Activity 05 Function > Function.py > main

```python
def divide(a, b):
    if b == 0:
        print("Error: The second number or denominator must not be equal to zero.")
        return None
    return a / b

def exponentiation(a, b):
    return a ** b

def remainder(a, b):
    if b == 0:
        print("Error: The second number or denominator must not be equal to zero.")
        return None
    return a % b

def summation(a, b):
    if a > b:
        print("Error: The second number must be greater than the first number.")
        return None

    a = int(a)
    b = int(b)
    total = 0

    for i in range(a, b + 1):
        total += i
    return total

def main():
    while True:
        print("[D] - Divide")
        print("[E] - Exponentiation")
        print("[R] - Remainder")
        print("[F] - Summation")
        print("[Q] - Quit")

        choice = input("Enter the letter of choice: ").upper()

        if choice == 'D' or choice == 'E' or choice == 'R' or choice == 'F':
            a = float(input("Enter the first number: "))
            b = float(input("Enter the second number: "))

            if choice == 'D':
                result = divide(a, b)
            elif choice == 'E':
                result = exponentiation(a, b)
            elif choice == 'R':
                result = remainder(a, b)
            elif choice == 'F':
                result = summation(a, b)

            if result is not None:
                print("Result:", result)

        elif choice == 'Q':
            break
        else:
            print("Invalid choice. Please try again.")

main()
```

```
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: D
Enter the first number: 4
Enter the second number: 0
Error: The second number or denominator must not be equal to zero.
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: D
Enter the first number: 4
Enter the second number: 2
Result: 2.0
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: E
Enter the first number: 2
Enter the second number: 2
Result: 4.0
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: R
Enter the first number: 5
Enter the second number: 0
Error: The second number or denominator must not be equal to zero.
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: R
Enter the first number: 5
Enter the second number: 2
Result: 1.0
```

```
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: F
Enter the first number: 2
Enter the second number: 4
Result: 9
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: F
Enter the first number: 4
Enter the second number: 2
Error: The second number must be greater than the first number.
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter the letter of choice: Q
```