## Gul e hasnain 19B-010-SE Section - A Lab 04 exercise

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In [3]: # ex 1
        from math import sqrt
         import cmath
        a = eval(input("Input the value of a: "))
        b = eval(input("Input the value of b: "))
        c = eval(input("Input the value of c: "))
         if a == 0:
             print("equation cannot be solved")
        elif (b < a \text{ and } b < c) \text{ or } (b > a \text{ and } b < c):
             d = (b**2) - (4*a*c)
             x = -b + cmath.sqrt(d) / (2*a)
             y = -b - cmath.sqrt(d) / (2*a)
             print("The two values of x are: ",x," ", y)
         else:
             d = (b**2) - (4 * a * c)
             x = -b + sqrt(d) /(2*a)
             x = -b - sqrt(d) /(2*a)
             print("The two values of x are: ",x, " ", y)
```

```
Input the value of a: 1
Input the value of b: 5
Input the value of c: 6
The two values of x are: (-4.5+0j) (-5.5+0j)
```

```
In [1]: | # exercise 2
        def sequence(a,d):
            x = str(input("Do you want to find the nth term Yes or No: "))
            v = x.casefold()
            #print(y)
            while(v == "ves"):
                n = int(input("Enter the nth term you want to find: "))
                tn = a + ((n - 1) * d)
                print(tn)
                x = input("Do you want to find another nth term of the sequence: ")
                v = x.casefold()
            return "The answer of the nth term you entered is: ", tn
        a = int(input("Enter the first term of the sequence: "))
        d = int(input("Enter the common difference of the sequence: "))
        sequence(a,d)
        Enter the first term of the sequence: 3
        Enter the common difference of the sequence: 6
        Do you want to find the nth term Yes or No: YES
```

Enter the common difference of the sequence: 6
Do you want to find the nth term Yes or No: YES
Enter the nth term you want to find: 35
207
Do you want to find another nth term of the sequence: YeS
Enter the nth term you want to find: 45
267
Do you want to find another nth term of the sequence: YES
Enter the nth term you want to find: 96
573
Do you want to find another nth term of the sequence: no
Out[1]: ('The answer of the nth term you entered is: ', 573)

```
In [51]: # exercise 3
    text = input("Enter the text you want to check for palindrome: ")
    x = text.casefold()
    #print(x)
    y = len(text)
    z = text[y::-1]
    #print(z)
    if x == z:
        print("Yes your string is palindrome")
    else:
        print("Sorry! your string is not palindrome")
```

Enter the text you want to check for palindrome: civic Yes your string is palindrome

```
In [39]: | # exercise 4
         name = str(input("Name: "))
         father name = str(input("Father Name: "))
         roll no = int(input("Roll No: "))
         date of birth = str(input("Date of Birth: "))
         maths = eval(input("Enter your Math marks: "))
         phy = eval(input("Enter your Physics marks: "))
         comp = eval(input("Enter your Computer marks: "))
         urdu = eval(input("Enter your Urdu marks: "))
         isl = eval(input("Enter your Islamiat marks: "))
         total marks = 500
         total num = (maths + phy + comp + isl + urdu)
         percentage = (total num / total marks) * 100
         if percentage >= 90:
             grade = "A+"
         elif percentage >= 80 and percentage < 90:
             grade = "A"
         elif percentage >= 70 and percentage < 80:
             grade = "B"
         elif percentage >= 60 and percentage < 50:
             grade = "c"
         elif percentage >= 50 and percentage < 40:
             grade = "D"
         else:
             grade = "F"
         print("\n")
         print("\t\t\t\tBoard of Secondary Education, Karachi \n\t\t\t\t\t STATEMENT OF MARKS \n\t\t\t\t\t F.S.C EX
         print("Name: ", name, "\t Father Name: ",father_name, "\t Roll No: ",roll_no, "\t Date of birth: ", date_of_birt
         print("\n")
         print("\t\t\t\t Maths: ", maths," | 100\n\t\t\t\t Physics: ",phy," | 100\n\t\t\t\t\t Computer:",comp," |
         print("\tTotal: ",total num, "\t | Percentage: ", percentage, "% \t | Grade: ", grade)
```

Name: Gul e hasnain Father Name: Waseem

Roll No: 010

Date of Birth: 22 January 2000

Enter your Math marks: 90 Enter your Physics marks: 89 Enter your Computer marks: 87 Enter your Urdu marks: 78 Enter your Islamiat marks: 92

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Board of Secondary Education, Karachi STATEMENT OF MARKS F.S.C EXAMINATION

SCIENCE GROUP

Name: Gul e hasnain Father Name: Waseem Roll No: 10 Date of birth: 22 January 2000

Maths: 90 | 100 Physics: 89 | 100 Computer: 87 | 100 Urdu: 78 | 100 Islamiat: 92 | 100

Total: 436 | Percentage: 87.2 % | Grade: A

```
In [1]: # Exercise 5
        row_num = int(input("input the number of rows: "))
        col_num = int(input("input the number of columns: "))
        matrix = []
        print("Enter the entries row wise: ")
        for row in range(row_num):
            a = []
            for col in range(col_num):
                a.append(int(input()))
            matrix.append(a)
        for row in range(row_num):
            for col in range(col_num):
                print(matrix[row][col], end = " ")
            print()
        input the number of rows: 5
        input the number of columns: 5
        Enter the entries row wise:
        1
        2
        3
        4
        5
        2
        4
        6
        8
        10
        3
        6
        9
        12
```

```
15
          20
          25
         1 2 3 4 5
         2 4 6 8 10
         3 6 9 12 15
         4 8 12 16 20
         5 10 15 20 25
In [23]: # Exercise 6
         x = [[1, 2, 2], [2, 3, 2], [2, 4, 2]]
         y = [[3, 4, 2], [4, 5, 2], [5, 4, 3]]
         result = [[0, 0, 0], [0, 0, 0], [0, 0, 0]]
         for i in range(len(x)):
              for j in range(len(y)):
                  result[i][j]= x[i][j] + y[i][j]
         for r in result:
              print(r)
         [4, 6, 4]
```

[4, 6, 4] [6, 8, 4]

[7, 8, 5]

[5, 14] [18, 32]