

Exercises

1. Write a program to check if a given number is even or odd.
2. Write a program to check if a given year is a leap year or not.
3. Write a program to check if a given character is a vowel or consonant.
4. Write a program to check if a given number is positive, negative, or zero.
5. Write a program to find the largest among three numbers.
6. Write a program to find the smallest among three numbers.
7. Write a program to check if a given number is a prime number or not.
8. Write a program to find the factorial of a given number.
9. Write a program to print the Fibonacci series up to a given number.
10. Write a program to check if a given number is a palindrome or not.

Exercises and solution

- 1) Check if a given number is even or odd:

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print(num, "is even")
else:
    print(num, "is odd")
```

2) Check if a given year is a leap year or not:

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

3) Check if a given character is a vowel or consonant:

```
ch = input("Enter a character: ")
if ch in ('a', 'e', 'i', 'o', 'u'):
    print(ch, "is a vowel")
else:
    print(ch, "is a consonant")
```

4) Check if a given number is positive, negative, or zero:

```
num = float(input("Enter a number: "))
if num > 0:
    print(num, "is positive")
elif num == 0:
    print(num, "is zero")
else:
    print(num, "is negative")
```

5) Find the largest among three numbers:

```
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))
c = float(input("Enter third number: "))
if a >= b and a >= c:
    print(a, "is the largest")
elif b >= a and b >= c:
    print(b, "is the largest")
else:
    print(c, "is the largest")
```

6) Find the smallest among three numbers:

```
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))
c = float(input("Enter third number: "))
if a <= b and a <= c:
    print(a, "is the smallest")
elif b <= a and b <= c:
    print(b, "is the smallest")
else:
    print(c, "is the smallest")
```

7) Check if a given number is a prime number or not:

```
num = int(input("Enter a number: "))
if num > 1:
    for i in range(2, num):
        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")
```

8) Find the factorial of a given number:

```
num = int(input("Enter a number: "))
factorial = 1
if num < 0:
    print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1, num + 1):
        factorial = factorial * i
    print("The factorial of", num, "is", factorial)
```

9) Print the Fibonacci series up to a given number:

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

```
a, b = 0, 1
```

```
if n >= 1:  
    print(a)
```

```
if n >= 2:  
    print(b)
```

```
for i in range(2, n):
```

```
    c = a + b
```

```
    a = b
```

```
    b = c
```

```
    if n >= i + 1:
```

```
        print(c)
```

```
    else:
```

```
        break
```

10) Check if a given string is a palindrome or not:

```
string = input("Enter a string: ")
```

```
if string == string[::-1]:
```

```
    print(string, "is a palindrome")
```

```
else:
```

```
    print(string, "is not a palindrome")
```