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**1. Check if a Number is Positive, Negative, or Zero**

# Input a number from the user num = float(input("Enter a number: ")) # Check if the number is positive, negative, or zero if num > 0: print("The number is positive.") elif num < 0: print("The number is negative.") else: print("The number is zero.")

**2. Check if a Number is Odd or Even**

# Input a number from the user num = int(input("Enter a number: ")) # Check if the number is odd or even if num % 2 == 0: print("The number is even.") else: print("The number is odd.")

**3. Check Leap Year**

# Input a year from the user year = int(input("Enter a year: ")) # Check if the year is a leap year if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0): print(f"{year} is a leap year.") else: print(f"{year} is not a leap year.")

**4. Check Prime Number**

# Input a number from the user num = int(input("Enter a number: ")) # Check if the number is prime if num > 1: for i in range(2, int(num\*\*0.5) + 1): if (num % i) == 0: print(f"{num} is not a prime number.") break else: print(f"{num} is a prime number.") else: print(f"{num} is not a prime number.")

**5. Print Prime Numbers in an Interval of 1-10000**

# Function to check if a number is prime def is\_prime(n): if n > 1: for i in range(2, int(n\*\*0.5) + 1): if (n % i) == 0: return False else: return True else: return False # Print prime numbers in the interval of 1-10000 print("Prime numbers in the interval 1-10000:") for number in range(1, 10001): if is\_prime(number): print(number)