|  |
| --- |
| **Netaji Subhash Engineering College**  **Department of Computer Science & Engineering**  **B. Tech CSE 2nd Year 3rd Semester**  **2023-2024**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Name of the Course: IT Workshop (Python)**  **Course Code: PCC-CS393**  **Name of the Student: ARITTRA BAG**  **Class Roll No.: 103**  **University Roll No.: 10900122105**  **Date of Experiment: 13/10/2023**  **Date of Submission: 03/11/2023**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Assignment No.: A9\_01**  **Problem Statement:**  Write a program to read a number from the user. If the number is positive or zero, print it, otherwise raise an exception.  **Python Code:**  try:      number = float(input("Enter a number: "))      if number >= 0:          print("You entered a positive or zero number:", number)      else:          raise ValueError("You entered a negative number.")  except ValueError as e:      print("Error:", e)  **Sample Output(s):**  Enter a number: -1  Error: You entered a negative number.  **Assignment No.: A9\_02**  **Problem Statement:**  Write a program to read two numbers from the user and perform basic mathematical operations (addition, multiplication, subtraction, division) by handling all possible exceptions.  **Python Code:**  try:      num1 = float(input("Enter the 1st Number: "))      num2 = float(input("Enter the 2nd Number: "))      sum\_r = num1 + num2      diff\_r = num1 - num2      pro\_r = num1 \* num2      if num2 == 0:          raise ZeroDivisionError("Division by zero is not allowed.")      div\_r = num1 / num2      print(f"Addition result: {sum\_r}")      print(f"Subtraction result: {diff\_r}")      print(f"Multiplication result: {pro\_r}")      print(f"Division result: {div\_r}")  except ValueError as e:      print(f"ValueError: {e}. Please enter valid numeric input.")  except ZeroDivisionError as e:      print(f"ZeroDivisionError: {e}")  except Exception as e:      print(f"An error occurred: {e}")  **Sample Output(s):**  Enter the 1st Number: 10  Enter the 2nd Number: 0  ZeroDivisionError: Division by zero is not allowed.  **Assignment No.: A9\_03**  **Problem Statement:**  Write a program to read a number from the user and print its square. Generate KeyboardIntrrupt exception if Ctrl + C is pressed instead of a number.  **Python Code:**  try:      num = float(input("Enter a number: "))      sq = num \* num      print(f"The square of {num} is {sq}")  except KeyboardInterrupt:      print("Ctrl + C was pressed. Program terminated.")  except ValueError:      print("Invalid input. Please enter a valid number.")  **Sample Output(s):**    **Output-1:**  Enter a number: 3  The square of 3.0 is 9.0  **Output-2:**  Enter a number: Ctrl + C was pressed. Program terminated.  **Assignment No.: A9\_04**  **Problem Statement:**  Write a program to print random numbers infinitely. Raise the StopIteration exception after displaying 10 numbers to exit from the program.  **Python Code:**  import random  try:      for i in range(1, 11):          print(random.randint(1, 100))      raise StopIteration  except StopIteration:      print("StopIteration exception raised. Exiting the program.")  **Sample Output(s):**  73  67  60  10  89  52  28  88  39  50  StopIteration exception raised. Exiting the program.  **Assignment No.: A9\_05**  **Problem Statement:**  Write a program to generate a random number. Raise a user-defined exception if the number is below 0.5.  **Python Code:**  import random  try:      num=random.uniform(-100,100)      if num<0.5:          raise ValueError("ValueError: The number generated is below '0.5'")      else:          print(f"The number generated is: {num:.2f}")  except ValueError as e:      print(e)  **Sample Output(s):**  **Output-1:**  The number generated is: 78.45  **Output-2:**  ValueError: The number generated is below '0.5'  **Output-3:**  The number generated is: 57.20  **Assignment No.: A9\_06**  **Problem Statement:**  Write a program to read the age of a person and raise exceptions if age is negative.  **Python Code:**  try:      age=int(input("Enter your age: "))      if age<0:          raise ValueError("ValueError: Age cannot be negative.")      else:          print(f"Your age is {age}.")  except ValueError as e:      print(e)  **Sample Output(s):**  Enter your age: -1  ValueError: Age cannot be negative. |