Task no: 6 Utilizing 'Functions' concept in python Programming.

Aim: To write the python programs using 'Functions' concept in python programming.

Algorithm:

1. Start
2. Print a welcome message: output a simple greeting
3. Determine & print the number of students
4. Print the type of list
5. Find and print highest and lowest grades:
6. Print sorted list of grades
7. Print reversed list of grades
8. Generate & print a range of grade indexes.
9. Stop.

Program:

```
def analyze_student_grades():
    student_names = ["Alice", "Bob", "Charlie", "Diana"]
    student_grades = [85, 92, 78, 90]
#1. Print a welcome message
    print("Welcome to the student Grades Analyzer!\n")
#2. determine and print the number of students.
    num_student = len(student_names)
    print("Number of students:", num_students)
#3. Print the type of student names list and the grades list
    print("\n Type of student_names list:", type(student_names))
    print("Type of student_grades list:", type(student_grades))
#4. Find and print the highest and lowest grade
    highest_grade = max(student_grades)
    lowest_grade = min(student_grades)
    print("\n Highest grade:", highest_grade)
    print("lowest grade:", sorted_grades)
```

output:

```
Welcome to student Grades Analyzer!
Number of student : 4
Type of student_name 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 index from 1 to number of students : [1,2,3,
```

#6. Print the list of grades sorted in reverse order

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

#7. Generate & print a range of grade indices from 1 to the number of students

list(range(1, num_students + 1))
print("\n Grade indices from 1 to number of students:", grade_indices)

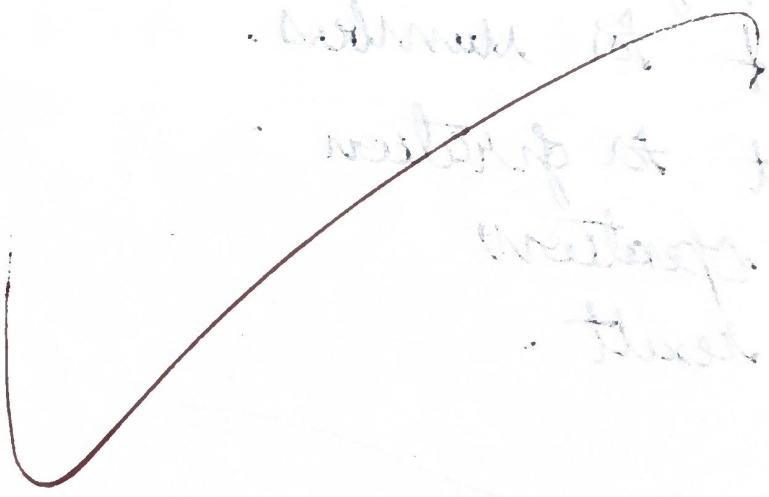
Run the analysis

analyze_student_grades()

~~~

6.2

Aim: You are tasked with creating a small calculator application to help users perform basic base arithmetic operations & greet them with a personalized message

Algorithm:

1. Start the program
2. User Input for numbers.
3. User Input for operation.
4. Perform operations
5. Display result.
6. Stop.

```
def add(a,b):
    """Returns the sum of two numbers."""
    return a+b
def subtract(a,b):
    """Returns the difference between two numbers."""
def multiply(a,b):
```
~~~

Arithmetic operations:
Sum of 10 and 5 : 15
Difference between 10 and 5 : 5
Product of 10 and 5 : 50
Quotient of 10 and 5 : 2.0

Greeting :
Hello, Alice ! welcome to the program.



```
"""
    Returns the product of two numbers."""
    return a * b
def divide(a, b):
"""
    Returns the quotient of two numbers. Handles division
    by zero"""
    if b != 0:
        return a/b
    else:
        return "Else : Division by Zero"
def greet(name):
"""Returns a greeting message to the user."""
    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} & {num2}:", multiply(num1, num2))
    print(f"Quotient of {num1} & {num2}:", divide(num1, num2))
# Greeting the user
user_name = "Dee"
print("\n Greeting:")
print(greet(user_name))
# Run the main function
if __name__ == "__main__":
    main()
```

VEL TECH	
EX NO.	6
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	
TOTAL (20)	
SIGN WITH DATE	15

Result: Thus the implementation of Utilizing 'Functions' concepts on python programing executed successfully.