

Exercises

1. Write a program that takes a list of integers as input and prints the largest subsequence of increasing consecutive integers in the list.
2. Write a program that takes a list of integers as input and computes the average of the numbers in the list.
3. Write a program that takes a list of integers as input and prints the largest number in the list that is not divisible by any of the other numbers in the list.
4. Write a program that takes a positive integer n as input and prints the sum of the first n even numbers.
5. Write a program that takes a list of integers as input and prints the product of all the numbers in the list.
6. Write a program that takes a positive integer n as input and prints the first n terms of the sequence 1, 2, 4, 7, 11, 16, 22, Each term in the sequence is obtained by adding the current term number to the previous term.
7. Write a program that takes a string as input and prints the string in reverse order.
8. Write a program that takes a list of integers as input and removes the largest number from the list.
9. Write a program that takes a positive integer n as input and prints the n th term of the sequence 1, 1, 2, 3, 5, 8, 13, Each term in the sequence is obtained by adding the two previous terms.

Exercises and Solution

1. Write a program that takes a list of integers as input and prints the largest subsequence of increasing consecutive integers in the list.

```
nums = [int(num) for num in input("Enter a list of numbers: ").split()]
start = 0
end = 0
max_start = 0
max_end = 0
i = 1
while i < len(nums):
    if nums[i] > nums[i-1]:
        end = i
    else:
        if end - start > max_end - max_start:
            max_start = start
```

```

        max_end = end

    start = i

    end = i

    i += 1

if end - start > max_end - max_start:

    max_start = start

    max_end = end

print("The largest subsequence of increasing consecutive integers is:", nums[max_start:max_end+1])

```

- Write a program that takes a list of integers as input and computes the average of the numbers in the list.

```

nums = [int(num) for num in input("Enter a list of numbers: ").split()]

sum = 0

i = 0

while i < len(nums):

    sum += nums[i]

    i += 1

average = sum / len(nums)

print("The average of the numbers is:", average)

```

- Write a program that takes a list of integers as input and prints the largest number in the list that is not divisible by any of the other numbers in the list.

```

nums = [int(num) for num in input("Enter a list of numbers: ").split()]

largest = 0

for i in range(len(nums)):

    is_divisible = False

    for j in range(len(nums)):

        if i != j and nums[i] % nums[j] == 0:

            is_divisible = True

            break

    if not is_divisible and nums[i] > largest:

        largest = nums[i]

print("The largest number that is not divisible by any other number is:", largest)

```

- Write a program that takes a positive integer n as input and prints the sum of the first n even numbers.

```

n = int(input("Enter a positive integer: "))
sum = 0
num = 2
count = 0
while count < n:
    sum += num
    num += 2
    count += 1
print("The sum of the first", n, "even numbers is:", sum)

```

- Write a program that takes a list of integers as input and prints the product of all the numbers in the list.

```

nums = [int(num) for num in input("Enter a list of numbers: ").split()]
product = 1
i = 0
while i < len(nums):
    product *= nums[i]
    i += 1
print("The product of the numbers is:", product)

```

- Write a program that takes a positive integer n as input and prints the first n terms of the sequence 1, 2, 4, 7, 11, 16, 22, Each term in the sequence is obtained by adding the current term number to the previous term.

```

n = int(input("Enter a positive integer: "))
terms = [1]
i = 1
while len(terms) < n:
    terms.append(terms[-1] + i)
    i += 1
print("The first", n, "terms of the sequence are:", terms)

```

- Write a program that takes a string as input and prints the string in reverse order.

```

string = input("Enter a string: ")
i = len(string) - 1
while i >= 0:
    print(string[i], end="")

```

```
i -= 1
```

```
print()
```

8. Write a program that takes a list of integers as input and removes the largest number from the list.

```
nums = [int(num) for num in input("Enter a list of numbers: ").split()]
```

```
largest = max(nums)
```

```
nums.remove(largest)
```

```
print("The list with the largest number removed is:", nums)
```

9. Write a program that takes a positive integer n as input and prints the n th term of the sequence 1, 1, 2, 3, 5, 8, 13, Each term in the sequence is obtained by adding the two previous terms.

```
n = int(input("Enter a positive integer: "))
```

```
if n == 1 or n == 2:
```

```
    term = 1
```

```
else:
```

```
    prev1 = 1
```

```
    prev2 = 1
```

```
    i = 3
```

```
    while i <= n:
```

```
        term = prev1 + prev2
```

```
        prev2 = prev1
```

```
        prev1 = term
```

```
        i += 1
```

```
print("The", n, "th term of the sequence is:", term)
```