Q1. create a program of finding total number of upper letters,lower letters ,digits and the symbols using for loop,strings and a if elif and else

```
#1 Program

string = input("Enter a String: ")

upper_count, lower_count, digit_count, symbol_count, whitespaces_count = 0, 0, 0, 0, 0

for char in string:
  if char.isupper():
    upper_count += 1
  elif char.islower():
    lower_count += 1
  elif char.isdigit():
    digit_count += 1
  elif char.isspace():
    whitespaces_count += 1
  else:
    symbol_count += 1

print("Uppercase ", upper_count)
print("Lowercase ", lower_count)
print("Digits ", digit_count)
print("Symbols ", symbol_count)
print("Whitespaces ", whitespaces_count)
```

```
Enter a String: Hello, Saurabh!!! 12345
Uppercase  2
Lowercase  10
Digits  5
Symbols  4
Whitespaces  2
```

Q2. Manav wants to know all the possible dates of February 2024. To help Manav write a prgram that can take month and year as input and can print all the possible dates of that month in given format : dd/mm/yyyy

```
#2 Program

month = int(input("Enter month: "))
year = int(input("Enter year: "))

days_in_month = [31,28,31,30,31,30,31,31,30,31,30,31]

if(year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
  days_in_month[1] = 29

print("Possible dates are: ")
for day in range(1, days_in_month[month - 1] + 1):
  print(f"{day}/{month}/{year}")
```

```
Enter month: 3
Enter year: 2024
Possible dates are:
1/3/2024
2/3/2024
3/3/2024
4/3/2024
5/3/2024
6/3/2024
7/3/2024
8/3/2024
9/3/2024
10/3/2024
11/3/2024
12/3/2024
13/3/2024
14/3/2024
15/3/2024
16/3/2024
17/3/2024
18/3/2024
19/3/2024
20/3/2024
21/3/2024
```

```
22/3/2024
23/3/2024
24/3/2024
25/3/2024
26/3/2024
27/3/2024
28/3/2024
29/3/2024
30/3/2024
31/3/2024
```

Q3. Fibonacci series.

```
#3

num_terms = int(input("Enter the number of terms: "))

a, b = 0, 1

if num_terms <= 0:
    print("Please enter a positive integer.")
elif num_terms == 1:
    print("Fibonacci sequence up to", num_terms, ":")
    print(a)
else:
    print("Fibonacci sequence:")
    count = 0
    while count < num_terms:
        print(a)
        nth = a + b
        # Update values
        a = b
        b = nth
        count += 1
```

```
Enter the number of terms: 15
Fibonacci sequence:
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
```

```
Start coding or generate with AI.
```

Assignment 2 - 20 June 24 - (Thursday)

Q. Its childrens day and the class teacher wanted to share chocolates with the entire class the details are as follows,The number of chocolates with the teacher are = 327 Number of kids in the class are = 78. Write a program to perform modulus division using (%) modulus operator and find out how many chocolates are remaining with the teacher after equally distributing 327 chocolates to 78 students.

```
# Number of chocolates with the teacher
total_chocolates = 327

# Number of kids in the class
number_of_kids = 78

# Calculate the remainder of chocolates after distribution
remaining_chocolates = total_chocolates % number_of_kids

# Print the result
print("The number of chocolates remaining with the teacher after distribution is: ", remaining_chocolates)
```

```
The number of chocolates remaining with the teacher after distribution is:  15
```

Q. It's Domino's 25th Anniversary and is planning for a big give away and in order to choose the lucky draw winner Domino's first needs to collect all of its customer details. On collecting the customer details Domino's even wants to thank each and every customer for visiting as soon as they entered their details.Write a program to accept customer details like customer name, customer mobile number, customer age, customer email Id.On successfully receiving all the customer information write a print() to thank the customer by using his name for example"Hi", customerName,"!! Thanks for visiting our restaurant and registering for our lucky draw competition on our 25th Anniversary.""Once the lucky draw results are announced you will receive a message on your mobile number :",customerMobileNumber"An detailed description of your gift on your email Id :",customerEmailId"Thank you for being a valued customer",customerName,"!!""Dominos"

```
# Collecting customer details
customer_name = input("Enter your name: ")
customer_mobile_number = input("Enter your mobile number: ")
customer_age = input("Enter your age: ")
customer_email_id = input("Enter your email ID: ")

# Printing the thank you message
print("\nHi " + customer_name + "!! Thanks for visiting our restaurant and registering for our lucky draw competition on our 25th Anniversar
print("Once the lucky draw results are announced you will receive a message on your mobile number: " + customer_mobile_number)
print("A detailed description of your gift will be sent to your email ID: " + customer_email_id)
print("Thank you for being a valued customer, " + customer_name + "!!")
print("Domino's")
```

```
Enter your name: Kahar Saurabh Ramesh
Enter your mobile number: 9619281125
Enter your age: 23
Enter your email ID: kaharsaurabh2017@gmail.com

Hi Kahar Saurabh Ramesh!! Thanks for visiting our restaurant and registering for our lucky draw competition on our 25th Anniversary.
Once the lucky draw results are announced you will receive a message on your mobile number: 9619281125
A detailed description of your gift will be sent to your email ID: kaharsaurabh2017@gmail.com
Thank you for being a valued customer, Kahar Saurabh Ramesh!!
Domino's
```

Q. Teacher wants to conduct a quiz activity in her class. For that she is planning to group 4 students for each team among 60 students. She wants to know how many teams she can create among 60 students.Write a program to find the total number of teams that can be created among students by dividing total number of students to the number of students per team.Total number of student = 60 Number of students per team =4

```
# Total number of students
total_students = 60

# Number of students per team
students_per_team = 4

# Calculate the number of teams
number_of_teams = total_students // students_per_team

# Print the result
print("The total number of teams that can be created is:", number_of_teams)
```

```
The total number of teams that can be created is: 15
```

Q. Nidhi loves to travel to different countries. She is now in a country where the temperature is measured in Fahrenheit and she is not able to understand it in a better way. To help her in this situation, write program to convert temperature from Fahrenheit to celsius. ● Hint: (0°C × 9/5) + 32 = 32°F

```
# Collecting the temperature in Fahrenheit from the user
fahrenheit = float(input("Enter the temperature in Fahrenheit: "))

# Converting Fahrenheit to Celsius
celsius = (fahrenheit - 32) * 5 / 9

# Printing the result
print(f"The temperature in Celsius is: {celsius:.2f}°C")
```

```
Enter the temperature in Fahrenheit: 105
The temperature in Celsius is: 40.56°C
```

Double-click (or enter) to edit

Q. A palindrome is a word, number, phrase, or other sequence of characters that reads the same backward as forward, such as madam or racecar. Arunima got a new puppy (pet) and she wants to decide the name for her pet. The name of the pet should be a palindrome. Write a program to take the pet name as input and print "true" if it is palindrome or print "false" on screen. Help Arunima to decide the name (should be palindrome) of the puppy. Hint: reverse the name and compare it with the original name

```
# Taking the pet name as input
pet_name = input("Enter the name for your pet: ")

# Checking if the pet name is a palindrome
if pet_name == pet_name[::-1]:
    print("true")
else:
    print("false")
```

```
Enter the name for your pet: rotator
true
```

Q. Aarush and Yash are two friends in the same grade and they decided to create their secret language to communicate with each other. First of all, they decided to reverse each word. For example: come here = "emoc ereh". But this was very easy to understand for other students. They tried to make it a bit difficult and decided to put all the characters which are at odd indices first then all the characters which are at even indices. For example: come here = "oecm eehr". Write a program in python to create such type of secret language and convert the word Codeyoung into secret language using the same program. Can we convert the secret language back to normal language using python? Discuss

```
# Define the word to be converted
word = input("Enter Word: ")

# Reverse the word
reversed_word = word[::-1]

# Separate characters at odd and even indices
odd_chars = "".join(reversed_word[i] for i in range(len(reversed_word)) if i % 2 != 0)
even_chars = "".join(reversed_word[i] for i in range(len(reversed_word)) if i % 2 == 0)

# Combine odd and even characters
secret_language = odd_chars + even_chars

# Print the secret language
print("Secret Language:", secret_language)
```

```
Enter Word: come here
Secret Language: rheoee mc
```

Q. Vishal is creating a form and he wants to take the contact number as input. However, some people do not enter the number properly. Vishal is confused about how to verify whether the given number is in the correct format or not. To help Vishal write a python program to show how we can verify whether a given phone number is valid or not. ● Note: A valid phone number contains 10 digits with 9,8 or 7 as the first digit. Phone number only contains numbers and not any character. ● Hint: ● User len() function to verify the number of digits. ● Use isnumeric() function to check it only contains numeric values.Use indexing to check whether the first character is 9,8 or 7 or not.

```
def is_valid_phone_number(phone_number):
    # Check if the length of the phone number is 10 and it contains only numeric values
    if len(phone_number) == 10 and phone_number.isnumeric():
        # Check if the first digit is 9, 8, or 7
        if phone_number[0] in ['9', '8', '7']:
            return True
        else:
            return False
    else:
        return False

# Example usage
phone_number = input("Enter the phone number: ")

if is_valid_phone_number(phone_number):
    print("Valid phone number.")
else:
    print("Invalid phone number.")
```

```
Enter the phone number: 8653297418
Valid phone number.
```

Q. The RTO (Regional Transport Office) website holds a registration form which is responsible for registering a user for a Driving License. The RTO wants to take the next step if and only if the user's age is greater than or equal to 18.

Scenario 1 : When Traffic Light is Red

Jake, a 20 year old teenager has learnt to ride a bike and is a bit confused with the traffic signals. He doesn't know what to do when the signal is red.

So In this scenario Jake should just know what Jake should do when the signal is red whether he should leave or stop.

So Write a If-Else condition to guide Jake

```
age = int(input("Enter age: "))


if age >= 18:
    print("You are eligible to drive.")
    signal_color = input("\nEnter the signal color: ")
    if signal_color == "red":
        print("Stop at the signal.")
    else:
        print("You can proceed safely.")
else:
    print("\nYou are not eligible to drive.")
```

```
Enter age: 20
You are eligible to drive.

Enter the signal color: green
You can proceed safely.
```

Q. Mary, a 15 year old girl, was watching her mom making a budget list every month, either her mom use to forget few things or she use to go out of budget due to no proper grocery list that says quantity of items, prices and stuff.

So Mary wants to help her mom in managing the monthly groceries by creating an app that takes grocery item name, item price and quantity of item.

Before all this, the app is suppose to accept the budget amount, if shopping list items price cross over the budget amount then any new items should not be added to the list.

There should be 2 things in the menu of the app one to add an item and the second option to exit from the menu once the add item is chosen, then the item name, item quantity and item price should be accepted and the price should be checked with the budget amount. If the item amount is crossing the budget amount then the item cannot be added to the list.

If the exit option is chosen then the total budget amount and the remaining balance should be displayed

```
# Accept the budget amount from the user
budget = float(input("Enter your budget amount: "))

# Initialize an empty grocery list
grocery_list = []

# Menu-driven loop to add items or exit
while True:
    print("\nMenu:")
    print("1. Add Item")
    print("2. Exit")

    choice = input("Enter your choice (1/2): ")

    if choice == "1":
        # Accept item details
        item_name = input("Enter the item name: ")
        item_quantity = int(input("Enter the quantity of the item: "))
        item_price = float(input("Enter the price of the item: "))

        # Calculate total item cost
        total_item_cost = item_quantity * item_price

        # Check if item cost is within budget
        if total_item_cost <= budget:
            grocery_list.append((item_name, item_quantity, item_price))
            print(f"{item_name} added to the list.")
        else:
            print("Sorry, the item cannot be added to the list as it exceeds the budget.")
    elif choice == "2":
        break
    else:
        print("Invalid choice. Please enter 1 or 2.")

# Display the final grocery list
print("\nGrocery List:")
for index, item in enumerate(grocery_list, start=1):
    item_name, item_quantity, item_price = item
    print(f"{index}. {item_name} - Quantity: {item_quantity}, Price: ₹{item_price}")

# Calculate total spent and remaining budget
total_spent = sum(item[1] * item[2] for item in grocery_list)
remaining_budget = budget - total_spent

# Display total budget, total spent, and remaining budget
print(f"\nTotal Budget Amount: ₹{budget}")
print(f"Total Spent: ₹{total_spent}")
print(f"Remaining Budget: ₹{remaining_budget}")
```

```
Enter your budget amount: 500

Menu:
1. Add Item
2. Exit
Enter your choice (1/2): 1
Enter the item name: Maggie
Enter the quantity of the item: 2
Enter the price of the item: 80
Maggie added to the list.

Menu:
1. Add Item
2. Exit
Enter your choice (1/2): 1
Enter the item name: Noodle
Enter the quantity of the item: 3
Enter the price of the item: 85
Noodle added to the list.

Menu:
1. Add Item
2. Exit
Enter your choice (1/2): 1
Enter the item name: Chocolate
Enter the quantity of the item: 1
Enter the price of the item: 50
Chocolate added to the list.

Menu:
```

```
1. Add Item
2. Exit
Enter your choice (1/2): 2

Grocery List:
1. Maggie - Quantity: 2, Price: ₹80.0
2. Noodle - Quantity: 3, Price: ₹85.0
3. Chocolate - Quantity: 1, Price: ₹50.0

Total Budget Amount: ₹500.0
Total Spent: ₹465.0
Remaining Budget: ₹35.0
```

Q. Sameer, a resident of India met John, a resident of california on facebook and they became friends, just in a conversation they planned to know each other's height and there was a problem, John would understand only if told in centimeter(cm) format. So write a program to help John to understand Sameer's height in python to convert Feet & Inches To CM

```
def feet_and_inches_to_cm(feet, inches):
    total_inches = (feet * 12) + inches
    cm = total_inches * 2.54
    return cm

# Input Sameer's height in feet and inches
height_str = input("Enter Sameer's height (e.g., 5 feet 6 inches): ")

# Split the input into feet and inches parts
height_parts = height_str.split()
feet = int(height_parts[0])
inches = int(height_parts[2])

# Convert to centimeters
height_cm = feet_and_inches_to_cm(feet, inches)

# Display the result
print(f"Sameer's height is {height_cm:.2f} centimeters.")
```

```
Enter Sameer's height (e.g., 5 feet 6 inches): 6 feet 7 inches
Sameer's height is 200.66 centimeters.
```

Class test 24 June 2024 (Monday)

Q. Saisha created a python program where she takes the input from the user and saves it as a text file. But the text file which she saves has a limit of very few characters. So she wants to save the sentences after removing the spaces between the words and make the first character of each word capital. To help Saisha in this program create a python program that can take input from the user, remove the spaces between the word, make the first character of each word capital, and print it on the screen

```
#taking input

user_input = input("Enter your text: ")

words = user_input.split()

result_text = ''.join(word.capitalize() for word in user_input.split())

print(result_text)
```

```
Enter your text: saurabh kahar
SaurabhKahar
Enter the file name to save the processed text (eg. output.txt): output.txt
```

Q. Nidhi challenged her friends to check whether a given number is palindrome or not without using string manipulation. All her friends were not able to solve this problem. Write a program in python for the same. ● Hint: Use a while loop and a temporary variable.

```
number = int(input("Enter a number to check for palindrome: "))

original_number = number
reversed_number = 0

while number > 0:
  digit = number % 10
  reversed_number = reversed_number * 10 + digit
  number = number //10

if original_number == reversed_number:
  print(original_number, "is a palindrome.")
else:
  print(original_number, "is not a palindrome.")
```

```
Enter a number to check for palindrome: 123321
123321 is a palindrome.
```

Q. Shubh is curious to know that how many times the second hand of the clock rotates in one day. He wants to find the answer with programming. Write a python program using nested loops to check how many times the second hand of the clock rotates when the hour hand completes one round. (Use loops only to find out the answer)

```
count = 0

for hour in range(24): #it will loop 24 times
  for minute in range(60): #it will loop for 60 times
    for seconds in range(60): #it will loop for 60 times
      count = count +1 #it will add 1 each time when the above 60 times finishes and after that the second 60 will, one time again the above
                       # and like this the loop will run until the first loop which range is 24 will satisfy.
print("The second hand rotates", count, " times in one day.")
```

```
The second hand rotates 86400  times in one day.
```

```
Start coding or generate with AI.
```

25 June - Tuesday

Q. In a classroom, there are desks arranged in a row and column fashion. The math teacher, Mr. James, asked one of the kid whose name was Robert to count the total number of desks present in the class. Robert was just wondering if there is software that could take the number of rows and number of columns and show how many desks there are that would make his job easier. So write a python program to help Robert to count the number of desks present in the class.Person Arrival Detector For James

```
#user inputs
rows = int(input("Enter the number of rows: "))
columns = int(input("Enter the number of columns: "))

total_desks = rows * columns

print("The total number of desks is: ", total_desks)
```

```
Enter the number of rows: 5
Enter the number of columns: 4
The total number of desks is:  20
```

Q. Mr James, A businessman in canada was throwing a small party in a banquet hall and wanted to track the number of people attended the party so he kept a people tracker device in the entrance where every person enters is supposed to enter his or her authorization code to enter the hall, certain codes were assigned they are as follows : If Banquet Hall Team Members like Manager, waiter, and Mr. James himself then their authorization code will be : 0 If Guests Their Authorization Code Will be : 1 If the Authorization Code Entered is 1 then increment the number_of_guests Variable by 1, Wish the Guest like "Door Opened" "Welcome to the Party, We Hope you have fun." else If the Authorization Code Entered is 0 then print as follows "Access Granted" "Door Opened" else tell the person that his entered number is invalid

```
number_of_guests = 0

while True:
  auth_code = input("Enter your code: ")

  if auth_code.lower() == 'exit':
    break

  code =  int(auth_code)

  if code == 1:
    number_of_guests +=1
    print("Door Opened. \nWelcome to the Party, We Hope you have fun.")
  elif code == 0:
    print("Access Granted. \nDoor Opened.")
  else:
    print("Invalid authorization code.")

print("Total number of guests attended: ", number_of_guests )
```

```
Enter your code: 1
Door Opened.
Welcome to the Party, We Hope you have fun.
Enter your code: 1
Door Opened.
Welcome to the Party, We Hope you have fun.
Enter your code: 0
Access Granted.
Door Opened.
Enter your code: exit
Total number of guests attended:  2
```

Q. Mathew, a 13 year old kid, is good at math but whenever it comes to the even and odd numbers he always faces difficulty to find the even or odd number greater than 10. So write a python program to help Mathew to print odd and even numbers in a certain range using a for loop. An online essay writing competition was held in a school. The students were required to write at least 250 words. According to the rule, only that essay should be checked which contains at least 250 words. Teachers were just guessing the number of words in the essay but that was not an accurate way to count the number of words. So write a program that can count the number of words in an essay (Hint: Take input and count the number of words using for loop | Note: to count the number of words you can just count the number of blank spaces given in the input.)

```
print("Enter the range staring to end.\n")
start = int(input("Enter starting number : "))
end = int(input("Enter the last digit: "))

print("Even numbers: ")

for i in range(start, end+1):
  if i % 2 == 0: # it will check if the number is even
    print(i, end = ' ')

print("\nOdd numbers: ")

for i in range(start, end + 1):
  if i % 2 != 0: #it will check if the number is odd
    print(i, end = ' ')
```

```
Enter the range staring to end.

Enter starting number : 11
Enter the last digit: 40
Even numbers:
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40
Odd numbers:
11 13 15 17 19 21 23 25 27 29 31 33 35 37 39
```

```
def count_words(essay):
  word_count = 0
  words =essay.split(' ')
  for word in words:
    if word:
      word_count += 1
  return word_count

essay = input("Enter the essay: ")
word_count = count_words(essay)
if word_count >= 250:
  print("The essay has ", word_count, "words and satisfy the requirements.")
else:
  print("The essay has ", word_count, " words and does not satisfy the requirements. ")
```

```
Enter the essay: Hello everyone this is saurabh kahar.
The essay has  6  words and does not satisfy the requirements.
```

```
#prime or not prime

def is_prime(number):
  if number <= 1:
    return False
  for i in range(2, number):
    if number % i == 0:
      return False
  return True


number = int(input("Enter a number ti check if it's prime or not: "))

if is_prime(number):
  print(number, "is a prime number.")
else:
  print(number, "is not a prime.")
```

```
Enter a number ti check if it's prime or not: 5
5 is a prime number.
```

```
Start coding or generate with AI.
```

02 July - Tuesday

Q. Create a Atm program using while loop major one

```
#ATM Program

balance = 10000         #Initial amount stored
pin = "12345"        #Password

while True:
  print("Choose Options:")
  print("1. Check Balance")
  print("2. Deposit")
  print("3. Withdraw")
  print("4. Exit")

  choice = input("Enter your choice: ")       #User input for what he/she wants to execute

  if choice == "1":                           #for checking balance
    user_pin = input("Enter your pin: ")
    if user_pin == pin:
      print("Your balance is: ", balance)
    else:
      print("Incorrect pin. Please try again.")

  elif choice == "2":                         #for depositing
    user_pin = input("Enter your pin: ")
    if user_pin == pin:
      amount = int(input("Enter the amount to deposit: "))
      balance = balance + amount
      print("Deposit successful. \nNew balance: ", balance)
    else:
      print("Incorrect pin. Please try again.")

  elif choice == "3":                         #for withdrawing
    user_pin = input("Enter your pin: ")
    if user_pin == pin:
      amount = int(input("Enter the amount to withdraw: "))
      if amount <= balance:
        balance = balance - amount
        print("Withdrawal successful. \nNew balance: ", balance)
      else:
        print("Invalid amount or Insufficient amount.")
    else:
      print("Incorrect pin. Please try again.")

  elif choice == "4":                         #for exiting
    print("Thank you for visiting ATM.")
    break

  else:
    print("Invalid choice. Please try again.")    # if user selected wrong choice
```

```
Choose Options:
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 1
Enter your pin: 12345
Your balance is:  10000
Choose Options:
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 3
Enter your pin: 12345
Enter the amount to withdraw: 5000
Withdrawal successful.
New balance:  5000
Choose Options:
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 1
Enter your pin: 6000
Incorrect pin. Please try again.
Choose Options:
1. Check Balance
2. Deposit
3. Withdraw
```

```
4. Exit
Enter your choice: 2
Enter your pin: 12345
Enter the amount to deposit: 6000
Deposit successful.
New balance:  11000
Choose Options:
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 1
Enter your pin: 12345
Your balance is:  11000
Choose Options:
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Enter your choice: 4
Thank you for visiting ATM.
```

Q. Create a chatbot major one

```
print("Hello, Welcome.")
print("How may i help you. :)")

while True:
  user = input("You: ").lower()

  if user == "hi" or user == "hello" or user == "hey" or user == "hii":
    print("Bot: Hii There!!!, What's your problem ?")

  elif user == "whats your name" or user == "what is your name":
    print("Bot: My name is Saurabh :).")

  elif user == "bye":
    print("Bot: Bye, Have a wonderfull day.")
    break

  else:
    print("Bot: I'm sorry, I don't understand your problems. Try again later.")
```

```
Hello, Welcome.
How may i help you. :)
You: hii
Bot: Hii There!!!, What's your problem ?
You: what is your name
Bot: My name is Saurabh :).
You: bye
Bot: Bye, Have a wonderfull day.
```

```
Start coding or generate with AI.
```

05 July - Friday

Q. A Candy Vending Machine is topped up and is supposed to deliver the number of candies entered by the user but before delivering the candies the vending machine is supposed to ask the user to enter the amount for the candies where each candy is worth 1 dollar. So write a python program that can be loaded into the vending machine so that the vending machine can act accordingly. HINT: --create a variable named total_candies_to_load and take the input from the user on how many candies to be loaded on to the vending machine --print the vending machine title as " 🍖 🍖Candy Vending Machine 🍖 🍖" and print total number of candies loaded into the vending machine along with it. --create a variable named numberOfCandiesUserWants to store the number of candies required by the user --accept the number of candies the customer wants as an input into the variable numberOfCandiesUserWants that we created in the previous step and if the number of candies required by the customer is less than zero or greater than total number of candies in the machine, print “You have entered number of candies which is either zero or less than zero and is not possible to disperse please try again or visit once again Thanks for shopping with us!!! we will be happy to serve you once again” --Using the concept of nested loops, print the amount the customer has to pay given cost of 1 candy = 1$. --Confirm the money paid by the customer as input to UserMoney variable. --If the UserMoney is equal to cost of candies, print delivering as many times as the number of candies ordered by the customer otherwise print “Enter wrong amount. Try again !” --print the number of candies left in the vending machine and a thank you message.

```
#Q1
total_candies_to_load = int(input("Enter the total number of candies to load: "))

print("Candy Vending Machine")
print("Total number of candies loaded: ", total_candies_to_load)

while True:
  numberOfCandiesUserWants = int(input("Enter the number of candies you want: "))

  if numberOfCandiesUserWants <= 0 or numberOfCandiesUserWants > total_candies_to_load:
    print("You have entered number of candies which is either zero or less than zero or in range of the candies and is not possible to dispe
    continue

  total_cost = numberOfCandiesUserWants
  print("The amount to pay is: $", total_cost)

  userMoney = int(input("Enter the amount you have: "))

  if userMoney == total_cost:
    for i in range(numberOfCandiesUserWants):
      print("Delivering candy", i+1)

    total_candies_to_load = total_candies_to_load - numberOfCandiesUserWants
    print("Number of candies left in the vending machine: ", total_candies_to_load)
    print("Thank you for shopping")
    break
  else:
    print("Entered wrong amount. Try again.")
```

```
Enter the total number of candies to load: 10
Candy Vending Machine
Total number of candies loaded:  10
Enter the number of candies you want: 8
The amount to pay is: $ 8
Enter the amount you have: 9
Entered wrong amount. Try again.
Enter the number of candies you want: 7
The amount to pay is: $ 7
Enter the amount you have: 7
Delivering candy 1
Delivering candy 2
Delivering candy 3
Delivering candy 4
Delivering candy 5
Delivering candy 6
Delivering candy 7
Number of candies left in the vending machine:  3
Thank you for shopping
```

Q. Mathew, a 13 year old kid, is good at math but whenever it comes to the even and odd numbers he always faces difficulty to find the even or odd number greater than 10. So write a python program to help Mathew to print odd and even numbers in a certain range using a for loop.

```
#Q2
def even_odd_numbers(start, end):
  print("Even numbers in the range: ")
  for number in range (start, end):
    if number % 2 == 0:
      print(number, end= " ")
  print("\nodd numbers in the range: ")
  for number in range(start, end + 1):
    if number % 2 != 0:
      print(number, end= " ")

start = int(input("Enter the start of the range: "))
end = int(input("Enter the end of the range: "))


even_odd_numbers(start,end)
```

```
Enter the start of the range: 15
Enter the end of the range: 30
Even numbers in the range:
16 18 20 22 24 26 28
odd numbers in the range:
15 17 19 21 23 25 27 29
```

Q. create a program to the find total number of upper letters,lower letters,digits and the symbols using if elif else, for loop and string operations

```
#Q3
string = input("Enter a string: ")

upper_count = 0
lower_count = 0
digit_count = 0
symbol_count = 0

for char in string:
  if char.isupper():
    upper_count += 1
  elif char.islower():
    lower_count += 1
  elif char.isdigit():
    digit_count += 1
  else:
    symbol_count += 1

print("Uppercase letters: ", upper_count)
print("Lowercase letters: ", lower_count)
print("Digits: ", digit_count)
print("Symbols: ", symbol_count)
```

```
Enter a string: SaurabhKahar3107$@
Uppercase letters:  2
Lowercase letters:  10
Digits:  4
Symbols:  2
```

Q. Mrs. Olivia, a entrepreneur, is running a mini business and wanted to create a very simple form which takes only the user's name and the user's password so that all her customers can have access to her business dashboard. Mrs. Olivia wants her customers to just enter the password with only alphabets and no numbers allowed for some reason.Mrs. Olivia just knows how to create a form but she doesn't know how to give the validation. So to help Mrs. Olivia, write a python program to validate Mrs.Olivia's form where password should only consist of alphabets. Hint:Use isalpha() function.

```
#Q4
name = input("Enter your name: ")

password = input("Enter your password: ")

if password.isalpha():
  print("Password is valid.")
else:
  print("Password is invalid. it should should contain only alphabet.")
```

```
Enter your name: Saurabh
Enter your password: 3311
Password is invalid. it should should contain only alphabet.
```

Q. Christiana is a kid who is born on leap year, but she doesn't know which year would be a leap year for her so that she can celebrate her birthday hence write a python program to help Chirstiana in finding out if the given year is a leap year or not.

```
#Q5
year = int(input("Enter a year: "))

if(year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
  print(year, " is a leap year.")
else:
  print(year, " is not a leap year.")
```

```
Enter a year: 2023
2023  is not a leap year.
```

```
Start coding or generate with AI.
```

08 July - Monday

Q1. Dictionary

```
#dictionary

dict = {
    "name": "Saurabh",
    "age" : 23,
    "city": "Mumbai"
}

#Accessing Values
print(dict)
print(dict["name"])
```

```
{'name': 'Saurabh', 'age': 23, 'city': 'Mumbai'}
Saurabh
```

```
print(dict.keys())

print(dict.values())

print(dict.items())
```

```
dict_keys(['name', 'age', 'city'])
dict_values(['Saurabh', 23, 'Mumbai'])
dict_items([('name', 'Saurabh'), ('age', 23), ('city', 'Mumbai')])
```

```
#Adding Values
dict["gender"] = "Male"

#Updating Values
dict["age"] = 24

print(dict)
```

```
{'name': 'Saurabh', 'age': 24, 'city': 'Mumbai', 'gender': 'Male'}
```

```
dict2 = {
    "hobby" : "Photography",
    "Sport" : "Cricket"
}

#creating one more dictionary, now merging
dict.update(dict2)

print(dict)
```

```
{'name': 'Saurabh', 'age': 24, 'city': 'Mumbai', 'gender': 'Male', 'hobby': 'Photography', 'Sport': 'Cricket'}
```

```
dict3 = {
    "per1" : {
      "name" : "Saurabh",
      "age" : 23,
      "city" : "Mumbai"
      },
    "per2" : {
      "name" : "Santanu",
      "age" : 22,
      "city" : "Banaras"
      }
}

print(dict3["per1"])
print(dict3["per2"])

print("\nAccessing values by using keys")
print(dict3["per1"]["name"])
print(dict3["per2"]["name"])
```

```
{'name': 'Saurabh', 'age': 23, 'city': 'Mumbai'}
{'name': 'Santanu', 'age': 22, 'city': 'Banaras'}

Accessing values by using keys
```

```
Saurabh
Santanu
```

```
#accessing values by loop
for key in dict:
  print(key, dict[key])
```

```
name Saurabh
age 24
city Mumbai
gender Male
hobby Photography
Sport Cricket
```

```
del dict["city"]
print(dict)
```

```
{'name': 'Saurabh', 'age': 24, 'gender': 'Male', 'hobby': 'Photography', 'Sport': 'Cricket'}
```

```
age = dict.pop("age")
print(dict)
```

```
{'name': 'Saurabh', 'gender': 'Male', 'hobby': 'Photography', 'Sport': 'Cricket'}
```

```
dict.clear()
print(dict) # its removes all the elements
```

```
{}
```

Q2. Sets

```
#Sets

cars = {"Lambo", "BMW", "RangeRover"}

print(cars)
```

```
{'RangeRover', 'Lambo', 'BMW'}
```

```
#Adding
cars.add("Audi")
print(cars)
```

```
{'RangeRover', 'Lambo', 'BMW', 'Audi'}
```

```
#clear - it removes all the elements
cars.clear()
print(cars)
```

```
set()
```

```
#copying the sets
copy = cars.copy()
print(copy)
```

```
{'RangeRover', 'Lambo', 'BMW'}
```

```
#pop - it removes an element
copy = cars.pop()
print(copy)
print(cars)
```

```
RangeRover
{'Lambo', 'BMW'}
```

```
#removes element from the set
cars.remove("BMW")
print(cars)
```

```
{'Lambo'}
```

```
cars1 = {"BMW", "RangeRover", "Audi", "RR", "Lambo"}
cars2 = {"Lambo", "BMW", "RangeRover"}

print(cars1.union(cars2)) #it will returns the union of two sets
print(cars1.intersection(cars2)) #it will return intersection of two sets
```

```
{'RangeRover', 'RR', 'Lambo', 'BMW', 'Audi'}
{'RangeRover', 'Lambo', 'BMW'}
```

```
print(cars2.issubset(cars1))
```

```
True
```

```
print(cars1.issubset(cars2))
```

```
False
```

```
print(cars1.issuperset(cars2))
```

```
True
```

```
#it will returns the diff of two sets
print(cars1.difference(cars2))
```

```
{'Audi', 'RR'}
```

09 july 2024 - Tuesday

Q. Create a quiz program using functions, 10 questions with total question and wrong.

```
def question_ask(question, correct_answers):
  user_answer = input(question + "\n")
  if user_answer == correct_answers:
    return True
  else:
    return False

def quiz():
  questions = [
      ("Q1. Who won the 2024 T20I World Cup ? ", "India"),
      ("Q2. What is the capital of India ? ", "New Delhi"),
      ("Q3. Which is the largest country in the world ? ", "Russia"),
      ("Q4. How many continent's are there in the world ? ", "7"),
      ("Q5. Who is the Prime Minister of India", "Narendra Modi"),
      ("Q6. What is the capital of Maharashtra ? ", "Mumbai"),
      ("Q7. What is the largest ocean in the world ? ", "Pacific Ocean"),
      ("Q8. Who created python programming language ?", "Guido van Rossum"),
      ("Q9. What is 2 + 2 ? ", "4"),
      ("Q10. Captain of Indian cricket team for Zimbabwe tour", "Shubhman Gill")
  ]

  total_questions = len(questions)
  wrong_answers = 0

  for questions, correct_answers in questions:
    if not question_ask(questions, correct_answers):
      wrong_answers += 1

  print("You answered", total_questions, "questions.")
  print("You got", total_questions - wrong_answers, "correct answers.")
  print("You got", wrong_answers, "wrong answers.")

quiz()
```

```
Q1. Who won the 2024 T20I World Cup ?
India
Q2. What is the capital of India ?
New Delhi
Q3. Which is the largest country in the world ?
Russia
Q4. How many continent's are there in the world ?
```

```
7
Q5. Who is the Prime Minister of India
Narendra Modi
Q6. What is the capital of Maharashtra ?
Mumbai
Q7. What is the largest ocean in the world ?
NA
Q8. Who created python programming language ?
guido van Rossum
Q9. What is 2 + 2 ?
4
Q10. Captain of Indian cricket team for Zimbabwe tour
Gill
You answered  10  questions.
You got  7  correct answers.
You got  3  wrong answers.
```

Q. Create Even Odd program using function.

```
#even odd
def check_even_or_odd(number):
    if number % 2 == 0:
        return "Even"
    else:
        return "Odd"

def main():
    # Ask the user to input a number
    number = int(input("Enter a number: "))

    # Call the function and get the result
    result = check_even_or_odd(number)

    # Print the result
    print(f"The number {number} is {result}.")

# Start the program
main()
```

```
Enter a number: 23
The number 23 is Odd.
```

Q. Create a calculator using function.

```
def add(x, y):
    return x + y

def subtract(x, y):
    return x - y

def multiply(x, y):
    return x * y

def divide(x, y):
    if y != 0:
        return x / y
    else:
        return "Cannot devide by zero."

def calculator():
    print("Calculator")
    print("1. Add")
    print("2. Subtract")
    print("3. Multiply")
    print("4. Divide")

    while True:
        choice = input("Enter choice (1/2/3/4): ")

        if choice in ['1', '2', '3', '4']:
            num1 = float(input("Enter first number: "))
            num2 = float(input("Enter second number: "))

            if choice == '1':
                print("The result is:", add(num1, num2)")
            elif choice == '2':
```

```
                print("The result is:", subtract(num1, num2)}")
            elif choice == '3':
                print("The result is: {multiply(num1, num2)}")
            elif choice == '4':
                print("The result is: {divide(num1, num2)}")
            break
        else:
            print("Invalid input. Please enter a valid choice.")

# Start the calculator
calculator()
```

```
Simple Calculator
1. Add
2. Subtract
3. Multiply
4. Divide
Enter choice (1/2/3/4): 1
Enter first number: 2
Enter second number: 3
The result of adding 2 and 3 is: 5
```

10 July - Wednesday

Q. write a python program of finding prime numbers

```
#prime numbers
def isPrime(number):
  if number <= 1:
    return False
  for i in range (2, int(number ** 0.5) + 1):
    if number % i == 0:
      return False
  return True

def findPrimrNumbers(start, end):
  primeNumbers = [] #here we will store the prime numbers
  for num in range(start, end + 1):
    if isPrime(num):
      primeNumbers.append(num)
  return primeNumbers

start = int(input("Enter the starting of the range: "))
end = int(input("enter the end of the range: "))

primeNumbers = findPrimrNumbers(start, end)
print("Prime numbers between", start, "and", end, "are:", primeNumbers)
```

```
Enter the starting of the range: 10
enter the end of the range: 50
Prime numbers between 10 and 50 are: [11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47]
```

Q. Create a chatbot major one.

```
#chatbot

def info():
  print("Welcome!!!, Type hii to start and type bye to exit the chat.")


def userResponse(userInput):
  if userInput == "hii" or userInput == "hello" or userInput == "hey":
    return "Hello!!!, how are you and how can i help you?"
  elif userInput == "what is your name?":
    return "My name is Shahenshah, haavein."
```