

Comsats University Islamabad Abbottabad Campus

INTRODUCTION

submitted by:

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REGISTRATION NO:

* (Fa21-bse-050)

Course Name:

* Artificial Intelligence

Submitted to:

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University:

* Comsats University Islamabad Abbottabad Campus

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Assignment Number:

* One

**Question No: 01**

Calculate the multiplication and sum of two numbers. If the product is less than or equal to 1000, return the product; otherwise, return their sum?

**Answer:**

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| def task1(n1,n2):      pr = n1\*n2      if(pr<=1000):          print("Product is ")          return pr      else:          print("Sum is ")          return n1+n2  while True:      n1 = int(input(("Enter 1st Num : ")))      n2 = int(input(("Enter 2nd Num : ")))      print(n1, " and ", n2 , " : ",task1(n1,n2))      ch= input("Do you want to run again : (y/n)")      if(ch !='Y' or ch !='y'):          break |

**Question No: 02**

Print the sum of the current number and the previous number for the first 10 numbers.  
**Answer:**

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| import random  ranNum = random.randint(1,100)  sumOfLess=0  sumOfGreat=0  print(ranNum)  for i in range(ranNum-1, ranNum-11, -1):     sumOfLess+=i    for i in range(ranNum+1, ranNum+11):    sumOfGreat+=i  print("Sum of Previous 10 Num then ", ranNum, " are ", sumOfLess)  print("Sum of Greater 10 Num then ", ranNum, " are ", sumOfGreat) |

**Question No: 03**Print characters from a string that are present at even index numbers?

**Answer:**

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| string = input("Enter the String : ")  for i in range(0, len(string), 2):      print(string[i],end="") |

**Question No: 04**

Write a program to get a string from user and remove the first n characters from a string and return a new string.

**Answer:**

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| string = input("Enter the String: ")  delete = int(input("Enter the number of characters you want to delete: "))  *# Option 1: Print without removing from original string*  print("Approach no 01:")  print(string[delete:])  *# Option 2: Create a new string with characters removed*  print("\nApproach No 02:")  new\_string = string[delete:]  print(new\_string)  *# Option 3: Reassign string with removed characters (if desired)*  print("\nApproach No 03:")  string = string[delete:]  *# Reassigning to modify the original string*  print(string) |

**Question No: 05**

Write a program to generate a random number between 1-100 and find whether it is even or odd.

**Answer:**

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| import random  ranNum = random.randint(1,100)  def even(n):      if(n%2==0):          return 'EVEN'      else:          return 'ODD'    isEven = even(ranNum)  print("Random Number generated is ", ranNum, " and it is ", isEven) |

**Question No: 06**

Write a program to declare an array of integers and print its elements. Implement a function to find the sum of all elements in an integer array?

**Answer:**

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| def Sum(x):      sum =0      for i in x:          sum+=i      return sum  x=[1,2,3,4,5]  print("Element of x are : ", x)  print("Sum : ", Sum(x)) |

**Question No: 07**

Create two arrays of equal length and perform element-wise addition.

**Answer:**

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| x = [1,2,3,4,5]  y = [6,7,8,9,10]  z = []  for i in range(len(x)):      z.append(x[i] + y[i])    print ("x = ", x)  print("y = ", y)  print("z = ", z) |

**Question No: 08**

Write a function to remove duplicates from an array and return the unique elements.

**Answer:**

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| def removeDuplicate(x):      y = []      for i in x:          if i not in y:              y.append(i)      return y  x=[1,1,2,2,2,3,3,3,3]  print(removeDuplicate(x)) |

**Question No: 09**

Implement a function to check if two strings are anagrams using arrays.

**Answer:**

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| def are\_anagrams(str1, str2):  *# Remove spaces and convert both strings to lowercase*      str1 = str1.replace(" ", "").lower()      str2 = str2.replace(" ", "").lower()  *# If lengths are different, they cannot be anagrams*      if len(str1) != len(str2):          return False  *# Create arrays to store character counts*      count1 = [0] \* 256  *# Assuming ASCII characters*      count2 = [0] \* 256  *# Increment count for each character in str1*      for char in str1:          count1[ord(char)] += 1  *# Increment count for each character in str2*      for char in str2:          count2[ord(char)] += 1  *# Compare character counts*      for i in range(256):          if count1[i] != count2[i]:              return False      return True  *# Test the function*  string1 = "listen"  string2 = "silent"  print(are\_anagrams(string1, string2))  *# Output: True* |

**Question No: 10**

Write a program to calculate the area of a triangle?

**Answer:**

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| b= float(input("Enter the width of Triangle : "))  h = float(input("Enter the height of Trinagle : "))  area = 0.5 \* b \* h  print("Area of Triangle : ", area) |

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The End….!