1.write a program to find out the prime numbers using python code:

num = int(input("enter a number here:"))  
# If given number is greater than 1  
if num > 1:  
 # Iterate from 2 to n / 2  
 for i in range(2, int(num/2)+1):  
 # If num is divisible by any number between  
 # 2 and n / 2, it is not prime  
 if (num % i) == 0:  
 print(num, "is not a prime number")  
 break  
 else:  
 print(num, "is a prime number")  
else:  
 print(num, "is not a prime number")

output:

enter a number here:23  
23 is a prime number

2. write a program to create the equation(a+b+c)\*(a-b-c)\*ab+a^2+b^2+(abc)^3 using python code

def equation\_value(a, b, c):  
 result = (a + b + c) \* (a - b - c) \* a \* b + a \*\* 2 + b \*\* 2 + (a \* b \* c) \*\* 3  
 return result  
  
def main():  
 a = float(input("Enter the value of a: "))  
 b = float(input("Enter the value of b: "))  
 c = float(input("Enter the value of c: "))  
  
 result = equation\_value(a, b, c)  
 print("Result of the equation:", result)  
  
if \_\_name\_\_ == "\_\_main\_\_":  
 main()

output:

Enter the value of a: 2  
Enter the value of b: 3  
Enter the value of c: 4  
Result of the equation: 13567.0

3. urlist=["wood","knife","axe"],mylist=["tree","apple","mango","melon"] - combine two lists using python code

urlist = ["wood", "knife", "axe"]  
mylist = ["tree", "apple", "mango", "melon"]  
  
combined\_list = urlist + mylist  
  
print(combined\_list)

urlist = ["wood", "knife", "axe"]  
mylist = ["tree", "apple", "mango", "melon"]  
  
for item in mylist:  
 urlist.append(item)  
  
combined\_list = urlist  
  
print(combined\_list)

output:

['wood', 'knife', 'axe', 'tree', 'apple', 'mango', 'melon']

4. write a program for natural number based on user input using python code

n = int(input("Enter a positive integer: "))  
  
if n <= 0:  
 print("Please enter a positive integer.")  
else:  
  
 print("Natural numbers up to", n, "are:")  
 for i in range(1, n + 1):  
 print(i)

n = int(input("Enter a positive integer: "))  
if n <= 0:  
 print("Please enter a positive integer.")  
else:  
 print("Natural numbers up to", n, "are:")  
 i = 1  
 while i <= n:  
 print(i)  
 i += 1

output:

Enter a positive integer: 3  
Natural numbers up to 3 are:  
1  
2  
3

5. write class and function for the equation sqrt(x1-x2)^2 + sqrt(y1-y2)^2 using try except handling in python

import math  
  
class DistanceCalculator:  
 @staticmethod  
 def calculate\_distance(x1, y1, x2, y2):  
 try:  
 # Calculating the distance using the formula  
 distance = math.sqrt((x1 - x2)\*\*2 + (y1 - y2)\*\*2)  
 return distance  
 except TypeError:  
 # Handling type errors  
 print("Error: Please provide numeric inputs for coordinates.")  
 return None  
 except ValueError:  
 # Handling value errors (e.g., if the input can't be converted to float)  
 print("Error: Invalid input. Please provide numeric values for coordinates.")  
 return None  
  
# Example usage:  
x1, y1 = 1, 3  
x2, y2 = 4, 6  
  
distance\_calculator = DistanceCalculator()  
distance = distance\_calculator.calculate\_distance(x1, y1, x2, y2)  
if distance is not None:  
 print("Distance between points:", distance)

output:

Distance between points: 4.242640687119285

6. Name="Guvi python" - write a program to get"python" word from the string

name = "Guvi python"  
words = name.split()  
for i in words:  
 if "python" in i:  
 print(i)  
 break  
else:  
 print("The word 'python' is not found in the string.")

output:

C:\Users\divya\PycharmProjects\pythonProject\venv\Scripts\python.exe C:\Users\divya\PycharmProjects\pythonProject\main.py   
python

7. using class and function- write a program for palindrome ex :madam

class PalindromeChecker:  
 @staticmethod  
 def is\_palindrome(word):  
 word = word.lower()  
 word = word.replace(" ", "")  
 return word == word[::-1]  
word = input("Enter a word: ")  
  
palindrome\_checker = PalindromeChecker()  
if palindrome\_checker.is\_palindrome(word):  
 print(f"{word} is a palindrome.")  
else:  
 print(f"{word} is not a palindrome.")

output:

Enter a word: malayalam  
malayalam is a palindrome

8. using file handling - write a text file in your system with "hello world"

# Open the file in write mode ("w")  
with open("hello.txt", "w") as file:  
 # Write "hello world" to the file  
 file.write("hello world\n")  
  
print("Text file 'hello.txt' has been created with 'hello world'.")

Output:

Text file 'hello.txt' has been created with 'hello world'.

9. create option button using tkinter GUI in python

import tkinter as tk  
  
def show\_selection():  
 # Get the selected value  
 selection = var.get()  
 # Display the selected value  
 label.config(text="You selected: " + selection)  
  
# Create the main window  
root = tk.Tk()  
root.title("Option Button Example")  
  
# Create a variable to store the selected value  
var = tk.StringVar()  
  
# Create option buttons  
option1 = tk.Radiobutton(root, text="Option 1", variable=var, value="Option 1", command=show\_selection)  
option2 = tk.Radiobutton(root, text="Option 2", variable=var, value="Option 2", command=show\_selection)  
option3 = tk.Radiobutton(root, text="Option 3", variable=var, value="Option 3", command=show\_selection)  
  
# Pack the option buttons  
option1.pack(anchor="w")  
option2.pack(anchor="w")  
option3.pack(anchor="w")  
  
# Create a label to display the selection  
label = tk.Label(root, text="")  
label.pack()  
  
# Start the Tkinter event loop  
root.mainloop()

10. keep only numbers from the following string x="89e9jcd^o38829@3%3,/mkl$w1" using python code

import re  
  
x = "89e9jcd^o38829@3%3,/mkl$w1"  
  
# Use regular expression to extract numbers  
numbers\_only = re.findall(r'\d+', x)  
  
# Join the extracted numbers into a single string  
result = ''.join(numbers\_only)  
  
print(result)

output:

89938829331