TASK REPORT
ALGORITHMS AND DATA STRUCTURE
WEEK 4

Created by:

Onic Agustino

L200234275

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INFORMATICS ENGINEERING

FACULTY OF COMMUNICATION AND INFORMATICS

UNIVERSITAS MUHAMMADIYAH SURAKARTA

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TASK

1. **Write a Python program to find the longest word in a given String.**

```python
# A program to find the longest word in a given string

def find_longest_word(kalimat):
    """Find the longest word in the given sentence."""
    words = kalimat.split()  # Split the sentence into words
    longest_word = max(words, key=len)  # Find the word with the maximum length
    return longest_word

# Example usage
input_sentence = "I love to learn python"
longest_word = find_longest_word(input_sentence)
print(f'The longest word is "{longest_word}"')

# Example usage 2
input_sentence1 = "I am a python programmer"
longest_word = find_longest_word(input_sentence1)
print(f'The longest word is "{longest_word}"')

print('\n--- Oleh L200234275 ---')
```

Picture 1.1 the code.

```
PS D:\Semester 4\Algorithm_and_structuredata> & C:/Users/Acer/AppData/Local/Programs/Python/Python311/python.exe "d:/Semester 4/Algorithm_and_structuredata/Week4/coba1.py"
The longest word is "python"
The longest word is "programmer"

--- Oleh L200234275 ---
```

Picture 1.2 the output.

2. **Write a Python program to find one missing number in a given array of numbers between 1 and 10.**

```python
# A program to find one missing number in a given array of numbers between 1 and 10

def find_missing_number(arr):
    """Find the missing number in the given array."""
    expected_sum = sum(range(1, 11))  # Sum of numbers from 1 to 10
    actual_sum = sum(arr)  # Sum of numbers in the given array
    missing_number = expected_sum - actual_sum  # The difference is the missing number
    return missing_number

# Example usage
input_array = [1, 2, 3, 4, 5, 6, 8, 9, 10]
missing_number = find_missing_number(input_array)
print(f'Missing number is {missing_number}')

# Example usage 2
input_array1 = [1,3, 4, 5, 6, 7, 8, 9, 10]
missing_number = find_missing_number(input_array1)
print(f'Missing number is {missing_number}')

print('\n--- Oleh L200234275 ---')
```

Picture 2.1 the code.

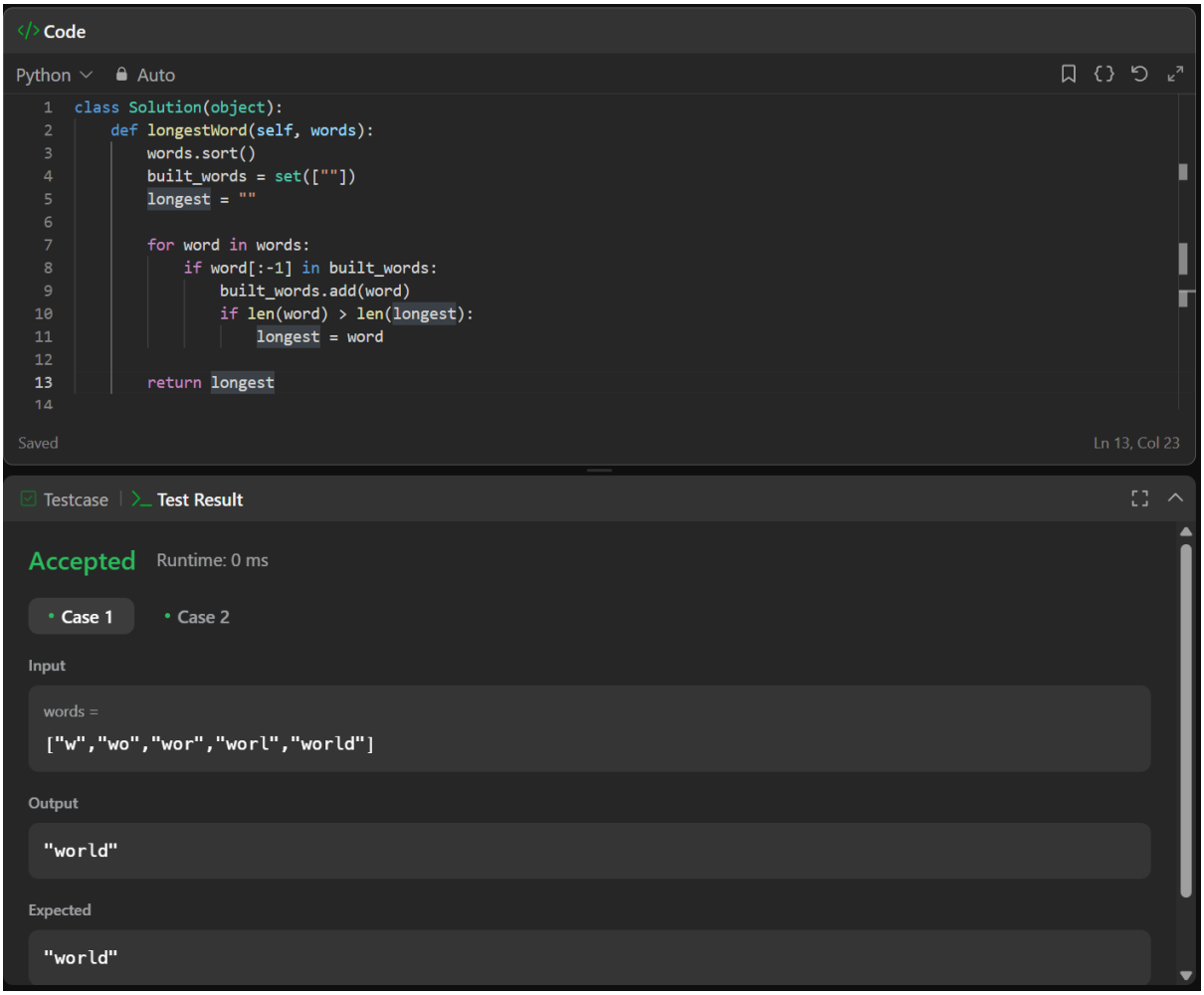
```
PS D:\Semester 4\Algorithm_and_structuredata> & C:/Users/Acer/AppData/Local/Programs/Python/Python311/python.exe "d:/Semester 4/Algorithm_and_structuredata/Week4/coba2.py"
Missing number is 7
Missing number is 2

--- Oleh L200234275 ---
```

Picture 2.2 the output.

Letcode

1. Longest Word in Dictionary



2. Missing Number