Capsule 2

# Q1: Leap Year Check

def is\_leap\_year(year):  
 if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):  
 return True  
 else:  
 return False  
  
year = int(input("Enter a year: "))  
if is\_leap\_year(year):  
 print(f"{year} is a leap year.")  
else:  
 print(f"{year} is not a leap year.")

# Q2: Vowel Count

def count\_vowels(word):  
 vowels = "aeiouAEIOU"  
 count = 0  
 for char in word:  
 if char in vowels:  
 count += 1  
 return count  
  
word = input("Enter a word: ")  
vowel\_count = count\_vowels(word)  
print(f"The number of vowels in the word '{word}' is {vowel\_count}.")

# Q3: Names Starting with 'A'

def names\_starting\_with\_a(names):  
 a\_names = [name for name in names if name.lower().startswith('a')]  
 return a\_names  
  
names = []  
for \_ in range(6):  
 name = input("Enter a name: ")  
 names.append(name)  
  
a\_names = names\_starting\_with\_a(names)  
print("Names starting with 'a':")  
for name in a\_names:  
 print(name)

# Q4: Even/Odd Processing

def process\_numbers(numbers):  
 for number in numbers:  
 if number % 2 == 0:  
 print(f"{number} squared is {number \*\* 2}")  
 else:  
 print(f"{number} cubed is {number \*\* 3}")  
  
numbers = []  
for \_ in range(10):  
 number = int(input("Enter an integer: "))  
 numbers.append(number)  
  
process\_numbers(numbers)

# Q5: Flower Order Calculation

def calculate\_total\_price(rose\_count, delivery\_distance):  
 cost\_per\_rose = 10  
 total\_cost\_of\_roses = rose\_count \* cost\_per\_rose  
  
 if delivery\_distance <= 5:  
 delivery\_charge = 25  
 elif delivery\_distance <= 10:  
 delivery\_charge = 50  
 else:  
 delivery\_charge = 75  
  
 total\_price = total\_cost\_of\_roses + delivery\_charge  
 return total\_price  
  
rose\_count = int(input("Enter the count of roses: "))  
delivery\_distance = float(input("Enter the delivery distance in kilometers: "))  
total\_price = calculate\_total\_price(rose\_count, delivery\_distance)  
  
print(f"The total price to pay is Rs. {total\_price}.")