Question 01

```
def fibonacci(num):
    if(num==1):
        return 1
    if(num==0):
        return 0

    return fibonacci(num-1)+fibonacci(num-2)

print(fibonacci(10))
```

```
55
```

Question 02

```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
print("The word ['hello'] extracted form the given list is give
below")
lst[3][1][2]
```

```
The word ['hello'] extracted form the given list is give below

['hello']
```

Question 03

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':
[1,2,3,'hello']}]}]}

print('The word hello extracted from the given dictionary is given
below')
d['k1'][3]['tricky'][3]['target'][3]
```

```
The word hello extracted from the given dictionary is given below

'hello'
```

Question 04

```
def fine_calculator(speed):
    if(speed <= 70):
        return "No fine"
    elif(speed>70 and speed<=80):
        return "Less fine"
    elif (speed>80):
        return "Car Sieze"
```

```
import random

speed=random.randint(0,125)

print("Your speed is",speed,"\b. Your fine will be ",
fine_calculator(speed),"\b.")
```

```
Your speed is 100 . Your fine will be  Car Sieze .
```

Question 05

```
def duplicate_exist(array):
    duplicate=False
    for i in range(0,len(array)):
        if(array.count(array[i]) > 1):
            array.remove(array[i])
            duplicate=True
            break
    if(duplicate):
        return True
    else:
        return False

import random
array =[]

for i in range (0,10):
    array.append(random.randint(0,100))

print(array)
if(duplicate_exist(array)):
    print("\nYes duplicates exist in the given array.")
    print("After removing duplicate element we have\n")
    print(array)
else:
    print("No duplicates exist in the given array.")
```

```
[36, 50, 12, 1, 61, 79, 29, 57, 82, 57]

Yes duplicates exist in the given array.
After removing duplicate element we have

[36, 50, 12, 1, 61, 79, 29, 82, 57]
```

Question 06

```
import csv

with open(r"C:\Users\Bilal\Desktop\AI_LAB\Demo.csv",'r') as file:
```

```
    csvreader = csv.reader(file)
    for row in csvreader:
        print(row)
```

```
['Series_reference', 'Period', 'Data_value', 'Suppressed', 'STATUS',
'UNITS', 'Magnitude', 'Subject', 'Group', 'Series_title_1',
'Series_title_2', 'Series_title_3', 'Series_title_4',
'Series_title_5']
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```

```
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Data Collection - BDC', 'Industry by employment variable', 'Filled
jobs', 'Agriculture, Forestry and Fishing', 'Actual', '', '']
```

Question 07

```
text = input("Enter the text ")
```

```
count_letter=0
count_number=0

for i in range (0,len(text)):
    if((ord(text[i])>=65 and ord(text[i])<=90) or (ord(text[i])>=97
and ord(text[i])<=122)):
        count_letter+=1
    elif((ord(text[i])>=48 and ord(text[i])<=57)):
        count_number+=1

print("The text you entered is",text)
print("Count of numbers in the given text is ", count_letter,"\b.")
print("Count of letters in the given text is ", count_number,"\b.")
```

```
Enter the text abd678976324
The text you entered is abd678976324
Count of numbers in the given text is  3.
Count of letters in the given text is  9.
```

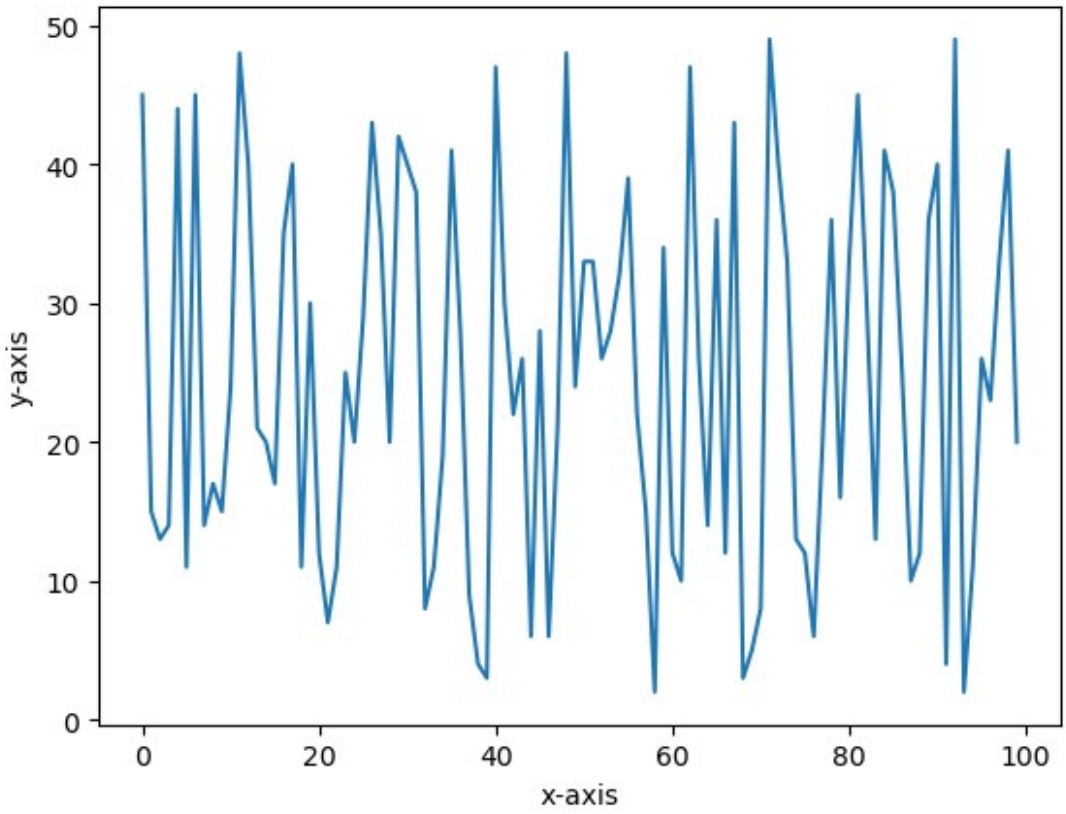
Question 08

```
import matplotlib.pyplot as plt
import random


x_array=[]
y_array=[]
for i in range(0,100):
    x_array.append(i)
    y_array.append(random.randint(0,50))

plt.plot(x_array,y_array)
plt.xlabel("x-axis")
plt.ylabel("y-axis")

plt.show()
```


50
40
30
20
10
0
y-axis
0
20
40
60
80
100
x-axis