Task . 7 Utilizing Functions! concepts in pathon Programmaing.

Aim:-To write the python program using Functing concepts in python Programming.

I-1: You are depreloping a small Python script to analyze and mainipulate a list of student grade for a class project. Write a Python program that satisfies the above requirements using the wilt-in frations print () (lon (), mox (), min () sorted(), reversed(), and range().

Algarithm:

- 1. Start the program.
- 2. Rint a welcome message: Outputs a simple greeting.
- 3. Determine and part the number of stadents: Uses lan() to find the number of elements in the stadents_names list.
- u. Print the type of lits: Uses type () to show the types of the student-names and student-grade lists.
- 5. Find and prints highest and lowest grades: Uses max() and min() to determine the highest and lovest value in stodout-grades.
- 6. Print sorted list of grades: Uses started () to sost the godes.
- 7. Print reversed list of grades: Uses reversed () to reverse the sosted list and converts it to a 1231
- 8. Generate and print a range of grade indices: Uses rouge () to create a list of indices from 1

to the number of stadents 9. Stop. Program: def analyze_stident-grade(): sh tell about the delte for anyth It Sample data stodent - names = ["Alice", "Bob", "Charlie", "Daina"] Stadent - grade = [85,92,78,90] # 1. Print a welcome message Print ("Welcome to the Stadent Goode Analyzer! In). # 2. Determine and print the number of stodents. num-streets = len (student-names) Print ("Number of stodents", num_stodents) # 3. Print the trype of the stodent names list and the grades list. Print ("Intype of student-name list:", type (studentnames)) print ("Type of stodent-grade list: ", type (stodent-grade))) # 4. Find and print the highest and lowest grade. highest-grade=mex[student-grade] lowest-grade = min (stobut-grade) Print (" in Highest grade: ", o highest_grade) Print ("Lauest grade:", lowest-grade) # 5. Print the list of grade storted in ascending order. sated gode = sorted (stokent grades) print ("Insorted grades: ", sorted-grade) #6. Print the list of grade in hererse oxder. reversed-grade = list (reversed (sorted-grade)) Print ("Reversed grades: ", reversed - grades)

inhely to reduce off of Output: Welcome to the students Grades Analyzer! Number of stodents: 4 Type of students_name list: (sloss !\list') - spi and had Type of stolente-grade list (class list) and distinct Highest grade: 92 and " doe" " soils) - some to trade [orisk sp. 22]: burp . trobate Lowest grade: 78 sorted grades: [78,85,90,92] Reversed grades: [92,90,85,72] Grade indicate from 1 to number of stodent: [1,2,3,4] 1 structure moun. " 2 to state to radmost") this Wi zarrow tradete all lo angel it tail site - 1831 saborp of bus trade to) aget i' . He'll arrive trobate (a sapital ") tiles (borg trable) are " tell aborg bubble to age" tring - Level Som toolpin at thing so but 1.1 4 [shorp trabel from shorp to we. (shorp trobbe) win = shorp of see (berg to spino ! whom happin v ") him (woung towal " : sharp for ! ") time pertonessen is helper shows to fit of the of the College to dela both of . Lag. both is 1 Harris and market to the work of the fire a word of borg to hill the total date we have the most bit about a war (30h. 20 - D. W. " Exhan barned") this

#7. Generate and print a range of grade indicates from 1 to the number of stodents grade-indicas = list (range (1, num_students+1)) print ("In Grade indices from 1 to number of statents!"; grade_indices)

Run the analysis analyze_stocent_grades() 7-2. You are tasked with creatings a small colculator application to help overs perform basic arithmetic operations and greet them with a personalized message: Your application should perform the following tasks: addition, subtraction, multiplication, division.

Algorithm.

1. Stort the program.

- q. User Input for Nombers: The program prompts
 the user to enter two numbers-
- 3. User Inputs for sparation: The program prompts
 the user to choose on arithmetic operation
 (addition, subtraction, multiplication, division)
- 4. Perform Operation: Based on the user's choice, the perform the chosen arithmetic operation usin the defined functions.
- 6. Display Result: The program display the result of the speration.

G-Stop.

Program:

def add (aib)

"" Retorn the som of two numbers" 1144

return atb.

def subtract (a, b):

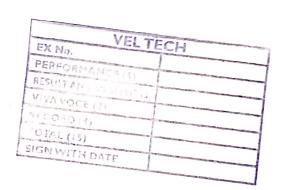
""" Reform the difference between two numbers. """
reform a-b.

def multiply (a,b):

return attb def divide (a, b):

you may forther builted you way Output Arithmetic Operations: Sum of 10 and 5:15 Sum of 10 and 5:15 Di-flerence between 10 and 5:5 product of 10 and 5:50 miles fail and miles miles Quartent of 10 and 5=200 Greeting: Hello, Alice! welcome to the program inverport off workergs of staged red the view to choose on arithmetic operation (misirib , votasilyitlang, nottootdos, rottibbo) tenting spranting based on the over's choice. notorno stronttiro vocato alto modra alto exectional bout ob off wice 6. Display Result: The program display the vessilt of the operation. (distable to the beginn the som of two numbers will dro ambol (d a) trust to b "The difference before the Mind. The dio NIO (die) jedrittimi to the statement of the product of the remaining dis winder :(dua) but has

"" Retorn the quotient of two numbers: Handles division by zero """ if b! =0 return alb else: retorn "Error: Division by zero" def greet (name): """ Retorn a greeting message for the user """ reform ff"Hello, & namey! welcome to the program. def main (): # Demonstrating the use of over-defined fonction. # Arithmetic operations. num 1 = 10 rum 2:5 print ("Arithmetic operations") print(f" Som of {num1} and {num2}:", add (num1; num
2)) print(f" Différence between [num 2] and { num 2]: ", subtract (mm1, mm2)). print(f" Product of {num1} and {num2}: "multipy (num 1, num 2)) print(f" another of (numing and (numz): ", divide (num), mon 2) # Greeting the user Oser_name = 11 Alice4 bung (~ In greeting: 11) print (greet (user-name)) # Run the main function. 17- name === 112 main - 11. main ()



Rosblt:Thus, the python program using 'Functions' concepts
was successfully executed and the outputs was
verified.