SDLC : PROTOTYPE MODEL

Software Prototyping :- It refers to the activity of creating Prototypes of software applications i.e Incomplete versions of the software program being developed.

Prototype Model :- Prototype model is generally used when the requirements are unclear. It is used when the Customer is unclear about the details of the input, process and the Output needs of the software.

A prototype is a **Toy implementation of the System.**

A Prototype usually Exhibits
- Limited functional capability,
- Low Reliability
- Inefficient performe
- Sample of actual product

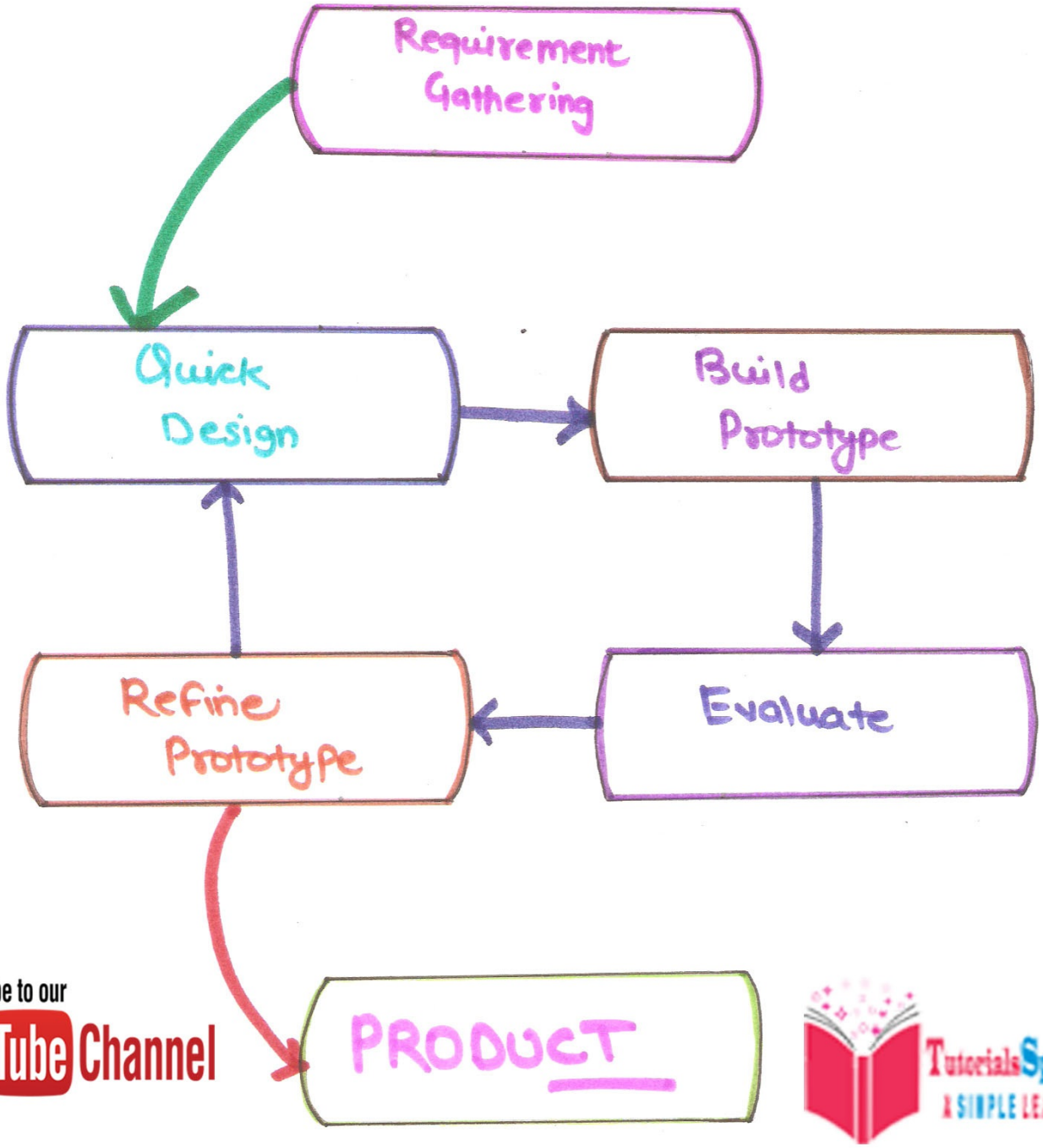
* It is usually built using several 'shortcuts'. The shortcuts might involve using **inefficient, Inaccurate, or dummy functions.**

Example : In a process we can show a **table-look-up** instead of showing actual computation.

In this prototyping quick iteration are planned and quick modelling occurs.

The prototype is implemented and then assessed by the Customer or user for their feedback to refine Requirements for the Software.

The prototyping is tuned and iterated till the Customer Satisfaction.



PROTOTYPE MODEL

Stepwise Approach to design a Software prototype

Requirement Gathering :- Understanding the very basics product requirements especially in terms of user Interface.

Quick Design :- After Requirement Gathering, a quick Design is made i.e work on Flow Diagram, Language etc.

Build Prototype :- In this basic Requirements are showcased and user interfaces are provided. This prototype gives same look and feel to the Customer in what will be exactly product.

Evaluate / Review of the Prototype :- The prototype developed is then presented to the Customer and the other Stake holders in the project. Feedback is collected and used for further enhancements.

Refine Prototype :- **Feedbacks and Comments** are discussed and Some negotiations happen with Customer based on **Time and budget Constraints**. The changes Accepted are again incorporated in the new prototype. This Cycle Repeats until Customer Expectations are met.

Product :- After Repeating above Steps, Finally Product is developed, meeting user Expectations.

Need for a Prototype in Software Development :-

→ To illustrate the Input data formats, Messages, Reports, and the interactive Dialogues to the Customer.

- How the screens might look like
- How the user interface would behave
- How the System would produce Outputs

Another Reason for Developing a prototype is that it is impossible to get the perfect product in the first attempt.

A prototype Model can be used when technical solutions are unclear to the Development Team.

A developed prototype also helps engineers to Critically examine the Technical issues Associated with the Product development.

Example :- User Requirement Are Not CLEAR

Like billing in Retail Shop, the user of the software are not clear about the different functionalities required.

Example 2:- Technical Issues Are Not Clear.

Suppose project invalves writing a Compiler and the development team Never written a Compiler.

In Such Case, Team can Consider a Simple language, try to build a Compiler in order to check the issues.