PART 4

Advance Looping & List

Problem 1 - Play With Asterisk

Input Program

part4.py > ...

```python
######### Advance Looping & List #######

## Problem 1 - play with asterisk

def play_with_asterisk(n):
    for i in range(1, n + 1):
        print(' ' * (n - i) + '* ' * i)

play_with_asterisk(5)
print()
play_with_asterisk(8)
```

Output Program

```
wartadi@Wartadis-MacBook-Pro belajar_phython_alta % python3 part4.py
    *
   * *
  * * *
 * * * *
* * * * *

       *
      * *
     * * *
    * * * *
   * * * * *
  * * * * * *
 * * * * * * *
* * * * * * * *
```

Problem 2 - Draw XYZ

Input Program

part4.py > ...

```python

# # Problem 2 - draw XYZ

def draw_xyz(N):
    result = []
    for i in range(N):
        row = []
        for j in range(N):
            position = i * N + j + 1
            if position % 3 == 0:
                row.append('X')
            elif position % 2 == 0:
                row.append('Z')
            else:
                row.append('Y')
        result.append(' '.join(row))
    return '\n'.join(result)

# Contoh penggunaan
print("where input = 3")
print(draw_xyz(3))
print("where input = 5")
print(draw_xyz(5))
```

Output Program

```
wartadi@Wartadis-MacBook-Pro belajar_phython_alta % python3 part4.py
where input = 3
Y Z X
Z Y X
Y Z X
where input = 5
Y Z X Z Y
X Y Z X Z
Y X Y Z X
Z Y X Y Z
X Z Y X Y
```

Problem 3 - Cetak Tabel Perkalian

Input Program

part4.py > ...

```python
# Proble 3 - Cetak Tabel Perkalian

def cetak_table_perkalian(number):
    for i in range(1, number + 1):
        row = []
        for j in range(1, number + 1):
            row.append(str(i * j).rjust(4))
        print(' '.join(row))

print("where input = 9")
cetak_table_perkalian(9)
```

Output Program

```
wartadi@Wartadis-MacBook-Pro belajar_phython_alta % python3 part4.py
where input = 9
   1    2    3    4    5    6    7    8    9
   2    4    6    8   10   12   14   16   18
   3    6    9   12   15   18   21   24   27
   4    8   12   16   20   24   28   32   36
   5   10   15   20   25   30   35   40   45
   6   12   18   24   30   36   42   48   54
   7   14   21   28   35   42   49   56   63
   8   16   24   32   40   48   56   64   72
   9   18   27   36   45   54   63   72   81
```

Problem 4 - Ubah Huruf

Input Program

part4.py > ...

```python
# Problem 4 - Ubah Huruf
def ubah_huruf(sentence):
    alphabet = 'ABCDEFGHIJKLMNOPQRSTUVWXYZ'
    shifted_alphabet = 'KLMNOPQRSTUVWXYZABCDEFGHIJ'
    translation_table = str.maketrans(alphabet, shifted_alphabet)
    return sentence.translate(translation_table)

# Contoh penggunaan
print(("SEPULSA OKE \t="),ubah_huruf("SEPULSA OKE")) # COZEVCK YUO
print(("ALTERRA ACADEMY ="),ubah_huruf("ALTERRA ACADEMY"))  # KVDOBBK KMKNOWI
print(("INDONESIA \t="),ubah_huruf("INDONESIA"))  # SXNYXOCSK
print(("GOLANG \t\t="),ubah_huruf("GOLANG"))  # QYVKXQ
print(("PROGRAMMER\t="),ubah_huruf("PROGRAMMER"))  # ZBYQBKWWOB
```

Output Program

```
wartadi@Wartadis-MacBook-Pro belajar_phython_alta % python3 part4.py
SEPULSA OKE     = COZEVCK YUO
ALTERRA ACADEMY = KVDOBBK KMKNOWI
INDONESIA       = SXNYXOCSK
GOLANG          = QYVKXQ
PROGRAMMER      = ZBYQBKWWOB
```

Problem 5 - Mean dan Median

Input Program

part4.py > ...

```python
## Problem 5 - Mean & Median
def mean_median(array_input):
    n = len(array_input)
    mean = sum(array_input) / n

    if n % 2 == 0:
        median = (array_input[n // 2 - 1] + array_input[n // 2]) / 2
    else:
        median = array_input[n // 2]

    return (mean, median)

print("Mean, Median")
print(mean_median([1, 2, 3, 4]))  # (2.5, 2.5)
print(mean_median([1, 2, 3, 4, 5]))  # (3.0, 3)
print(mean_median([7, 8, 9, 13, 15]))  # (10.4, 9)
print(mean_median([10, 20, 30, 40, 50]))  # (30.0, 30)
print(mean_median([15, 20, 30, 60, 120]))  # (49.0, 30)
```

Output Program

```
wartadi@Wartadis-MacBook-Pro belajar_phython_alta % python3 part4.py
Mean, Median
(2.5, 2.5)
(3.0, 3)
(10.4, 9)
(30.0, 30)
(49.0, 30)
```