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***Artificial Intelligence (Lab)***

***Assignment - 4***

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**Department:**

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**Program:**

Artificial Intelligence.

**Section:**

BSAI-3A

**Question # 1:**

Code for LUHN Algorithm

**Explanation:**

This simple program is known as LHUN algorithm. Mainly it used to check if a card number valid or not. It follows the following steps. It removes the last digit. Than it reverses the complete number then it checks if the if number is an odd number it will multiply the number by 2 and then it will check if the numbers are greater than 9 it will deduct 9 from that specific number. After that it will add the removed number add all of the numbers up and check if it is divisible by 10 then it is valid otherwise its invalid.

**Code:**

def LHUN():

    card=input("Enter the Card Number: ")

    total=0

    reverse\_card=card[::-1]

    for i in range (len(reverse\_card)):

        num=int(reverse\_card[i])

        if i%2==1:

            num\*=2

            if num>9:

                num-=9

        total+=num

    if total%10==0:

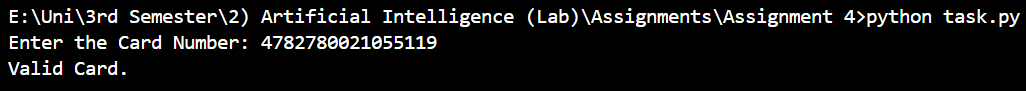
        print("Valid Card.")

    else:

        print("Invalid Card.")

LHUN()

**Output:**



**Question # 2:**

Remove Punctuations from UserInput String (without using remove function).

**Explanation:**

This program simply takes a sentence from the user as input and removes all the punctuation by replacing the punctuation by nothing (‘’).

**Code:**

def puncutations():

    print("This program will be used to remove all the strings from the sentance.")

    input1=input("Enter the sentance: ")

    kick={",",".","?",",","!","(",")","[","]","{","}","\"","\'","`","@","/","\\","`"}

    for i in input1:

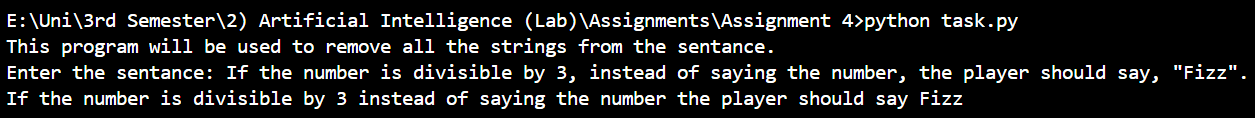
        if i in kick:

            input1=input1.replace(i,"")

    print(input1)

puncutations()

**Output:**



**Question # 3:**

Sort text (word) in Alphabetical Order (without using sort function) can use ASCII.

**Explanation:**

This program is used to sort the words in alphabetic order without using sort function.

**Code:**

def order():

    lines=input("Enter the sentence: ")

    word=lines.split()

    for i in range(len(word)-1):

        for j in range(len(word)-i-1):

            if word[j]>word[j+1]:

                word[j],word[j+1]=word[j+1],word[j]

    sorted\_lines=" ".join(word)

    print(f"Sorted Lines: {sorted\_lines}")

order()

**Output:**

