Exercises 1

1. Write a program that takes an input from the user and prints "Hello, [input]!"
2. Write a program that takes two numbers from the user and prints their sum.
3. Write a program that takes three numbers from the user and prints the largest of the three.
4. Write a program that prints the first n Fibonacci numbers, where n is an input from the user.
5. Write a program that prints all numbers from 1 to 100, but for multiples of 3, print "Fizz" instead of the number, and for multiples of 5, print "Buzz". For numbers that are multiples of both 3 and 5, print "FizzBuzz".
6. Write a program that checks if a given word, is a palindrome.
7. Write a program that sorts a list of numbers in ascending order.
8. Write a program that checks if a given number is prime.
9. Write a function that takes a list of numbers and returns the average.
10. Write a program that calculates the factorial of a given number.

Exercises and Solution

1. Write a program that takes an input from the user and prints "Hello, [input]!"

```
input_name = input("What is your name? ")
print("Hello, " + input_name + "!")
```

2. Write a program that takes two numbers from the user and prints their sum.

```
num1 = int(input("Enter a number: "))
num2 = int(input("Enter another number: "))
sum = num1 + num2
print("The sum of " + str(num1) + " and " + str(num2) + " is " + str(sum))
```

3. Write a program that takes three numbers from the user and prints the largest of the three.

```
num1 = int(input("Enter a number: "))
num2 = int(input("Enter another number: "))
num3 = int(input("Enter another number: "))
if (num1 >= num2) and (num1 >= num3):
  largest = num1
elif (num2 >= num1) and (num2 >= num3):
  largest = num2
else:
  largest = num3
print("The largest number is: " + str(largest))
```

4. Write a program that prints the first n Fibonacci numbers, where n is an input from the user.

```
n = int(input("Enter the number of Fibonacci numbers to generate: "))
def fibonacci(n):
  if n<0:
    print("Incorrect input")
  elif n==0:
```

```
    return 0
  elif n==1 or n==2:
    return 1
  else:
    return fibonacci(n-1)+fibonacci(n-2)
for i in range(n):
  print(fibonacci(i))
```

5. Write a program that prints all numbers from 1 to 100, but for multiples of 3, print "Fizz" instead of the number, and for multiples of 5, print "Buzz". For numbers that are multiples of both 3 and 5, print "FizzBuzz".

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

6. Write a program that checks if a given word, is a palindrome.

```
def is_palindrome(word):
  return word == word[::-1]
word = input("Enter a word: ")
if is_palindrome(word):
  print(word + " is a palindrome.")
else:
  print(word + " is not a palindrome.")
```

7. Write a program that sorts a list of numbers in ascending order.

```
def sort_numbers(numbers):
  numbers.sort()
  return numbers
```

```
numbers = [int(x) for x in input("Enter a list of numbers, separated by space: ").split()]
print("Sorted list:", sort_numbers(numbers))
```

8. Write a program that checks if a given number is prime.

```
def is_prime(num):
  if num > 1:
    for i in range(2,num):
      if (num % i) == 0:
        return False
    return True
  else:
    return False
num = int(input("Enter a number: "))
if is_prime(num):
  print(num, "is a prime number.")
else:
  print(num, "is not a prime number.")
```

9. Write a function that takes a list of numbers and returns the average.

```
def find_average(numbers):
  return sum(numbers)/len(numbers)
numbers = [int(x) for x in
```

10. Write a program that calculates the factorial of a given number.

```
def find_factorial(num):
  if num == 0:
    return 1
  else:
    return num * find_factorial(num-1)
num = int(input("Enter a number: "))
print("The factorial of", num, "is", find_factorial(num))
```