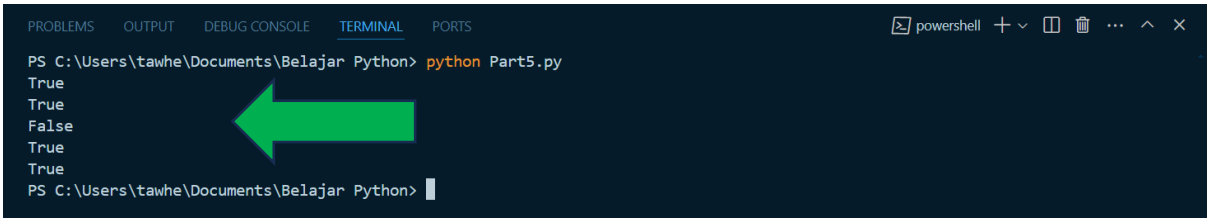
Part 5 – Complexity Analysis

1. Problem 1 – Bilangan Prima

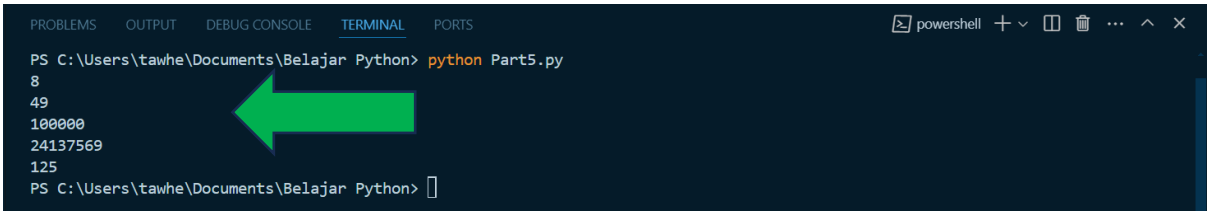
```
def prime_number(number):
    if number <= 1:
        return False
    if number <= 3:
        return True
    if number % 2 == 0 or number % 3 == 0:
        return False
    i = 5
    while i * i <= number:
        if number % i == 0 or number % (i + 2) == 0:
            return False
        i += 6
    return True

print(prime_number(1000000007))
print(prime_number(1500450271))
print(prime_number(1000000000))
print(prime_number(10000000019))
print(prime_number(10000000033))
```



2. Problem 2 – Fast Exponentiation

```
def pow(x, n):
    result = 1
    while n > 0:
        if n % 2 == 1:
            result *= x
        x *= x
        n //= 2
    return result
```

```
print(pow(2, 3))
print(pow(7, 2))
print(pow(10, 5))
print(pow(17, 6))
print(pow(5, 3))
```

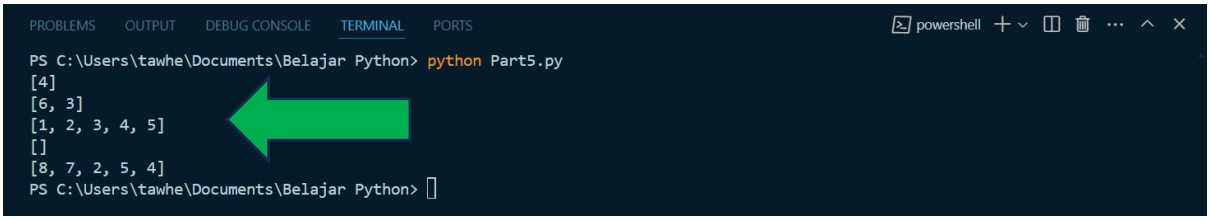


3. Problem 3 – Join Array Remove Duplicate

```
def join_array_remove_duplicate(arrayA, arrayB):
    combined_set = set(arrayA) | set(arrayB)
    return list(combined_set)

print(join_array_remove_duplicate(["apel", "anggur"], ["lemon", "leci", "nanas"]))
print(join_array_remove_duplicate(["samsung", "apple"], ["apple", "sony",
"xiaomi"]))
print(join_array_remove_duplicate(["football", "basketball"], ["basketball",
"football"]))
```

4. Problem – Angka Muncul Sekali

```
from collections import Counter

def muncul_sekali(angka):
        count = Counter(angka)
        result = [int(k) for k, v in count.items() if v == 1]
    return result

print(muncul_sekali("1234123"))
print(muncul_sekali("76523752"))
print(muncul_sekali("12345"))
print(muncul_sekali("1122334455"))
print(muncul_sekali("0872504"))
```



5. Problem 5 – Pair with Target Sum

```
def pair_sum(arr, target):
    seen = {}

    for i, num in enumerate(arr):
        diff = target - num

        if diff in seen:
            return [seen[diff], i]

        seen[num] = i

    return []

print(pair_sum([1, 2, 3, 4, 6], 6))
print(pair_sum([2, 5, 9, 11], 11))
print(pair_sum([1, 3, 5, 7], 12))
print(pair_sum([1, 4, 6, 8], 10))
print(pair_sum([1, 5, 6, 7], 6))
```