

**NATIONAL UNIVERSITY OF MODERN LANGUAGES**  
**ISLAMABAD**



Software Engineering (Assignments)

**Assignment: 02**

**Submitted to**  
Ms. Farnaz Akbar

**Submitted By**  
Adeel Naeem  
(BSAI-146)

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## Prescriptive vs. Descriptive Process Models

### 1. Introduction

Process models help organizations define, understand, and improve their workflows. These models can be classified into two broad categories: **Prescriptive Process Models** and **Descriptive Process Models**. Understanding the differences between these models is crucial for effective process management.

### 2. Prescriptive Process Models

#### Definition

A **Prescriptive Process Model** is a structured and predefined model that dictates how a process should be executed. It provides a strict set of rules, procedures, and best practices to ensure consistency and efficiency.

#### Characteristics

- Defines exact workflows and sequences of activities.
- Focuses on standardization and process optimization.
- Used in regulated industries where compliance is critical.
- Often represented using flowcharts, BPMN diagrams, or structured methodologies like Waterfall and Agile.

#### Examples

- Software Development Life Cycle (SDLC)
- ISO 9001 Quality Management System
- ITIL (Information Technology Infrastructure Library)

### 3. Descriptive Process Models

#### Definition

A **Descriptive Process Model** captures how a process is actually performed rather than how it should be performed. It is often derived from real-world observations and historical data.

#### Characteristics

- Describes the actual execution of a process.
- Helps in identifying inefficiencies, deviations, and areas of improvement.
- Used for auditing, process mining, and understanding current workflows.
- Often represented using logs, process mining models, and historical records.

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### Examples

- Employee task execution logs
- Business process mining results
- Customer service workflow analysis

### 4. Key Differences

Feature	Prescriptive Process Model	Descriptive Process Model
Purpose	Defines how a process should be performed	Describes how a process is actually performed
Flexibility	Rigid and structured	Flexible and based on real-world execution
Use Case	Standardization, compliance, and process control	Process analysis, optimization, and auditing
Representation	Flowcharts, BPMN, structured methodologies	Logs, process mining, historical data

### 5. Conclusion

Both **Prescriptive** and **Descriptive** process models play vital roles in business and software development. Prescriptive models provide a structured framework for process execution, while descriptive models help analyze and optimize actual workflows. Organizations should leverage both models to balance control and continuous improvement.