**Question 1**

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| **Source Code** |

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| # Write a program to demonstrate the use of different operators in python.  def operators\_demo(a, b):  print("Addition:", a + b)  print("Subtraction:", a - b)  print("Multiplication:", a \* b)  print("Division:", a / b if b != 0 else "Undefined")  print("Modulus:", a % b if b != 0 else "Undefined")  print("Floor Division:", a // b if b != 0 else "Undefined")  print("Exponentiation:", a \*\* b)  print("Equal:", a == b)  print("Not Equal:", a != b)  print("Greater:", a > b)  print("Smaller:", a < b)  print("Logical AND:", a > 0 and b > 0)  print("Logical OR:", a > 0 or b > 0)  print("Logical NOT:", not(a > 0))  a = int(input("Enter first number: ")) b = int(input("Enter second number: ")) operators\_demo(a, b) |

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| **Output** |

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| Enter first number: 10 Enter second number: 5 Addition: 15 Subtraction: 5 Multiplication: 50 Division: 2.0 Modulus: 0 Floor Division: 2 Exponentiation: 100000 Equal: False Not Equal: True Greater: True Smaller: False Logical AND: True Logical OR: True Logical NOT: False |

**Question 2**

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| **Source Code** |

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| # Q2: Write a function to find all duplicates in two different lists  def find\_duplicates(list1, list2):  duplicates = set(list1).intersection(set(list2))  return list(duplicates)  while True:  print("\n--- Duplicate Finder Menu ---")  print("1. Find Duplicates")  print("2. Exit")  choice = int(input("Enter your choice: "))   if choice == 1:  list1 = list(map(int, input("Enter elements of first list separated by space: ").split()))  list2 = list(map(int, input("Enter elements of second list separated by space: ").split()))  duplicates = find\_duplicates(list1, list2)  if duplicates:  print("Duplicates found:", duplicates)  else:  print("No duplicates found")  elif choice == 2:  print("Exiting program...")  break  else:  print("Invalid choice! Try again.") |

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| **Output** |

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| --- Duplicate Finder Menu --- 1. Find Duplicates 2. Exit Enter your choice: Enter elements of first list separated by space: Enter elements of second list separated by space: Duplicates found: [] --- Duplicate Finder Menu --- 1. Find Duplicates 2. Exit Enter your choice: Exiting program... |

**Question 3**

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| **Source Code** |

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| # Q3: Write a function to print the sum of numbers in list having 3 at their units place  def sum\_with\_units\_digit\_3(numbers):  return sum(num for num in numbers if num % 10 == 3)  while True:  print("\n--- Sum of Numbers Ending with 3 Menu ---")  print("1. Calculate Sum")  print("2. Exit")  choice = int(input("Enter your choice: "))   if choice == 1:  numbers = list(map(int, input("Enter numbers separated by space: ").split()))  total = sum\_with\_units\_digit\_3(numbers)  print(f"Sum of numbers ending with 3 is: {total}")  elif choice == 2:  print("Exiting program...")  break  else:  print("Invalid choice! Try again.") |

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| **Output** |

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| --- Sum of Numbers Ending with 3 Menu --- 1. Calculate Sum 2. Exit Enter your choice: Enter numbers separated by space: Sum of numbers ending with 3 is: 6  --- Sum of Numbers Ending with 3 Menu --- 1. Calculate Sum 2. Exit Enter your choice: Exiting program... |