TASK-7 UTILIZING 'FUNCTIONS' CONCEPTS IN PYTHON PROGRAMMING 8/9/25

Aim: To write the python program using 'Functions' concepts in python programming.

7.1: You are developing a small python script to analyze and manupulate list of student. write a python program that satisfies the above requirements using the built in functions print(), len(), type(), max(), min(), sorted(), reversed & range()

ALGORITHM:

1. start the program.
2. print a welcome message: outputs a simple greeting.
3. Determine & print the number of students.
4. Print type of lists.
5. Find & print highest & lowest grades.
6. Print sorted list of grades:
7. Print reversed list of grades.
8. Generate & print a range of grade indices.
9. stop

PROGRAM:

```
def analyze_student_grades():
    # simple data
    student_names = ["Alice", "Bob", "charlie",
    student_grades = [82,92,78,90] "Diana"]
#1. print a welcome message
  Print("welcome to the student grades Analyzer!\n")
#2. Determine and print the no of students
   num_students = len(student_names)
  Print("Number of students:" num_students)
#3. print the type of student names list & grades list.
Print("\nType of student_names list:"type(student_names))
Print("Type of student_grades list:",type(student_grades))
```

#4. Find & print the highest & lowest grade

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

#5. print the list of grades sorted in ascending order

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

#6. print list of grade in reversed order

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

#7. Generate & print a range of grade indices from 1 to the no of students

```
grade_indices = list(range(1, num_students + 1))
Print("\n Grade indices from 1 to number of students:", grade_indices)
    # Run the analysis
        analyze_student_grades()
```

7.2: You are tasked with creating a small calculator application to help users perform basic Personalized message. You need to perform the +, -, ÷, *

ALGORITHM:

1. Start
2. User input for numbers.
3. User input for operation.
4. Perform operation.
5. Display result.
6. Stop

Output:

Welcome to the Student grade analyzer
Number of students: 4
Type of student_names list: <class 'list'>
Type of student_grades list: <class 'list'>
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]

OUTPUT :

Arithmetic operations :

Sum of 10 & 5 : 15

Difference blw 10 & 5 : 5

Product of 10 & 5 : 50

Quotient of 10 & 5 : 20

Greeting :

Hello Alice welcome to the program

gram: def add(a,b):
"""Return the sum of two numbers""".
return a+b
def subtract(a,b):
"""Return the difference b/w two numbers."""
return a-b
def multiply(a,b):
"""Return the product of two numbers:"""
return a*b
def divide(a,b):
"""Return the quotient of 2numbrs. divison by 0:"""
if b!=0:
return a/b.
else:
return "Error: Divison by zero"
def greet(name):
"""Return a greeting message for the user.""
return f"Hello, {name}! welcome to the program".
def main():
num1 = 10
num2 = 5
Print(f"Difference b/w {num1} & {num2}", subtract(num1, num2))
Print(f"product of {num1}&{num2}:"multiply(num1, num2))
Print(f"Quotient of {num1} & {num2}:"divide(num1, num2)
# Greeting the user
# Run main function
if __name__ == "__main__":
main()

VEL TECH	
EX No.	
PERFORMANCE (5)	
RESULT AND ANALYSIS (5)	
VIVA VOCE (5)	
RECORD (5)	
TOTAL (20)	
SIGN WITH DATE	

RESULT: Thus, the python program using 'Functions' concepts was sucessfully executed & the output was verified.