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#LAB 6 Question 1-a
year = int(input('Please enter your birth year: '))

while year <= 2021:
    if year == 2021:
        print(year)
    else:
        print(year, end=" ")
        year = year + 1

print() #for good looks only not important to answers

#LAB 6 Question 1-b
age = 0
birth_year = 1998
current_year = 2021

print('I was born in ' + str(birth_year) + ' and currently it is ' + str(current_year) + '.')

while birth_year + 1 <= current_year:
    age = age + 1
    birth_year = birth_year + 1

print('Therefore, my age is ' + str(age) + '.')

print() #for good looks only not important to answers

#LAB 6 Question 2
rows = 7
for i in range(0, rows):
    for j in range(0, i + 1):
        print("*", end=' ')
    print("\n") # Alternatively '\n' can be used here.

for i in range(rows, 0, -1):
    for j in range(0, i - 1):
        print("*", end=' ')
    print("\n") # Alternatively '\n' can be used here.

print() #for good looks only not important to answers

#LAB 6 Question 3-a
prime_counter = 0

while True:
    number = int(input('Enter a number: '))
    flag = True
    if number < 0:
        # break while loop
        break
    elif number == 0 or number == 1:
        flag = False # not prime
    elif number == 2:
        flag = True # prime
    else:
        for i in range(2, number):
            if (number % i) == 0:
                flag = False # not prime
                break
    if flag:
        prime_counter = prime_counter + 1

print()

print('Count of the prime numbers: ' + str(prime_counter))

# Alternative solution with for-else
#while True:
#    number = int(input('Enter a number:'))
#    if number > 0:
#        if number > 1:
#            # check for factors
#            for i in range(2, number):
#                if (number % i) == 0:
#                    # The number is not prime just break for loop here.
#                    break
#            else:
#                # The number is prime, therefore, increase primeCounter by 1.
#                prime_counter = prime_counter + 1
#        else:
#            # The number is not prime just continue to check other numbers from the user.
#            continue
#    else:
#        break
#print()

#print('Count of the prime numbers: ' + str(prime_counter))

print() #for good looks only not important to answers

#LAB 6 Question 3-b
sum_of_numbers = 0

for i in range(1, 11):
    number = int(input('Enter an integer: '))
    if number > 0:
        sum_of_numbers = sum_of_numbers + number
    else:
        continue

print()

print('Sum of the positive integers: ' + str(sum_of_numbers))

print() #for good looks only not important to answers

#LAB 6 TO-DO @ Home
# Part a

number = 2
ending_number = 50
sum_of_numbers = 0

while number <= ending_number:
    sum_of_numbers = sum_of_numbers + number
    number = number + 3

print('Sum of the numbers: ' + str(sum_of_numbers))

print() #for good looks only not important to answers

# Part b

number = 2
ending_number = 50
sum_of_numbers = 0

# Check the following reference to see the alternative usages of range function:
# https://docs.python.org/3/library/stdtypes.html#range

for i in range(number, ending_number+1, 3):
    sum_of_numbers = sum_of_numbers + i

print('Sum of the numbers: ' + str(sum_of_numbers))

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