114. Analysis Frame work – Asymptotic Notations Basic Efficiency Class: Big-O notation, Omega notation, Theta notation,

AIM: To solve the analysis Frame work – Asymptotic Notations Basic Efficiency Classs: Big - Onotation, Omega notation , Thetha Notation

PROGRAM:

```
def example_function(arr):
    """ Example function to demonstrate asymptotic notations """
    n = len(arr)

    # Constant time operations
    total = 0
    for i in range(10):
        total += i

    # Linear time operations
    for num in arr:
        print(num)

    # Quadratic time operations
    for i in range(n):
        for j in range(n):
            print(i, j)

# Example usage:
array = [1, 2, 3, 4, 5]
example_function(array)

# Calculate and print time complexity
```

```
n = len(array)

print(f"Time Complexity:")

print(f" - Big-O Notation: O(n^2)")

print(f" - Omega Notation: Omega(1)")

print(f" - Theta Notation: Theta(n^2)")
```

OUTPUT:

```
5
0 0
0 1
0 2
0 3
0 4
1 0
1 1
1 2
1 3
1 4
2 0
2 1
2 2
2 3
2 4
3 0
3 1
3 2
3 3
3 4
4 0
4 1
4 2
4 3
4 4
```

TIME COMPLEXITY:

```
Time Complexity:
 - Big-O Notation: O(n^2)
 - Omega Notation: Omega(1)
 - Theta Notation: Theta(n^2)
```