SNS COLLEGE OF ENGINEERING

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Accredited by NAAC-UGC with 'A' Grade
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Department of Information Technology

Course Name –Software Engineering

II Year / III Semester

Prototyping Software Process Model

A prototype is a version of a system or part of the system that's developed quickly to check the customer's requirements or feasibility of some design decisions.

So, a prototype is useful when a customer or developer is not sure of the requirements, or of algorithms, efficiency, business rules, response time, etc.

In prototyping, the client is involved throughout the development process, which increases the likelihood of client acceptance of the final implementation.

While some prototypes are developed with the expectation that they will be discarded, it is possible in some cases to evolve from prototype to working system.

A software prototype can be used:

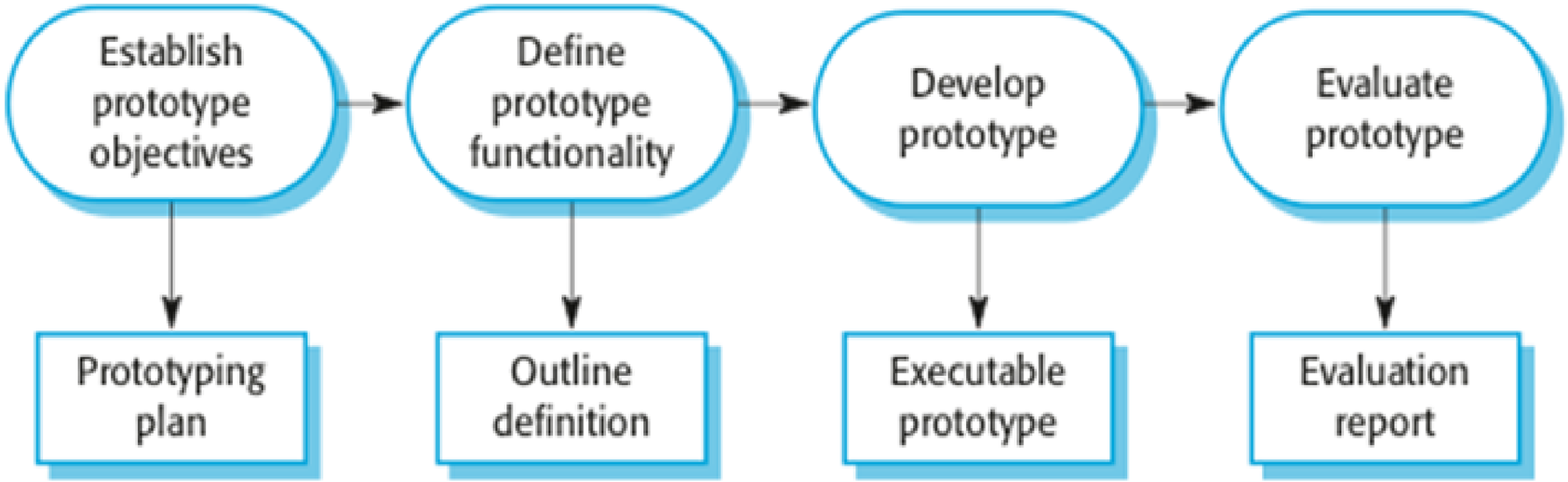
[1] In the requirements engineering, a prototype can help with the elicitation and validation of system requirements.

It allows the users to experiment with the system, and so, refine the requirements. They may get new ideas for requirements, and find areas of strength and weakness in the software.

Furthermore, as the prototype is developed, it may reveal errors and in the requirements. The specification maybe then modified to reflect the changes.

[2] In the system design, a prototype can help to carry out deign experiments to check the feasibility of a proposed design.

For example, a database design may be prototype-d and tested to check it supports efficient data access for the most common user queries.



The process of prototype development

The phases of a prototype are:

1. **Establish objectives:** The objectives of the prototype should be made explicit from the start of the process. Is it to validate system requirements, or demonstrate feasibility, etc.
2. **Define prototype functionality:** Decide what are the inputs and the expected output from a prototype. To reduce the prototyping costs and accelerate the delivery schedule, you may ignore some functionality, such as response time and memory utilization unless they are relevant to the objective of the prototype.
3. **Develop the prototype:** The initial prototype is developed that includes only user interfaces.
4. **Evaluate the prototype:** Once the users are trained to use the prototype, they then discover requirements errors. Using the feedback both the specifications and the prototype can be improved. If changes are introduced, then a repeat of steps 3 and 4 may be needed.

THANK YOU