

## AQSA NAZ 19B-033-SE CHAPTER 2

```
In [19]: #2.1
          #(a)
          1+2+3+4+5
```

Out[19]: 15

```
In [20]: #(b)
          sara_age=eval(input("Enter the age of sara: "))
          mark_age=eval(input("Enter the mark age: "))
          fatima_age=eval(input("Enter the age of fatima: "))
          average=((sara_age+mark_age+fatima_age)/3)
          print(average)
```

```
Enter the age of sara: 25
Enter the mark age: 18
Enter the age of fatima: 20
21.0
```

```
In [4]: #(c)
         print(403//73)
```

5

```
In [5]: #(d)
         print(403%73)
```

38

```
In [23]: #(e)
          print("two to the paper 10 is: ",2**10)
```

two to the paper 10 is: 1024

```
In [26]: #(f)
          sara_height=eval(input("Enter the height of sara: "))
          mark_height=eval(input("Enter the mark_age: "))
          print(abs(sara_height-mark_height))
```

```
Enter the height of sara: 5.2
Enter the mark_age: 20
14.8
```

```
In [24]: #(g)
          min(34.99,29.95,31.50)
```

Out[24]: 29.95

```
In [27]: #2.2
        #(a)
        2+2<4
```

Out[27]: False

```
In [28]: #(b)
        7//3==1+1
```

Out[28]: True

```
In [29]: #(c)
        3**2+4**2==25
```

Out[29]: True

```
In [30]: #(d)
        2+4+6>12
```

Out[30]: False

```
In [31]: #(e)
        1387%19==0
```

Out[31]: True

```
In [32]: #(f)
        31%2==0
```

Out[32]: False

```
In [33]: #(g)
        min(34.99,29.95,31.50)<30.00
```

Out[33]: True

```
In [34]: #2.3
        #(a)
        a=3
        #(b)
        b=4
        #(c)
        c=(a*b)+(b*b)
        print(c)
```

28

```
In [35]: #2.4
s1="ant"
s2="bat"
s3="cod"
#(a)
print(s1 + " " + s2 + " " + s3)
#(b)
print(10*(s1 + " "))
#(c)
print(s1 + " " + (2*(s2 + " ")) + (3*(s3+ " ")))
#(d)
print(7*(s1 + " " + s2 + " "))
#(e)
print(5*(s2 + s3 + s3 + " "))
```

```
ant bat cod
ant ant ant ant ant ant ant ant ant
ant bat bat cod cod cod
ant bat ant bat ant bat ant bat ant bat ant bat
batcodcod batcodcod batcodcod batcodcod batcodcod
```

```
In [38]: #2.5
s="0123456789"
print(s[0])
print(s[1])
print(s[6])
print(s[8])
print(s[9])
```

```
0
1
6
8
9
```

```
In [54]: #2.6
words=['bat','ball','barn','basket','badminton']
print(min(words))
print(max(words))
```

```
badminton
bat
```

```
In [39]: #2.7
grades=[9,7,7,10,3,9,6,6,2]
#(a)
print(grades.count(7))
#(b)
grades[-1]=4
#(c)
print(max(grades))
#(d)
grades.sort()
print(grades)
#(e)
average=sum(grades)/9
print(average)

2
10
[3, 4, 6, 6, 7, 7, 9, 9, 10]
6.777777777777778
```

```
In [40]: #2.8
#(a)
((2+3)==4) or (a>5)
```

Out[40]: False

```
In [41]: #(b)
lst=[1,2,3,4,5,6,7,8,9]
((lst[1]*(-3))<(-10))==0
```

Out[41]: True

```
In [43]: #(c)
((lst[1])*(-3)<(-10))in [0, True]
```

Out[43]: True

```
In [44]: #(d)
(2*(3**2))
```

Out[44]: 18

```
In [45]: #(e)
4/2 in [1,2,3]
```

Out[45]: True

```
In [46]: #2.9
#(a)
print(type(False+True))
```

<class 'int'>

```
In [47]: #(b)
print(type(2*(3**2.0)))
```

```
<class 'float'>
```

```
In [51]: #(c)
print(type((4//2)+(4%2)))
```

```
<class 'int'>
```

```
In [52]: #(d)
print(type((2+3==4) or (5>=5)))
```

```
<class 'bool'>
```

```
In [55]: #2.10
import math
a=3
b=4
x='x'
y='y'
H=math.sqrt(a**2+b**2)
c=math.sqrt(a**2+b**2)==5
r=math.pi*a**2
print(H)
print(c)
print(r)
print((a)**2+(b)**2<r**2)
```

```
5.0
```

```
True
```

```
28.274333882308138
```

```
True
```

```
In [31]: #ex:2.11
#(a)
sumofsevenintegers=(-7+-6+-5+-4+-3+-2+-1)
print("The sum of seven integers: ",sumofsevenintegers)
```

```
The sum of seven integers: -28
```

```
In [30]: #(b)
avg=(17*9+24*10+21*11+27*12)/(17+24+21+27)
print("The average age of group of kids is: ",avg)
```

```
The average age of group of kids is: 10.651685393258427
```

```
In [2]: #(c)
neg_exp= 2**-20
print("The exponent of 2**-20 = ",neg_exp)
```

```
The exponent of 2**-20 = 9.5367431640625e-07
```

```
In [3]: #(d)
d=4356/61
print(d)
```

71.40983606557377

```
In [4]: #(e)
a=4356%61
print(a)
```

25

```
In [56]: #exercise 2.12
s1='-'
s2='+'
print(s1+s2)
print(s1+s2+s1)
print(s2 + 2*s1)
print(2*(s2 + 2*s1))
print(10*(s2 + 2*s1) + s2)
print(5*(s2+s1+3*s2+2*s1))
```

```
-+
-+-
+--
+---+--
+---+---+---+---+---+---+
+-----+-----+-----+-----+-----+-----
```

```
In [17]: #2.13
s="abcdefghijklmnopqrstuvwxyz"
print(s[0])
print(s[2])
print(s[25])
print(s[24])
print(s[16])
```

```
a
c
z
y
q
```

```
In [50]: #2.14
s="goodbye"
#(a)
s[0]=="g"
print(s[0]=="g")
#(b)
s[6]=="g"
print(s[6]=="g")
#(c)
(s[0]=="g" and s[1]=="a")
print(s[0]=="g" and s[1]=="a")
#(d)
s[-2]=="x"
print(s[-2]=="x")
#(e)
s[len(s)//2]=="d"
print(s[len(s)//2]=="d")
#(f)
s[0]==s[-1]
print(s[0]==s[-1])
#(g)
s[-4:]=="tion"
print(s[-4:]=="tion")
```

```
True
False
False
False
True
False
False
```

```
In [51]: #2.15
#(a)
len("anachronistically")==1+len("counterintuitive")
print(len("anachronistically")==1+len("counterintuitive"))
```

```
True
True
True
```

```
In [21]: #(b)
"misinterpretation"<"misrepresentation"
```

Out[21]: True

```
In [22]: #(c)
"floccinaucinihilipilification".find("e")==-1
```

Out[22]: True

```
In [53]: #(d)
len("counterrevolution")==len("counter")+len("resolution")
print(len("counterrevolution")==len("counter")+len("resolution"))
```

True

```
In [60]: #2.16
a=2
b=4
c=(a+b)/2
print(c)
inventory = ['paper','staplers','pencil']
first = 'John'
middle = 'Fitzgerald'
last = 'Kennad'
fullname = first + " " + middle + " " + last
print("my fullname is " + fullname)
```

3.0

my fullname is John Fitzgerald Kennad

```
In [59]: #2.17
inventory=[1,2,3,45,6,7]
fullname=[1,25,3,657,8,33,53,2,2,26]
print(17-9 < 10)
print(len(inventory) > 5*len(fullname))
print(c <= 24)
print((6.75 < a and 6.75 > b) or (6.75 < b and 6.75 > a))
print(len(middle) > len(first) and len(middle) < len(last))
print(len(x)==0 or len(x) > 10)
```

True

False

True

False

False

False

```
In [54]: #2.18
#(a)
flowers=['rose','bougainvillea', 'yucca', 'marigold', 'daylilly','lilly of the
valley']
print(flowers)
```

['rose', 'bougainvillea', 'yucca', 'marigold', 'daylilly', 'lilly of the valley']

```
In [55]: #(b)
flowers=['rose','bougainvillea', 'yucca', 'marigold', 'daylilly','lilly of the
valley']
'potato' in flowers]
```

Out[55]: False



```
In [56]: #(c)
thorny=[flowers[0],flowers[1],flowers[2]]
print(thorny)

['rose', 'bougainvillea', 'yucca']
```

```
In [57]: #(d)
poisonous=[flowers[-1]]
print(poisonous)

['lilly of the valley']
```

```
In [58]: #(e)
dangerous=[thorny]+[poisonous]
print(dangerous)

[['rose', 'bougainvillea', 'yucca'], ['lilly of the valley']]
```

```
In [58]: #2.19
answers = ['Y', 'N', 'N', 'Y', 'N', 'Y', 'Y', 'Y', 'N', 'N', 'N']
numYes = answers.count('Y')
numNo = answers.count('N')
percentYes = answers.count('Y')/len(answers)

print(numYes)
print(numNo)
print(percentYes)
print(answers.sort())
print(answers.count('N'))

5
6
0.45454545454545453
None
6
```

```
In [61]: #2.20
s="Aqsa"
s[::-1]
print(s[-1]+s[-2]+s[-3])

asq
```

```
In [63]: #2.21
s="Ljubomir Perkovic"
names=s.split()
initial=""
for i in names:
    initial+=i[0]
    print(initial)

L
LP
```

```
In [62]: #2.22
lst=[2,5,11,32,23]
max(lst)-min(lst)
```

Out[62]: 30

```
In [6]: #2.23
#(a)
list1 = ['Jan', 'Feb', 'Mar', 'Apr', 'May']
list1.insert(3, 'Apr')
print(list1)

['Jan', 'Feb', 'Mar', 'Apr', 'Apr', 'May']
```

```
In [7]: #(b)
months = ['Jan', 'Feb', 'Mar', 'Apr', 'May']
# using pop() to delete element from right end
# deletes 4 from the right end of deque
months.pop()
```

Out[7]: 'May'

```
In [9]: #(c)
s1 = 'Jan'
s2 = 'Feb'
s3 = 'Mar'
s4 = 'Apr'
s5 = 'May'
s6 = 'Jun'
s7 = s1 + s2 + s3 + s4 + s5 + s6
print(s7)
```

JanFebMarAprMayJun

```
In [10]: #(d)
monthsL=['Jan', 'Feb', 'Mar', 'Apr', 'May']
monthsT=['Jan', 'Feb', 'Mar', 'Apr', 'May']
monthsL.remove('Mar')
print(monthsL)
monthsT.remove('Feb')
print(monthsT)
```

['Jan', 'Feb', 'Apr', 'May']  
['Jan', 'Mar', 'Apr', 'May']

```
In [11]: #(e)
m = ['Jan', 'Feb', 'Mar', 'Apr']
def Reverse(m):
    return [ele for ele in reversed(m)]
# Driver Code
print(Reverse(m))
```

['Apr', 'Mar', 'Feb', 'Jan']

```
In [12]: #(f)
months = ['Jan', 'Feb', 'Mar']
# Sorting list of months in ascending
months.sort()
print(months)

['Feb', 'Jan', 'Mar']
```

```
In [65]: #2.24
grades=['c','a','c','c','b','a','d','d']
count = [grades.count('a'),grades.count('b'),grades.count('c'),grades.count('d'),grades.count('f')]
print(count)

[2, 1, 3, 2, 0]
```

```
In [14]: #2.26
import math
r=10
X=0
Y=0
a=math.sqrt((0-0)**2+(0-0)**2)
b=math.sqrt((10-0)**2+(10-0)**2)
c=math.sqrt((6-0)**2+(6-0)**2)
d=math.sqrt((8-0)**2+(7-0)**2)
print(a<r)
print(b<r)
print(c<r)
print(d<r)

True
False
True
False
```

```
In [63]: #2.27
import math
length = float(input("LENGTH OF THE LADDER:"))
ang_d = float(input("input angle in degree:"))
ang_r=math.pi*ang_d/180
height=length*math.sin(ang_r)
print("The height of the ladder is", height)
length = float(input("LENGTH OF THE LADDER:"))
ang_d = float(input("input angle in degree:"))
ang_r=math.pi*ang_d/180
height=length*math.sin(ang_r)
print("The height of the ladder is", height)
length = float(input("LENGTH OF THE LADDER:"))
ang_d = float(input("input angle in degree:"))
ang_r=math.pi*ang_d/180
height=length*math.sin(ang_r)
print("The height of the ladder is", height)
length = float(input("LENGTH OF THE LADDER:"))
ang_d = float(input("input angle in degree:"))
ang_r=math.pi*ang_d/180
height=length*math.sin(ang_r)
print("The height of the ladder is", height)
```

```
LENGTH OF THE LADDER:20
input angle in degree:45
The height of the ladder is 14.142135623730951
LENGTH OF THE LADDER:15
input angle in degree:60
The height of the ladder is 12.990381056766578
LENGTH OF THE LADDER:25
input angle in degree:70
The height of the ladder is 23.492315519647708
LENGTH OF THE LADDER:25
input angle in degree:75
The height of the ladder is 24.148145657226706
```

```
In [64]: #2.28
lst=[11,52,253,45,98]
middle = int(len(lst) / 2)
print(lst[middle])
print(len(lst)//2)
lst.sort(reverse = True)
print("my number list in descending",lst)
lst.insert(len(lst),lst.pop(0))
print(lst)
```

```
253
2
my number list in descending [253, 98, 52, 45, 11]
[98, 52, 45, 11, 253]
```

```
In [15]: #2.29
#(a)
0 == 1 == 2
0== False
False==False
True
```

Out[15]: True

```
In [16]: #(b)
0 == 1 == 2
0== False
False==False
True
```

Out[16]: True

```
In [17]: #(c)
1 < -1 == (3 > 4)
1 < -1 == False
False == False
True
```

Out[17]: True

```
In [62]: #2.30
q='hello salam'
print(list(q))

['h', 'e', 'l', 'l', 'o', ' ', 's', 'a', 'l', 'a', 'm']
```

```
In [61]: #2.31
lst = [2, 3, 4]
print(lst)
lst.extend([5, 6])
print(lst)
lst2 = lst.copy()
print(lst2)
lst.clear()
print(lst)
print(lst2)
```

```
[2, 3, 4]
[2, 3, 4, 5, 6]
[2, 3, 4, 5, 6]
[]
[2, 3, 4, 5, 6]
```

In [ ]: