ASSIGNMENT 6

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SUBJECT: PROBLEM SOLVING AND PROGRAMMING

FACULTY: Dr. Kanchan Lata

SLOT: D11+D12+D13

1.ANSWER

```
from array import *
a = array('i',[10,20,30,40,50])
shift = 1
def rightrot(arr,shift):
    for i in range(0,shift):
        temp = arr[len(arr)-1]
        for j in range(len(arr)-1,0,-1):
            arr[j] = arr[j-1]
        arr[0] = temp

    return arr

def printarray(array):
    for i in range(0,len(array)):
        print(array[i], end=' ')


rotarray = rightrot(a,shift)
printarray(rotarray)
```

OUTPUT

```
50 10 20 30 40
PS C:\Users\Ananya
```

2.ANSWER

```
from array import *
a = array('i',[-5,-4,-3,-2,-1,0,1,2,3,4,5])
c1 = 0
c2 = 0
c3 = 0
c4 = 0
c5 = 0
n = len(a)
for i in range (0,n-1):
    if (a[i] == 0):
        c1 = c1+1
    elif (a[i]%2 == 0):
        c2 = c2+1
    else:
        c3 = c3+1

for i in range (0,n-1):
    if(a[i]>0):
        c4 = c4+1
    elif (a[i]<0):
```

```
        c5 = c5+1
print("Zeroes :",c1)
print("Even :",c2)
print("Odd :",c3)
print("Positive numbers : ",c4)
print("Negative number :",c5)
```

OUTPUT

```
Zeroes : 1
Even : 4
Odd : 5
Positive numbers :  4
Negative number : 5
```

3.ANSWER

```
import numpy as np

a = np.array([1,3,5,7,9])
b = np.array([2,4,6,8,10])
print("************************M E N U*****************************")
print("1.Add two arrays")
print("2.Multiply two arrays")
print("3.Square of the arrays elements")
print("4.Square roots of the array elements")
print("5.Exit")
choice = int(input("Enter your choice : "))
if(choice == 1):
    sum_arr = np.add(a, b)
    print("added array : ",sum_arr)

elif(choice == 2):
    multiply_arr = np.multiply(a, b)
    print("Multiplied array : ",multiply_arr)

elif(choice ==3):
    sq_arr1 = np.square(a)
    sq_arr2 = np.square(b)
    print("Square of array 1 :",a)
    print("Square of array 2 :",b)

elif(choice == 4):
    sqrt_arr1 = np.sqrt(a)
    sqrt_arr2 = np.sqrt(b)
    print("Square root of array 1 :",a)
    print("Square root of array 2 :",b)

else:
```

```
    print("Enter a valid choice : ")
```

OUTPUT

```
1.Add two arrays
2.Multiply two arrays
3.Square of the arrays elements
4.Square roots of the array elements
5.Exit
Enter your choice : 1
added array :  [ 3  7 11 15 19]
```

4.ANSWER

```
from array import *
a = array('i',[1,2,3,4,5])

def printarray(array):
    for i in range(0,len(array)):
        print(array[i], end=' ')

print("**********************M E N U**************************")
print("1.Insertion")
print("2.Deletion")
print("3.Exit")
ch = int(input("Enter your choice : "))

if (ch == 1):
    print("**********************I N S E R T**************************")
    print("1.Front")
    print("2.Back")
    print("3.Given position")
    choice = int(input("Enter your choice : "))
    if(choice == 1):
        x = int(input("Enter the position where you want to add the element :
"))
        a.insert(0,x)
        printarray(a)
    elif(choice == 2):
        a.append(x)
        printarray(a)
    elif(choice == 3):
        i = int(input("Enter the position where you want to add the element :
"))
        a.insert(i,x)
        printarray(a)

elif(ch == 2):
    print("**********************D E L E T E**************************")
    print("1.Front")
```

```
    print("2.Back")
    print("3.Given position")
    choice = int(input("Enter your choice : "))
    if(choice == 1):
        del a[0]
        printarray(a)
    elif(choice == 2):
        a.pop()
        printarray(a)
    else:
        j = int(input("Enter the position where you want to delete the element
 : "))
        del a[j]
        printarray(a)

else:
    print("Enter a valid condition")
```

OUTPUT

```
**********M E N U**********
1.Insertion
2.Deletion
3.Exit
Enter your choice : 1
**********I N S E R T**********
1.Front
2.Back
3.Given position
Enter your choice : 1
Enter the position where you want to add the element : 3
3 1 2 3 4 5
```

5.ANSWER

```
from array import *
a = array('i',[5,3,4,5,6,2,6,8,1,9,34,76,34,99])
minimum = maximum = a[0]
for i in a[1:]:
        if i < minimum:
            minimum = i
        else:
            if i > maximum: maximum = i

print("**********M E N U**********")
print("1.Minimum")
print("2.Maximum")
choice = int(input("Enter your choice :"))
if(choice == 1):
    print("Minimum :",minimum)
elif(choice == 2):
    print("Maximum :",maximum)
```

OUTPUT

```
**********M E N U**********
1.Minimum
2.Maximum
Enter your choice :2
Maximum : 99
```