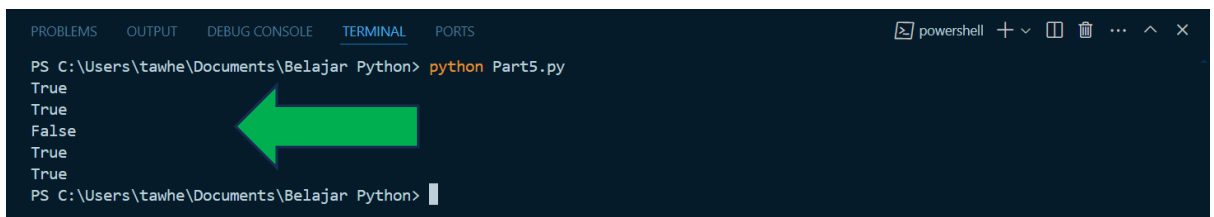


## Part 5 – Complexity Analysis

### 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))
```



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS  
PS C:\Users\tawhe\Documents\Belajar Python> python Part5.py  
True  
True  
False  
True  
True  
PS C:\Users\tawhe\Documents\Belajar Python> |
```

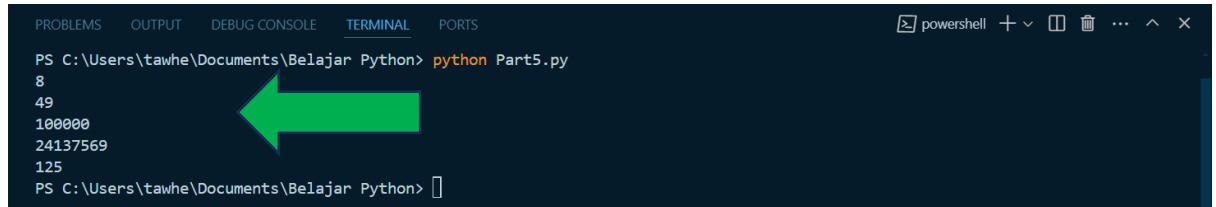
### 2. Problem 2 – Fast Exponentiation

```
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))

```



```

PS C:\Users\tawhe\Documents\Belajar Python> python Part5.py
8
49
100000
24137569
125
PS C:\Users\tawhe\Documents\Belajar Python>

```

### 3. Problem 3 – Join Array Remove Duplicate

```

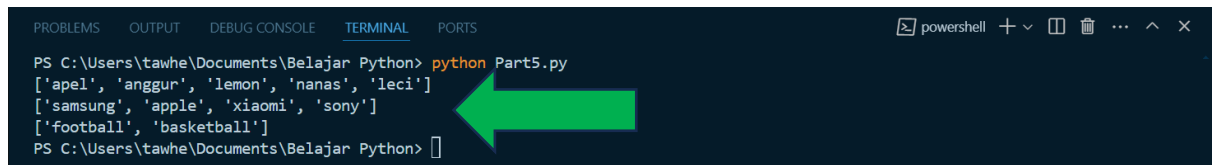
def join_array_remove_duplicate(arrayA, arrayB):
    combined_set = set(arrayA) | set(arrayB)
    return list(combined_set)

```

```

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"]))

```



```

PS C:\Users\tawhe\Documents\Belajar Python> python Part5.py
['apel', 'anggur', 'lemon', 'nanas', 'leci']
['samsung', 'apple', 'xiaomi', 'sony']
['football', 'basketball']
PS C:\Users\tawhe\Documents\Belajar Python>

```

### 4. Problem – Angka Muncul Sekali

```

from collections import Counter

```

```

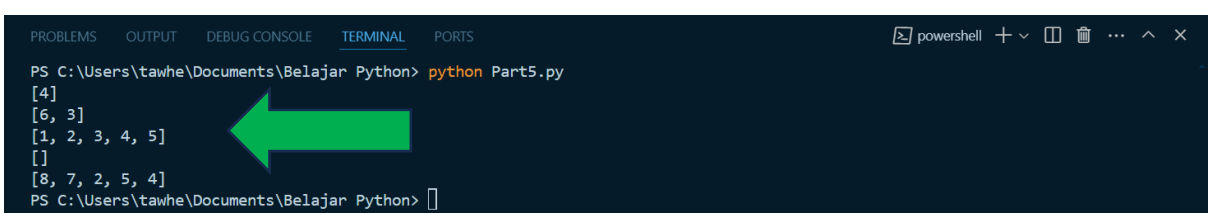
def muncul_sekali(angka):
    count = Counter(angka)
    result = [int(k) for k, v in count.items() if v == 1]
    return result

```

```

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

```



```

PS C:\Users\tawhe\Documents\Belajar Python> python Part5.py
[4]
[6, 3]
[1, 2, 3, 4, 5]
[]
[8, 7, 2, 5, 4]
PS C:\Users\tawhe\Documents\Belajar Python>

```

### 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))
```

```
PS C:\Users\tawhe\Documents\Belajar Python> python Part5.py  
[1, 3]  
[0, 2]  
[2, 3]  
[1, 2]  
[0, 1]  
PS C:\Users\tawhe\Documents\Belajar Python>
```