1. Write a Python Program to Check if a Number is Positive, Negative or Zero?

ANS: def check\_number(number):

if number > 0:

return "Positive"

elif number < 0:

return "Negative"

else:

return "Zero"

if \_\_name\_\_ == "\_\_main\_\_":

try:

num = float(input("Enter a number: "))

result = check\_number(num)

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

except ValueError:

print("Invalid input. Please enter a valid number.")

1. Write a Python Program to Check if a Number is Odd or Even?

ANS: You can write a Python program to check if a number is odd or even using the modulo operator (%). An even number divided by 2 leaves no remainder, while an odd number divided by 2 leaves a remainder of 1. Here's the program:

```python

def check\_odd\_even(number):

if number % 2 == 0:

return "Even"

else:

return "Odd"

if \_\_name\_\_ == "\_\_main\_\_":

try:

num = int(input("Enter a number: "))

result = check\_odd\_even(num)

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

except ValueError:

print("Invalid input. Please enter a valid integer.")

In this program, we define a function called `check\_odd\_even()` that takes a number as input and checks if it is even or odd using the modulo operator (%). If the number divided by 2 has no remainder (i.e., num % 2 == 0), it returns "Even". Otherwise, it returns "Odd".

In the `main` block, the user is prompted to enter a number. The program then calls the `check\_odd\_even()` function with the given number and prints the result, indicating whether the number is odd or even.

1. Write a Python Program to Check Leap Year?

ANS: def is\_leap\_year(year):

if year % 4 == 0 and (year % 100 != 0 or year % 400 == 0):

return True

else:

return False

if \_\_name\_\_ == "\_\_main\_\_":

try:

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.")

except ValueError:

print("Invalid input. Please enter a valid year.")

1. Write a Python Program to Check Prime Number?

ANS: import math

def is\_prime(number):

if number <= 1:

return False

for i in range(2, int(math.sqrt(number)) + 1):

if number % i == 0:

return False

return True

if \_\_name\_\_ == "\_\_main\_\_":

try:

num = int(input("Enter a number: "))

if is\_prime(num):

print(f"{num} is a prime number.")

else:

print(f"{num} is not a prime number.")

except ValueError:

print("Invalid input. Please enter a valid integer.")

1. Write a Python Program to Print all Prime Numbers in an Interval of 1-10000?

ANS: import math

def is\_prime(number):

if number <= 1:

return False

for i in range(2, int(math.sqrt(number)) + 1):

if number % i == 0:

return False

return True

if \_\_name\_\_ == "\_\_main\_\_":

print("Prime numbers between 1 and 10000:")

for num in range(1, 10001):

if is\_prime(num):

print(num)