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**Academy of
Engineering**

(An Autonomous Institute Affiliated to Savitribai Phule Pune University)

EDS

Function and example Fibonacci

WHAT IS A FIBBONACCI ?

- A number series where each value is the sum of the two before it (0, 1, 1, 2, 3, 5, 8...).
- Used in art, architecture, and design patterns like the golden ratio.
- Common in nature (flower petals, pinecones, and spirals in shells).

FUNCTION OF FIBBONACCI

- Helps in data structures, cryptography, and AI algorithms.
- Used for pattern recognition, calculations, and problem-solving.
- Helps optimize search algorithms and financial predictions

EXAMPLES

- Stock market predictions: Helps analyze trends.
- Biological modeling: Used in genetics and population growth.
- Number sequence generation:

```
def fibonacci(n):  
    sequence = [0, 1]  
    for i in range(2, n):  
        sequence.append(sequence[i-1] + sequence[i-2])  
    return sequence  
print(fibonacci(10)) # First 10 Fibonacci numbers
```

PERFORMING FIBBONACCI OPERATIONS

- Intersection (): Finds common elements between two sets.
- Union (): Combines elements from both sets.
- Difference (): Finds unique elements in one set.

```
set1 = {1, 2, 3, 5, 8}
```

```
set2 = {3, 5, 8, 13, 21}
```

```
print("Intersection:", set1 & set2) # {3, 5, 8}
```

```
print("Union:", set1 | set2) # {1, 2, 3, 5, 8, 13, 21}
```

```
print("Difference:", set1 - set2) # {1, 2}
```