

## Modules Mock Test - PPT Program

Q2. Implement a decorator function called 'timer' that measures the execution time of a function. The 'timer' decorator should print the time taken by the decorated function to execute. Use the 'time' module in Python to calculate the execution time.

Sol:

```
import time
```

```
@timer
```

```
def fibonacci(n):
```

```
    if n <= 0:
```

```
        return []
```

```
    elif n == 1:
```

```
        return [0]
```

```
    elif n == 2:
```

```
        return [0, 1]
```

```
    else:
```

```
        fib = [0, 1]
```

```
        for _ in range(2, n):
```

```
            fib.append(fib[-1] + fib[-2])
```

```
        return fib
```

Example:

```
fib_sequence = fibonacci(20)
```

```
print("Fibonacci sequence:", fib_sequence)
```

Output:

Execution time: 0.00012 seconds

Fibonacci sequence: [0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181]