Task -7.1   Utilizing 'Functions' concepts in Python.

AIM :- To write the python program using 'Functions' concepts in Python Programming.

ALGORITHM :-

1. Start the program.
2. Print a welcome message : outputs a simple greeting.
3. Determine and print the number of students: Uses len() to find the number of elements in the student_names list.
4. Print the type of lists : Uses type() to show the type of the student_names and student_grades lists.
5. Find and print highest and lowest grades: Uses max() and min() to determine the highest and lowest values.
6. Print sorted list of grades.
7. Print reversed list of grades: Uses reversed() to reverse the sorted list.
8. Stop

PROGRAM :-

```
def analyze_student_grades():
student_names = ["Alice", "Bob", "Charlie", "Diana"]
student_grades = [85, 92, 78, 90]

Print(" welcome to the student Grades Analyzer ! \n")
num_students = len(student_names)
```

Output :-

Number of students : 4

Highest grade : 92

Lowest grade : 78

Sorted grades : [78, 85, 90, 92]

Reversed grades : [92, 90, 85, 78]

Grade indices from 1 to number of students :

[1, 2, 3, 4]

```
Print ("Number of students : ", num_students)
Print ("\nType of student_names list :", type (student_
        names))
Print (" Type of student_grades list :", type (student_
        grades))

highest_grade = max (student_grades)
lowest_grade = min (student_grades)
Print ["\n Highest grade :", highest_grade)
Print (" Lowest grade :", lowest_grade)

sorted_grades = sorted (student_grades)
Print ("\n Sorted grades : ", sorted_grades)

reversed_grades = list (reversed (sorted_grades))
Print ("Reversed grades :", reversed_grades)

grade_indices = list (range (1, num_students+1))

Print ("\n Grade indices from 1 to number of
       students : ", grade_indices)

analyze_student_grades ()
```

TASK 7.2 :   Creating a small calculator by using Python

AIM :   To create a small calculator applications to
help users perform basic arithmetic
Operations and greet them with a personalised
message.

ALGORITHM :

1. Start the program.
2. User Input for Numbers : The program prompts the
   User to enter two numbers.
3. User Input for operation : The program
   prompts the user to choose an arithmetic
   operation.
4. Perform Operation.
5. Display Result
6. Stop.

PROGRAM :

```python
def add (a,b):
    return a+b

def subtract (a,b):
    return a-b

def multiply (a,b):
    return a*b

def divide (a,b):
    if b!=0:
        return a/b
    else:
        return "Error = Division by zero"
def greet (name):
```

Output :

Arithmetic operations :

Sum of 5 and 4 : 9

Difference between 10 and 8 : 2

Product of 10 and 5 : 50

Quotient of 6 and 2 : 3.0

Greeting :

Hello, Alice! welcome to program

```python
    return f"Hello, {name}! welcome to the program."
def main():
    num1 = 10
    num2 = 5
    Print("Arithmetic Operations!")
    Print(f"sum of {num1} and {num2}:", add(num1,num2))
    Print(f"Difference between {num1} and {num2}:", subtract
          (num1, num2))

    Print(f"product of {num1} and {num2}:", divide(num1,
          num2)

        User_name = "Alice"
        print("\n Greeting:")
        Print(great(user_name))

    if __name__ == "__main__":
        main()
```

VEL TECH - C	
EX NO.	7
PERFORMANCE (5)	5
RESULT AND ANALYSIS (3)	5
VIVA VOCE (3)	5
RECORD (4)	
TOTAL (15)	
SIGN WITH DATE	15

RESULT : Thus, the python program using 'Functions'
Concepts was successfully executed.