]
print(names)

names.append("Youssef")
print(names)

names.insert(1, "Layan")
print(names)

names.remove("Nour")
print(names)

names.pop()
print(names)

index = names.index("Adam")
names[index] = "Adel"
print( names)

names.sort()
print(names)

names.reverse()
print( names)
```

Exercise 4

Solution

```
numbers = []
for i in range(8):
    num = int(input("Enter ",i+1," number: "))
    numbers.append(num)


print("Original list:", numbers)
```

```
print("Statistics for the list 'numbers':")
print("Maximum:", max(numbers))
print("Minimum:", min(numbers))
print("Average:", sum(numbers)/len(numbers))
small = []
large = []

for num in numbers:
    if num < 10:
        small.append(num)
    else:
        large.append(num)

print("Small numbers (<10):", small)
print("Large numbers (>=10):", large)
```

Exercise 5
Solution

```
grades = [
    ["Ali", 18, 15, 16, 19],
    ["Sara", 20, 17, 19, 18],
    ["Omar", 14, 16, 12, 15]
]
#question 1
print(grades)
#question 2
print(grades[2][3])
#question 3
print(grades[1])

#question 4

grades. append(["Lina",16,18,17,16])

print(grades)

#question 5

grades [2][3]=15

print(grades)

#question 6

Averages=[]

for student in grades:

  # Average =(student[1]+student[2]+student[3]+student[4])/4
```

```
    Average=sum(student[1:])/4
    Averages. append (Average)
    print(f"{student[0]} Average is:{Average:.2f} ")
#question 7
Max=max(Averages)
Index=Averages.index(Max)
print(f" {grades[Index][0]} is the student with the highest average {Max:.2f} ")
```