**Git Hub Link:** [**https://github.com/Upender12/Assignment1-Nural\_Network\_Deep\_Learning**](https://github.com/Upender12/Assignment1-Nural_Network_Deep_Learning)

**Spring 2024: CS5720**

**Neural Networks & Deep Learning - ICP-1**

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1. **Write a python program for the following:**

**– Input the string “Python” as a list of characters from console, delete at least 2 characters, reverse the resultant string, and print it.**

**Sample input:**

**•**python

**Sample output:**

•ntyp

**CODE:**

import random

def main():

    # give the input string

    input\_string = input("Enter a string: ")

    # Convert the string to a list of characters

    char\_list = list(input\_string)

    # Delete random characters

    num\_deletions = random.randint(2, min(5, len(char\_list)))  # Delete 2 to 5 characters

    for \_ in range(num\_deletions):

        if len(char\_list) >= 2:

            index\_to\_delete = random.randint(0, len(char\_list) - 1)

            del char\_list[index\_to\_delete]

        else:

            print("String is too short to delete more characters.")

            break

    # Reverse the output string

    reversed\_string = ''.join(reversed(char\_list))

    # Print the reversed string

    print("Reversed string:", reversed\_string)

if \_\_name\_\_ == "\_\_main\_\_":

    main()

**OUTPUT:**

Enter a string: python

Reversed string: ohyp

**NOTE:**

So, here we are giving a string ‘python’, so we need to delete at least two characters, here in the output given below, ‘t’ and ‘p’ has been deleted and therefore after deleting two characters in this case, the reserved string is nohy.

**– Take two numbers from user and perform at least 4 arithmetic operations on them.**

**CODE:**

def main():

    try:

        num1 = float(input("Enter the first number: "))

        num2 = float(input("Enter the second number: "))

        # writing formulas for all the arthimetic operations

        addition = num1 + num2

        subtraction = num1 - num2

        multiplication = num1 \* num2

        # logic to avoid dividing by zero

        if num2 != 0:

            division = num1 / num2

        else:

            division = "Cannot divide by zero"

        print("Addition:", addition)

        print("Subtraction:", subtraction)

        print("Multiplication:", multiplication)

        print("Division:", division)

    except ValueError:

        print("Invalid input. Please enter valid numbers.")

if \_\_name\_\_ == "\_\_main\_\_":

    main()

**OUTPUT:**

Enter the first number: 5

Enter the second number: 6

Addition: 11.0

Subtraction: -1.0

Multiplication: 30.0

Division: 0.8333333333333334

**NOTE:**

Here, for the first number we gave 5 and the second number we gave 10, so according to these values we perform addition as 15 and subtraction, multiplication and division.

1. **Write a program that accepts a sentence and replace each occurrence of ‘python’ with ‘pythons’.**

**•Sample input:**

•I love playing with python

**•Sample output:**  
 •I love playing with pythons

**CODE:**

def main():

    sentence = input("Enter a sentence: ")

    # given condition to replace the word python with pythons

    updated\_sentence = sentence.replace('python', 'pythons')

    # Print the output

    print("updated sentence:", updated\_sentence)

if \_\_name\_\_ == "\_\_main\_\_":

    main()

**OUTPUT:**

Enter a sentence: I love playing with python

updated sentence: I love playing with pythons

**NOTE:**

In this program, we pass a string and we need to replace python with pythons, wherever it appears in the givenm string.

1. **Use the if statement conditions to write a program to print the letter grade based on an input class score. Use the grading scheme we are using in this class.**

**CODE:**

def main():

    try:

        class\_score = float(input("Enter the class score: "))

        # Check whether if the class score is greater than 100

        if class\_score > 100:

            print("Invalid input. Class score cannot exceed 100.")

            return

        # write the if else conditions based on the grading scale

        if class\_score >= 90:

            letter\_grade = 'A'

        elif class\_score >= 80:

            letter\_grade = 'B'

        elif class\_score >= 70:

            letter\_grade = 'C'

        elif class\_score >= 60:

            letter\_grade = 'D'

        else:

            letter\_grade = 'F'

        # Print the grade

        print("Letter grade:", letter\_grade)

    except ValueError:

        print("Invalid input. Please enter a valid number.")

if \_\_name\_\_ == "\_\_main\_\_":

    main()

**OUTPUT:**

Enter the class score: 60

Letter grade: D

**NOTE:**

Here, if the class score is greater than 90 we give A, so using a if and elseif conditions we gave set the grades accordingly.