Grade 11 – Unit 5 – Answer keys

Activity 1

1.

Scenario	Description
a list containing the last six months of the year	last6months = ["July", "August", "September", "October", "November", "December"]
a list containing the first names of five students in your class	*["Ali", "Malia","Rawan",'Hessa","Ahmed"]*
a list of the ages of the five students in your class	*[3, 17, 25, 2, 63]*
a list containing your first name, last name, age, school and grade in CS last term	*["Haitham", "Al Mazroui", 94, "Fujairah School", 73]*
a list of six musicians	*["Stormzy", "Jassmi", "Haddad", "Ahlam", "Abri", "Legend"]*
all the operators used for math	*["=", "-", "*", "+", "/", "%"]*
the heights in metres of seven members of your class	*[1.23, 1.3, 2.3, 1.2, 3.1, 1.45, 1.00]*

2.

Element	Value
`cars[5]`	*Lexus*
`cars[1]`	*Fiat*
`cars`	*"Toyota","Fiat","Ferrari","Nissan","Volvo","Lexus"*
`cars[17]`	*Error*
`cars[3]`	*Nissan*
`Cars[2]`	*Error*

3.

Element	Value
change the Fiat to an Infiniti	*cars[1] = "Infiniti"*
replace the Ferrari with a McLaren	*cars[2] = "McLaren"*
let the user enter a car name to change the value of Nissan	*cars[3] = input("Enter the car name")*
change the value in cars[8] to Chevrolet	*Error*
replace the Volvo with Mercedes	*cars[4] = "Mercedes"*

4.

```
1  periodicTableI=["Hydrogen","Helium","Lithium",
2  "Berylium","Carbon","Nitrogen","Oxygen", "Fluorine"]
3
4  print(periodicTableI[2], periodicTableI[6])
5
```

5.

```
1  carDetails  =  ["car",  "Mercedes",  1977,  "X2345",
2  "Sharjah", 1.8, "green"]
3
4  print(carDetails)
5
6  for detail in carDetails:
7        print(detail)
8
```

Activity 2

1.

Case	What would you use?			
	for loop	**while loop**	**append() function**	**create a full list at the start**
Entering a list of grades achieved by Grade 10 students on a Computer Science quiz		X	X	
Printing a list of all Grade 10 students' names one at a time	X			
Updating in a list the monthly high scores for a game			X	
Setting a list of comments entered by your followers on Instagram		X	X	
Updating a list of travellers passing through Dubai International Airport		X	X	
Printing the results from a coding competition	X			

2.

```
1    oddNums = []
2
3    for x in range(153, -78, -2):
4        oddNums.append(x)
5
6
7    print(oddNums)
8
```

3.

```
1   students = []
2
3   finished = "n"
4
5   while finished != "y":
6       student = input("Enter a student's name:")
7
8       students.append(student)
9
10      finished = input("Finished?(y/n)")
11
12  for name in students:
13      print(name)
14
15
16  print("+++++++++++Done+++++++++++++")
17
18
```

4.

```
1   from random import randint
2
3   randNumbers = []
4
5   for i in range(0, 10, 1):
6       randNum = randint(-100, 100)
7
8       randNumbers.append(randNum)
9
10  print("The list is:", randNumbers)
```

```python
smallest = min(randNumbers)
largest = max(randNumbers)


index = 0
while smallest != randNumbers[index]:
    index = index + 1
print("The smallest number is at:", index)


index = 0
while largest != randNumbers[index]:
    index = index + 1
print("The largest number is at:", index)


print("=============Complete==============")

```

Activity 3

1.

Scenario	Statement
create a list to contain the last three elements from transport	*transp = transport[2:5]*
create a new list with only the last element from clothes	*cloth=clothes[4] OR cloth1=clothes[-1]*
create a new list that combines clothes and headCov	*clothandCov = clothes + headCov*
create a new list that repeats the transport list two times	*doubleTransp = transport * 2*
create a copy of the headCov list	*copyHeadCov = headCov.copy()*
create a new list that combines the first two elements from clothes and the last three elements from headCov	*combClothCov2 = clothes[0:2] + headCov[3:6]*

Activity 4

1.

Question	Python Statement
How can you open a file called scores.txt so you can save the output from your program?	*outfile = open("scores.txt", "w")*
Write down the statement to check if Khalid is in a list called **pupils**.	*"Khalid" in pupils*
Write a statement to close the scores.txt file.	*outfile.close()*
How can you open a file called markup.txt for output? You do not want to overwrite the existing file.	*outfile2 = open("markup.txt", "a")*
How can you open a file called holidays.txt to read data from?	*infile = open("holidays.txt", "r")*
What statement would you use to find out the length of the list called **pupils**?	*len(pupils)*
Can you write a statement to remove Eman from the **pupils** list?	*del(pupils[2])*

2.

```
1   mount = open("mountains.txt", "r")

2   #We introduce a new function here splitlines(), otherwise
3   #you will only get chars

4   allMountains = mount.read()

5   allLines = allMountains.splitlines()

6

7   for i in range(0, 5, 1):

8       print(allLines[i])

9

10

11  mount.close()

12  print("=============Complete===============")
```

3.

```python
#1m = 3.28ft
feetM = 3.28
heightsFeet = [29029, 28251, 28169, 27940, 27838, 26906,
26795, 26781]


outfile = open("mountheights.txt", "w")
heightsMetre = []
for heightF in heightsFeet:
    heightM = heightF / feetM
    heightM = round(heightM, 2)
    heightsMetre.append(heightM)
heightsMetre = str(heightsMetre)
outfile.write(heightsMetre)
outfile.close()
print("=============Halas=============")
```

Activity 5

1.

Question	Python Statement
How can you print the **capitals** dictionary?	*print(capitals)*
Write down the statement to check the value of **Jordan** (the key).	*print(capitals["Jordan"])*
The entry for the capital of Jordan is wrong. Write the statement to change it.	*capitals["Jordan"] = "Amman"*
Write the statement to print the values for the keys **UAE** and **Zambia**.	*print(capitals["UAE"])* *print(capitals["Zambia"])*
Create a dictionary to store values for the following keys: name, age, gender, and class.	*student = {"name":"Rashid","age":16,"gender":"Male","class":11}*
Using your dictionary above, write down the code to change the age in your dictionary.	*student["age"] = 15*
What statement would you use to check and print the name in your dictionary?	*If "name" in capitals:* *print(student["name"])*

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2.

```
1   capitals={"UK":"London","UAE":"Abu
2   Dhabi","Zambia":"Lusaka","Germany":"Berlin",
    "Portugal":"Lisbon","China":"Beijing",
3   "Jordan":"Amman"}
4
5
6   keys = capitals.keys()
7   for key in keys:
8       print(key)
9
```

Activity 6

1.

```
1  elements=["hydrogen","lithium","sodium","potassium",
2  "rubidium","cesium", "francium"]
```

2.

```
1  elements=["hydrogen","lithium","sodium","potassium",
2  "rubidium","cesium", "francium"]
3  symbols = ["H","Li","Na","K","Rb","Cs","Fr"]
4  elementDict = {}
5
6  for i in range(0,6):
7      print(i)
8      elementDict.update({elements[i]:symbols[i]})
9
```

3.

```
1   elements=["hydrogen","lithium","sodium","potassium",
2   "rubidium","cesium", "francium"]
3   symbols = ["H","Li","Na","K","Rb","Cs","Fr"]
4   elementDict = {}
5
6   for i in range(0,6):
7       elementDict.update({elements[i]:symbols[i]})
8
9
10  points = 0
11
12  for x in range(0,6):
13
```

```
14        print("The symbol for", elements[x], "is: ")
15        answer = input(">>")
16        if elementDict[elements[x]] == answer:
17            print("Correct!")
18            points = points + 2
19        else:
20            print("Incorrect, the symbol for ", elements[x],
21    " is ", elementDict[elements[x]])
22
23            points = points - 1
24
25    print("Your total score is ", points)
26
```

4.

```
1    elementDict.update({"beryllium":"Be","magnesium":"Mg",
2    "calcium":"Ca","strontium":"sr","barium":"Ba","radium":"Ra"})
```

5.

```
1    for key in elementDict.copy():
2        if key[0] == "s":
3            del(elementDict[key])
4
```

```
5
6    print(elementDict)
7
```

End of unit activities

1.

```python
grades = {"Computer science": 90, "CDI": 80,"Math": 78,"Physics": 83}


print("Computer science grade: ", grades["Computer science"])
```

2.

```python
designers = []

finish = "no"

while finish == "no":
    brand = input("Enter a brand: ")
    designers.append(brand)
    finish = input("Are you finished?")

print(designers[1:-1])
```

3.

```python
from random import shuffle

playlist={"Ahlam":"Wallah Ahtagak", "Stormzy":"Power",
"Buddy Guy":"Hoochie
coochie","Outlandish":"Aicha","Vivaldi":"Allegro non
molto"}


def menu():
    choice = 0


    while choice != 3:


        print("*** Playlist menu ***")
        print("1. Play song from one singer only")
        print("2. Play all songs in a random order")
        print("3. Exit")


        choice = input("Choose your option:")
        choice = int(choice)


        if choice == 1:
            singer = input("Choose the singer's songs
that you want to play: ")
            print("<||> Now playing:", playlist[singer])


        elif choice == 2:
            songlist = []
            for c in playlist.values():
```

```python
                    songlist.append(c)


            shuffle(songlist)
            for song in songlist:
                print("<||> Now playing:", song)
        else:
            print("======Good bye!=========")


        print()


    return 0


menu()
```

4.

```python
year = ["January","February", "March", "April", "May",
"June"]
conversion = {}


f = open("currency.txt", "r")
data = f.read()
data = data.split()
f.close()


for eachmonth in range(0, len(data), 2):
    theKey = data[eachmonth]
    theValue = data[eachmonth+1]
```

```python
        conversion[theKey] = theValue

print()
print("US Dollar rates for the first six months")


for month in year:
    print(month, conversion[month])


finish = "no"
rates = {}


while finish == "no":
        month = input("Enter the month to view: ")
        rates.update({month:conversion[month]})
        finish = input("Are you finished")


outfile = open("MyRates.txt", "w")
outfile.write(str(rates))
outfile.close()
```