Introduction to Prototype Model

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Introduction To PROTOTYPE MODEL

1. Prototype Model is a **software development approach** in which an **initial working model (prototype)** of the system is developed before the final product.

2. It is mainly used when **user requirements are unclear or incomplete** at the beginning.

3. The prototype helps users **visualize the system** and give feedback.

4. Based on feedback, the system is **refined and improved**.

Explanation:

In real-world projects, clients often don’t know exactly what they want. Prototype model solves this problem by first creating a sample system, so users can see and suggest changes before final development

Steps of Prototype Model

1. **Requirement Gathering (Initial)** - Collect basic requirements from users
2. **Quick Design -** Design simple interface/output
3. **Build Prototype** - Develop a working model
4. **User Evaluation** - Users test and give feedback
5. **Refinement** - Improve prototype based on feedback
6. **Final System Development** - Develop complete system after approval

Types of Prototype Model

1.Throwaway Prototype (Rapid Prototype)

- Built quickly to understand requirements
- Discarded after use
- Final system developed separately

2.Evolutionary Prototype

- Prototype is continuously improved
- Finally becomes the actual system

Explanation:

- Throwaway is useful for **requirement clarity**
- Evolutionary is useful when system needs **continuous improvement**

Advantages of Prototype Model

1) Helps in **clear requirement understanding**
2) Increases **user involvement and satisfaction**
3) Detects errors in early stage
4) Reduces chances of system failure
5) Improves overall system quality
6) Useful for **complex and interactive systems**

Disadvantages of Prototype Model

1. Can be **time-consuming** due to repeated changes
2. Development cost may increase
3. May lead to **poor documentation**
4. Users may get confused between prototype and final product
5. Not suitable for **very large systems**