

In [3]:

```
# Printing your name.  
  
print("Hello "+"Sachin!")
```

Hello Sachin!

In [2]:

```
# Printing your name.  
  
print('Hello, ' + input("What is your name?\n") + "!" )
```

What is your name?
Sachin
Hello, Sachin!

In [7]:

```
# Whether an alphabet is a vowel or consonant.  
  
l = (input("Enter an alphabet = ")).lower()  
if(l == 'a' or l == 'e' or l == 'i' or l == 'o' or l == 'u'):  
    print("The alphabet is a vowel.")  
else:  
    print("The alphabet is a consonant.")
```

Enter an alphabet = A
The alphabet is a vowel.

In [7]:

```
# Finding the greatest number out of three numbers.  
  
a = float(input("Enter a number, a = "))  
b = float(input("Enter a number, b = "))  
c = float(input("Enter a number, c = "))  
if (a>b>c or a>c>b):  
    print("a is the greatest number.")  
elif (b>c>a or b>a>c):  
    print("b is the greatest number.")  
elif (c>a>b or c>b>a):  
    print("c is the greatest number.")  
else:  
    print("Please enter a valid number.")
```

Enter a number, a = 42.5
Enter a number, b = 87.5
Enter a number, c = 98.7
c is the greatest number.

In [7]:

```
# Conversion of celsius to fahrenheit (F = 1.8*(C)+32).

c=float(input("Enter the temperature in degree celsius = "))
f=1.8*(c)+32
print(f, "degree fahrenheit")
if f<=50:
    print("It is cold.")
elif 50<f<100:
    print("It is moderate.")
else:
    print("It is hot.")
```

Enter the temperature in degree celsius = 30
86.0 degree fahrenheit
It is moderate.

In [11]:

```
# Finding the number of days in a given month.

m = input("Enter the name of the month = ")
if (m == "January" or m=="March" or m=="May" or m=="July" or m=="August" or m=="October")
    print("The month has 31 days.")
elif (m == "April" or m=="June" or m=="September" or m=="November"):
    print("The month has 30 days.")
else:
    print("The month has 28 or 29 days.")
```

Enter the name of the month = March
The month has 31 days.

In [10]:

```
# Finding a leap year.

y = int(input("Enter the year = "))
if (y%4 == 0 and y%100 != 0) or (y%400 == 0):
    print("It is a leap year.")
else:
    print("It is not a leap year.")
```

Enter the year = 1700
It is not a leap year.

In [12]:

```
# A number is prime or not.

def prime_checker(number):
    is_prime = True
    for i in range(2,number):
        if number%i == 0:
            is_prime = False
    if is_prime:
        print("It's a prime number.")
    else:
        print("It's not a prime number.")

number = int(input("Enter a number: "))
prime_checker(number)
```

Enter a number: 67
It's a prime number.

In [8]:

```
# Multiplication Table.

num = int(input("Multiplication table for : "))
for i in range(1,11):
    print(f"{num} X {i} = {num*i}")
```

Multiplication table for : 79
79 X 1 = 79
79 X 2 = 158
79 X 3 = 237
79 X 4 = 316
79 X 5 = 395
79 X 6 = 474
79 X 7 = 553
79 X 8 = 632
79 X 9 = 711
79 X 10 = 790

In [1]:

```
# Love Calculator.

print("Welcome to the Love Calculator!")
name1 = input("What is your name? \n")
name2 = input("What is their name? \n")
n1 = name1.lower()
n2 = name2.lower()
combined_name = n1+n2
t = combined_name.count("t")
r = combined_name.count("r")
u = combined_name.count("u")
e = combined_name.count("e")
per1 = str(t+r+u+e)
l = combined_name.count("l")
o = combined_name.count("o")
v = combined_name.count("v")
e = combined_name.count("e")
per2 = str(l+o+v+e)
fp = int(per1+per2)
if fp <= 10 or fp >=90:
    print(f"Your score is {fp}, you go together like coke and mentos.")
elif 40 <= fp <= 50:
    print(f"Your score is {fp}, you are alright together.")
else:
    print(f"Your score is {fp}.")
```

Welcome to the Love Calculator!

What is your name?

Sachin

What is their name?

Shriya

Your score is 10, you go together like coke and mentos.

In [2]:

```
# Pizza delivery order.

print("Welcome to Python Pizza Deliveries!")
size = input("What size pizza do you want? S, M, or L \n")
add_pepperoni = input("Do you want pepperoni? Y or N \n")
extra_cheese = input("Do you want extra cheese? Y or N \n")
bill = 0
if size == "S":
    bill = 15
elif size == "M":
    bill = 20
elif size == "L":
    bill = 25

if add_pepperoni == "Y":
    if size == "S":
        bill += 2
    else:
        bill += 3

if extra_cheese == "Y":
    bill += 1
else:
    bill += 0

print(f"Your final bill is: ${bill}")
```

```
Welcome to Python Pizza Deliveries!
What size pizza do you want? S, M, or L
L
Do you want pepperoni? Y or N
Y
Do you want extra cheese? Y or N
Y
Your final bill is: $29
```

In [4]:

```
# BMI Calculator.

height = float(input("enter your height in m: "))
weight = float(input("enter your weight in kg: "))

bmi = round(weight/(height**2), 2)
if bmi <= 18.5:
    print(f"Your BMI is {bmi}, you are underweight.")
elif bmi <=25:
    print(f"Your BMI is {bmi}, you have a normal weight.")
elif bmi <=30:
    print(f"Your BMI is {bmi}, you are slightly overweight.")
elif bmi <= 35:
    print(f"Your BMI is {bmi}, you are obese.")
elif bmi > 35:
    print(f"Your BMI is {bmi}, you are clinically obese.")
```

```
enter your height in m: 1.78
enter your weight in kg: 75.5
Your BMI is 23.83, you have a normal weight.
```

In [1]:

In [3]:

```
# Convert Kilogram into pounds

w = float(input("Enter your weight in kilogram = "))
p = round(2.2*w, 2)
print(f"Your weight is {p} pounds!")
```

Enter your weight in kilogram = 75.5
Your weight is 166.1 pounds!

In [2]:

```
#Example for functions

def travel_or_not(BIKE, CAR):
    TRAVEL_100_KM = BIKE or CAR

    print(f"You have BIKE: {BIKE}\n")
    print(f"You have CAR: {CAR}\n")
    print(f"You can travel 100 KM: {TRAVEL_100_KM}\n")

BIKE = [True, False, True, False]
CAR = [False, True, True, False]

for bike, car in zip(BIKE, CAR):
    travel_or_not(bike, car)
```

You have BIKE: True

You have CAR: False

You can travel 100 KM: True

You have BIKE: False

You have CAR: True

You can travel 100 KM: True

You have BIKE: True

You have CAR: True

You can travel 100 KM: True

You have BIKE: False

You have CAR: False

You can travel 100 KM: False

In [11]:

```
#Randomisation in python
```

```
import random
toss = random.randint(0,1)
if toss == 1:
    print("Heads")
else:
    print("Tails")
```

Tails

In [2]:

```
# Random payment of a bill
# Split string method
```

```
names_string = input("Give me everybody's names, separated by a comma. ")
names = names_string.split(", ")

a = len(names)
bill = random.randint(0,a-1)
person = names[bill]
print(f"{person} is going to pay the bill!")
```

Give me everybody's names, separated by a comma. Sachin, Hari, Jaimin, Deep
p
Hari is going to pay the bill!

In [4]:

```
# Random payment of a bill
# Split string method
```

```
names_string = input("Give me everybody's names, separated by a comma. ")
names = names_string.split(", ")

person = random.choice(names)
print(f"{person} is going to pay the bill!")
```

Give me everybody's names, separated by a comma. Sachin, Mohit, Hari, Jaimin, Deep
in, Deep
Deep is going to pay the bill!

In [2]:

```
#Adding all even numbers upto 100
```

```
total = 0
for number in range(2,101,2):
    total = total + number
print(f"The total is : {total}")
```

The total is : 2550

In [1]:

*#Your program should print each number from 1 to 100 in turn.
#When the number is divisible by 3 then instead of printing the number it should print "
#When the number is divisible by 5, then instead of printing the number it should print
#And if the number is divisible by both 3 and 5 e.g. 15 then instead of the number it sh*

```
for number in range(1,101):  
    if number%15 == 0:  
        print("FizzBuzz")  
    elif number%3 == 0:  
        print("Fizz")  
    elif number%5 == 0:  
        print("Buzz")  
    else:  
        print(number)
```

1
2
Fizz
4
Buzz
Fizz
7
8
Fizz
Buzz
11
Fizz
13
14
FizzBuzz
16
17
Fizz
19
Buzz
Fizz
22
23
Fizz
Buzz
26
Fizz
28
29
FizzBuzz
31
32
Fizz
34
Buzz
Fizz
37
38
Fizz
Buzz
41
Fizz
43
44
FizzBuzz
46
47
Fizz
49
Buzz
Fizz
52
53
Fizz
Buzz
56
Fizz
58
59
FizzBuzz
61

62
Fizz
64
Buzz
Fizz
67
68
Fizz
Buzz
71
Fizz
73
74
FizzBuzz
76
77
Fizz
79
Buzz
Fizz
82
83
Fizz
Buzz
86
Fizz
88
89
FizzBuzz
91
92
Fizz
94
Buzz
Fizz
97
98
Fizz
Buzz

In [3]:

```
#Password generator
```

```
import random
letters = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n', 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z']
numbers = ['0', '1', '2', '3', '4', '5', '6', '7', '8', '9']
symbols = ['!', '#', '$', '%', '&', '(', ')', '*', '+']

print("Welcome to the PyPassword Generator!")
nr_letters= int(input("How many letters would you like in your password?\n"))
nr_symbols = int(input(f"How many symbols would you like?\n"))
nr_numbers = int(input(f"How many numbers would you like?\n"))

password_list = []
for char in range(1, nr_letters + 1):
    password_list += random.choice(letters)
for char in range(1, nr_symbols + 1):
    password_list += random.choice(symbols)
for char in range(1, nr_numbers + 1):
    password_list += random.choice(numbers)

random.shuffle(password_list)

password = ""
for char in password_list:
    password += char
print(f"Your password is: {password}")
```

```
Welcome to the PyPassword Generator!
How many letters would you like in your password?
3
How many symbols would you like?
2
How many numbers would you like?
2
Your password is: x!4m7#p
```

In [4]:

```
# Program to fetch Fibonacci sequence

nterms = int(input("How many terms? "))

n1 = 0
n2 = 1
count = 0

if nterms <= 0:
    print("0")

elif nterms == 1:
    print(f"Fibonacci sequence upto {nterm} is {n1}")

else:
    print("Fibonacci sequence:")
    while count < nterms:
        print(n1)
        n3 = n1 + n2
        n1 = n2
        n2 = n3
        count += 1
```

How many terms? 12
Fibonacci sequence:

0
1
1
2
3
5
8
13
21
34
55
89

In [5]:

Hangman Game

import random

word_list = ["ardvark", "baboon", "camel"]

stages = ['''

+---+
 | |
 0
 /|\
 / \
 |

=====

''' , '''

+---+
 | |
 0
 /|\
 /
 |

=====

''' , '''

+---+
 | |
 0
 /|\
 |

=====

''' , '''

+---+
 | |
 0
 /|
 |

===== ''' , '''

+---+
 | |
 0
 |
 |

=====

''' , '''

+---+
 | |
 0
 |

=====

''' , '''

+---+
 | |
 |


```
end_of_game = True
print("You win.")

print(stages[lives])
```

Guess a letter: w
You guessed w, that's not in the word. You lose a life.

Guess a letter: c
You guessed c, that's not in the word. You lose a life.

Guess a letter: a

a

Guess a letter: v
You guessed v, that's not in the word. You lose a life.

a

$$\begin{array}{ccccccc} & + & - & - & - & + \\ & | & & & & | \\ 0 & & & & & & \\ / & | & & & & & \\ & & & & & & | \\ \hline \hline \hline \hline \hline \hline \hline \end{array}$$

Guess a letter: o

— a — o o —

$$\begin{array}{cc} + & - & - & + \\ | & & & | \\ 0 & & & | \end{array}$$

```

/|  |
   |
=====
Guess a letter: b
b a b o o _

```

```

+---+
|   |
| 0  |
/|   |
   |
=====
Guess a letter: n
b a b o o n
You win.

```

```

+---+
|   |
| 0  |
/|   |
   |
=====

```

In [1]:

```

# Greeting with a function

def greet(name):
    print(f"Hey there {name}!")
    print("I welcome you to day 8 of '100 days of code'!")
    print(f"Just remember {name}, when life gets tough, the tough gets going!")
greet("Sachin")

```

```

Hey there Sachin!
I welcome you to day 8 of '100 days of code'!
Just remember Sachin, when life gets tough, the tough gets going!

```

In [2]:

```

# Paint can calculator

import math
def paint_calc(height, width, cover):
    cans = (height*width)/cover
    cans = math.ceil(cans)
    print(f"You'll need {cans} cans of paint.")

test_h = int(input("Height of wall(in meters): "))
test_w = int(input("Width of wall(in meters): "))
coverage = 5

paint_calc(height=test_h, width=test_w, cover=coverage)

```

```

Height of wall(in meters): 3
Width of wall(in meters): 7
You'll need 5 cans of paint.

```

In [1]:

```
alphabet = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n', 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z']

def caesar(start_text, shift_amount, cipher_direction):
    end_text = ""
    if cipher_direction == "decode":
        shift_amount *= -1
    for char in start_text:
        if char in alphabet:
            position = alphabet.index(char)
            new_position = position + shift_amount
            end_text += alphabet[new_position]
        else:
            end_text += char
    print(f"Here's the {cipher_direction}d result: {end_text}")

should_end = False
while not should_end:

    direction = input("Type 'encode' to encrypt, type 'decode' to decrypt:\n")
    text = input("Type your message:\n").lower()
    shift = int(input("Type the shift number:\n"))
    shift = shift % 26

    caesar(start_text=text, shift_amount=shift, cipher_direction=direction)

    restart = input("Type 'yes' if you want to go again. Otherwise type 'no'.\n")
    if restart == "no":
        should_end = True
    print("Goodbye. See you later!")
```

Type 'encode' to encrypt, type 'decode' to decrypt:

encode

Type your message:

I miss you

Type the shift number:

5

Here's the encoded result: n rnxx dtz

Type 'yes' if you want to go again. Otherwise type 'no'.

yes

Type 'encode' to encrypt, type 'decode' to decrypt:

decode

Type your message:

n rnxx dtz

Type the shift number:

5

Here's the decoded result: i miss you

Type 'yes' if you want to go again. Otherwise type 'no'.

no

Goodbye. See you later!

In [1]:

```
#
l = [12,45,78,98,65,32,14,25,36,47,58,69,96,85,75,95,15,53,57,59]
l.sort()
y = l[1]
a = len(l)-2
x= l[a]
print(f"The second largest number is {x}.")
print(f"The second smallest number is {y}.")
```

The second largest number is 96.
The second smallest number is 14.

In []:

```
# Calculator

def add(n1, n2):
    return n1 + n2

def subtract(n1, n2):
    return n1 - n2

def multiply(n1, n2):
    return n1 * n2

def divide(n1, n2):
    return n1 / n2

operations = {
    "+": add,
    "-": subtract,
    "*": multiply,
    "/": divide
}

def calculator():
    num1 = float(input("What's the first number?: "))
    for symbol in operations:
        print(symbol)
    should_continue = True

    while should_continue:
        operation_symbol = input("Pick an operation: ")
        num2 = float(input("What's the next number?: "))
        calculation_function = operations[operation_symbol]
        answer = calculation_function(num1, num2)
        print(f"{num1} {operation_symbol} {num2} = {answer}")

        if input(f"Type 'y' to continue calculating with {answer}, or type 'n' to start a new calculation ") == 'y':
            num1 = answer
        else:
            should_continue = False
            calculator()

calculator()
```

In [19]:

```
# Q1

import math

def square_root(n):
    '''This is a function to find out the square root.'''
    a = round(math.sqrt(n), 2)
    print(f"The square root of {n} is {a}.")
n = float(input("Enter the number: "))
square_root(n)
```

Enter the number: 196.5
The square root of 196.5 is 14.02.

In []:

```
# Q2
```

In [20]:

```
# Q3

def highest_number():
    '''This is a function to find out the highest number out of these four numbers.'''
    l = [23,87,65,29]
    l.sort()
    print(l[3])

highest_number()
```

87

In [8]:

```
# Q4

def calc_area(r):
    '''This function will generate the area of circle!'''
    area = round((22/7)*r*r, 2)
    print(f"The area of the circle is {area} cm^2.")
radius = float(input("Enter the radius of the circle in cm: "))
calc_area(r=radius)
```

Enter the radius of the circle in cm: 2.5
The area of the circle is 19.64 cm^2.

In [26]:

```
# Q5

import random

list = range(0,10000)
def ran_num():
    '''This function will randomly pick out a number between 0 and 10000'''
    for a in list:
        x = random.choice(list)
        print(x)
ran_num()
```

4932

In [20]:

```
# Q6

list = [12,45,87,98,56,32,28]
length=len(list)
def average():
    a=0
    '''This function will return the average of N numbers'''
    for num in list:
        a=a+num
    avg = round(a/length , 3)
    print(f"The average is {avg}.")
average()
```

The average is 51.143.

In [28]:

```
# Q7

def factorial():
    '''This function will generate the factorial of a number.'''
    a = 1
    n = int(input("Enter the number to generate its factorial: "))
    for num in range(1,n+1):
        a = a*num
    print(f"{n}! = {a}")
factorial()
```

Enter the number to generate its factorial: 6
6! = 720

In [29]:

Q8

```
def leap_year():
    '''This function will determine whether a year is leap year or not.'''
    y = int(input("Enter the year = "))
    if (y%4 == 0 and y%100 != 0) or (y%400 == 0):
        print("It is a leap year.")
    else:
        print("It is not a leap year.")
leap_year()
```

```
Enter the year = 1800
It is not a leap year.
```

In [7]:

Q9

```
def diamond():
    '''This function will create a diamond of the specified rows.'''
    n = int(input("Enter the number of rows: "))
    for i in range(1, n+2, 2):
        print(" " * ((n-i)//2) + "*" * i)
    for i in range(n-2, 0, -2):
        print(" " * ((n-i)//2) + "*" * i)
diamond()
```

Enter the number of rows: 15

[illegible]

In [12]:

Q10

```
def prime_checker():
    '''This function will fetch all the prime numbers between 1 and 1000.'''
    for num in range(2, 1001):
        for i in range(2, num):
            if (num % i) == 0:
                break
        else:
            print(num, end = " ")
prime_checker()
```

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 101
103 107 109 113 127 131 137 139 149 151 157 163 167 173 179 181 191 193 197
199 211 223 227 229 233 239 241 251 257 263 269 271 277 281 283 293 307
311 313 317 331 337 347 349 353 359 367 373 379 383 389 397 401 409 419 421
431 433 439 443 449 457 461 463 467 479 487 491 499 503 509 521 523 541
547 557 563 569 571 577 587 593 599 601 607 613 617 619 631 641 643 647 659
661 673 677 683 691 701 709 719 727 733 739 743 751 757 761 769 773
787 797 809 811 821 823 827 829 839 853 857 859 863 877 881 883 887 907 911
919 929 937 941 947 953 967 971 977 983 991 997

In [17]:

Q12

```
s = (input('Enter a word : ')).lower()
def palindrome():
    '''This function will determine whether a word is a palindrome or not.'''
    if s[::-1] == s:
        print('This word is a palindrome.')
    else:
        print('This word is not a palindrome.')
palindrome()
```

Enter a word : RaceCar
This word is a palindrome

In []: