1.Write a Python program to find the largest of three numbers.

```
a=int(input("Enter num1:"))
b=int(input("enter num2:"))
c=int(input("enter num3:"))
if a>b and b>c:
print("largest no.is",a)
elif
b>c and c>a:
 print("largest no.is",b)
 else:
 print("largest no.is",c)
```

output

```
 Enter num1:10
 enter num2:30
enter num3:20
largest no.is 3
```

2.write a python programme to find radius of circle?

```
PI=3.14
r=float(input("Please Enter the radius of circle:"))
area=PI*r*r
print ("area of circle",area)
```

output

```
Please Enter the radius of circle:5
area of circle 78.5
```

3.write a programme to find reverse of string?

```
print("Enter the string:", end="")
str=input()
strRev=str[::-1]
str=strRev
```

```
print("Reverse=",str)
```

Enter the string:shahana

Reverse= anahahs

4.Write a Python function to find the sum of all elements in a list.

```
  def  sum(ls):
 count=0
 for i in ls:
    count=count+i
 print("sum of element in the list",count)
a=[5,10,10,20]
sum(a)
```

sum of element in the list 45

5.Write a Python function to remove duplicate elements from a list.

```
  def dup(ls):
 es=[]
 for i in ls:
    if i not in es:
      es.append(i)
 print("elements are ",es)
list=[12,14,15,14,22]
dup(list)
```

elements are  [12, 14, 15, 22]

6.Write a Python function to check if a list is empty.

```
  def empty(ls):
   if len(ls)==0:
```

```
        return 0

    else:

        return 1

ls=[]

if empty(ls):

    print("the list contain value")

else:

    print("the list is empty")
```

<u>output</u>

the list is empty

7.Write a Python function to find the average of a list of numbers.

```
  def avg(list):

    return sum(list)/len(list)

list=[5,10,12,15]

avg=avg(list)

print("average of list",round(avg,2))
```

<u>output</u>

 average of list 10.5


<u>DICTIONARY</u>

1.How to create a dictionary?

```
dictname = {

"Name": "Anju",

"District": "kollam",

"Age": 25

}

print(dictname)
```

2. find the length of the string?

```
dictname = {
```

```
"Name": "Anju",

"District": "kollam",

"Age": 25

}
print(len(dictname))
```

3. To remove district from the dictionary?

```
dictname = {

"Name": "Anju",

"District": "kollam",

"Age": 25

}
thisdict.pop("District")
print(dictname)
```

4. Write a Python program to concatenate following dictionaries
to create a new one?

```
d1={"Name":"Ramu" , "Age":26}

d2={"City": "kochi", "Gender": "Male"}

d3 = {}
for d in (d1, d2): d3.update(d)
print(d3)
```

5. Write a program to get the maximum and minimum value of
dictionary

```
marks={"m1":57 , "m2":99 , "m3":69 , "m4":45 , "m5":71}

v = marks.values()
maxi = max(v)
```

```python
mini = min(v)

print("Maximum :",maxi)
print("Minimum :",mini)
```

6. Write a Python program to check whether a given key
already exists in a dictionary

```python
d = {"Name":"Ram","Age":23}
"""
if "Name" in d:
print('Key is Available in the Dictionary')
else:
print('Key is not Available in the Dictionary')
"""
i="District"
if i in d:

print('Key is Available in the Dictionary')
else:
print('Key is not Available in the Dictionary')
```

7. Write a Python program to Merge two Python dictionaries
into one

```python
keys = ["One", "Two", "Three", "Four", "Five"]
values = [1, 2, 3, 4, 5]

rest = dict(zip(keys, values))
print(rest)
```

8. Write a Python program to sum all the items in a dictionary

```python
d = {1:23,2:45,3:-17,4:87}
```

print(sum(d.values()))

9. To create an empty dictionary

dict1 = {}

Print("dict1:",dict1)

10.Python program to compare two dictionaries

record1={'id':100,'name':shiva,'age':22}

record2={'id':104,'name':Ami,'age':22}


record3={'id':101,'name':shiji}

if record1==record2:

print("record1 is equal to record2")

else:

print("record1 is equal to record2")

print("record1 is not equal to record2")


if record2==record3:

print("record2 is equal to record3")

else:

print("record2 is not equal to record3")


### FUNCTION

1..Write a Python function to calculate the area of a rectangle. The function should take the length and width as parameters and return the area.

```
def rectangle(l,b):
    return l*b
area=rectangle(5,10)
print("area of
rectangle:",area)
```
output area of rectangle: 50

2.Write a Python function to check if a given number is positive, negative, or zero.

The function should take a number as a parameter and print a message indicating

the number's sign.
```python
def isPositive(num):

    if num>0:
        print(num,"number is positive")
elif num==0:
                print(num,"num is
zero")      else:
print(num,"num is negative")
         isPositive(10)
isPositive(0)
isPositive(-5)
isPositive(1)
```

output

10 number is positive

0 num is zero

-5 num is negative

1 number is positive

3.Write a Python function to find the largest element in a list. The function should take

a list of numbers as a parameter and return the largest number.
```python
def larger_list(ls):

    emp=0
for i in ls:
```

```
        if i>emp:                emp=i
print("largest number in the list:",emp)
a=[10,12,13,150] larger_list(a)
```

4.Write a Python function to reverse a string. The function should take a string as a parameter

and return the reversed string.

```
def reverse(s):

    str = ""       for
i in s:            str
= i + str      return
str
  s =
"shahana"
  print("The original string is : ",
end="") print(s)    print("The reversed
string is : ", end="") print(reverse(s))
```

The original string is : shahana The reversed
string is : anahahs

5.Write a Python function to generate a random number between a given minimum

and maximum value. The function should take the minimum and maximum values as

parameters and return a random number within that range.

```
import random

def random_no(num1,num2):
      return random.randint(num1,num2)
 result=random_no(5,10)
print("value between min and max is:",result)
```

output value between min and max is: 8

6.Write a Python function to find the sum of all elements in a list.

```
def  sum(ls):

 count=0
for i in ls:
     count=count+i  print("sum of element
in the list",count)

a=[5,10,10,20]
sum(a)
```

output sum of element in the list 45

7.Write a Python function to remove duplicate elements from a list.

```
def dup(ls):

 es=[]   for i in ls:
if i not in es:
es.append(i)
print("elements are ",es)
list=[12,14,15,14,22]
dup(list)
```

output elements are  [12, 14, 15, 22]

8.Write a Python function to check if a list is empty.

```
def empty(ls):

    if len(ls)==0:
return 0      else:
       return
1 ls=[] if
empty(ls):
    print("the list contain value") else:
    print("the list is empty")
```

output

the list is empty


9.Write a Python function to find the index of a specific element in a list.

```
def index(n1):
```

```
    for i in range (len(n1)):
if n1[i] == num:
            print("the index is",i)
break list=[10,20,25,33,45] num=int(input("enter
the number want to check:")) index(list)
```

output enter the number want to check:45

the index is 4

10.Write a Python function to sort a list of numbers in ascending order.

```
def ls_sort(elem):
    elem.sort()      print("sorted
element is ",elem)
list=[26,30,15,20] ls_sort(list)
```

output sorted element is  [15, 20, 26, 30]

11.Write a Python function to merge two lists into one.

```
def merge_ls(ls1,ls2):
 new_lst=ls1+ls2  print("merge
list is:",new_lst)
l1=[5,10,12,16] l2=[8,20,22,25]
merge_ls(l1,l2)
```

output

merge list is: [5, 10, 12, 16, 8, 20, 22, 25]

12.Write a Python function to find the average of a list of numbers.

```
 def avg(list):
    return sum(list)/len(list)
list=[5,10,12,15] avg=avg(list)
print("average of
list",round(avg,2))
```

output

average of list 10.5

13.Write a Python function to check if a list contains a specific value.

```python
 def spec(list):

    if input in list:
        print("value in the list")
else:
        print("value not in the list")
list=[10,20,30,40,50] input=int(input("Enter the
value to be checked:")) spec(list)
```

output Enter the value to be checked:50

value in the list

14.Write a Python function to reverse the order of elements in a list.

```python
def reverse(ls):

    emp_l=[]       for i in
range(-1,-a-1,-1):
        emp_l.append(l[i])
    print ("reverse list is:",emp_l)

l=[5,10,15,20,25]
a=len(l)
reverse(l)
```

output

reverse list is: [25, 20, 15, 10, 5]

15.Write a Python function to remove the last element from a list.

```python
def rem_last(ls_ele):

    nw=[]      for i in
range(0,a-1):
nw.append(ls_ele[i])
print("new list is :",nw)
list=[10,12,14,16]
a=len(list) rem_last(list)
```

output

new list is : [10, 12, 14]

# SQL

1.Write a SQL query to retrieve all records from a table named "Customers."

**ANS:**

select * from customers;

2. How would you select the top 5 highest-paid employees from a table named

"Employees"? **ANS:**

 select * from

employees order by SALARY DESC

LIMIT 5;

2. Explain the difference between the WHERE clause and the HAVING clause in SQL.

**ANS:**

Where and having clause is used to filter the data, where clause is used to filter single row level of data

And having clause is used to print data with contain aggregate function.

3. Write a SQL query to calculate the average salary of all employees in a table

    named "Employee Details."

**ANS:**

Select top 50 percent * from employee; select

avg (SALARY)

FROM employee_details;

4. What is the purpose of the GROUP BY clause in SQL? Provide an example query

that utilizes it.

**ANS:**

Group by clause is used to group rows that having same value  in specified column .The group by function is often used with aggregate function,

Eg:

Select department(salary) as result

From worker

Group by department;

5. Write a SQL query to retrieve the names and ages of all employees from a table
   named "Employees."

**ANS:**

select name, age FROM Employees;

6. How would you calculate the total sales amount for each month of the year from a
   table named "Sales" that has a "Date" column?

**ANS:**

   select product**,**

year(date),month(date),        sum(sale)

from sales        group by product**,**

year(date),month(date)        order by product**,**

year(date),month(date);

7. Explain the difference between the INNER JOIN and LEFT JOIN in SQL.

**ANS:**

Inner join

Inner join will be return the record that having pair on both sides.

Left join

If we need all record from left table no matter if they have pair in the right table

9. Write a SQL query to find the second highest salary from a table named

"Employees."

**ANS:**

SELECT DISTINCT Salary

FROM employee

ORDER BY Salary DESC

LIMIT 1 OFFSET 1;


10.How would you add a new column named "City" to a table named "Customers"

with the data type VARCHAR(50)?

**ANS:**

Alter table Customers

Add  City varchar(100);



11.Write a SQL query to retrieve the names of customers who have not made any

purchases from a table named "Customers" and a table named "Orders."

**ANS:**

SELECT Customers.Customername

FROM Customers

Left join Orders ON Customers.CustomerID = Orders.CustomerID

Where Orders.OrderID IS NULL;


12.Explain the purpose of the SQL functions COUNT(), SUM(), and AVG().

**ANS:**

Coun()t: This function counts the number of rows in a result set or the number of non-null values in a specified column it can be also use in counting rows in a table.

Sum():This function calaculate the sum of all values in a specified column.

Avg():This function calculate the average or mean values in a specified column.


13.How would you retrieve the top 3 most frequent values from a column named

"Category" in a table named "Products"?

**ANS:**

SELECT Category, COUNT(*) AS Frequency

FROM Products

GROUP BY Category

ORDER BY Frequency DESC

LIMIT 3;

14.Write a SQL query to update the "Quantity" column of a table named "Inventory"

by doubling the current values for all items where the "Category" is equal to

"Electronics." **ANS:**

Update inventory

Set quantity = quantity *2

Where category = electronics;


15.Explain the difference between the UNION and UNION ALL operators in SQL.

**ANS:**

Uninon operator: The Union operator is used to combine the result sets of multiple select queries into a single result set.It remove the duplicate value from the combine result.

Unuon all operator: The Union operator is used to combine the result sets of multiple select queries into a single result set.it will not remove duplicate row


16.How would you update the "Email" column of a table named "Contacts" to change all

email addresses ending with "@old.com" to end with "@new.com"?

**ANS:**

Update contact

Set email =replace(email,'@old.com','@new.com')

Where email like '@old.com';


17.Write a SQL query to display the names of all customers who have made at least

two purchases.

**ANS:** select customername

from customers where

customerid in (     select

customerid     from orders

group by customerid

having count(orderid) >= 2

);

18.Explain the difference between a primary key and a foreign key in a database.

**ANS:**

Primary key: primary key is a unique identification key for each record in a table

Foreign key:A foreign key establishes a relationship between tables by referencing the primary key by another table

19.How would you delete all records from a table named "Products" where the

"Category" column value is equal to "Books"?

**ANS:**

Delete from products

Where category = books;

20.Write a SQL query to retrieve the total count of orders for each customer from a

table named "Orders."

**ANS:**

select customer_id, count(order_id) as total_orders

from orders group by customer_id;