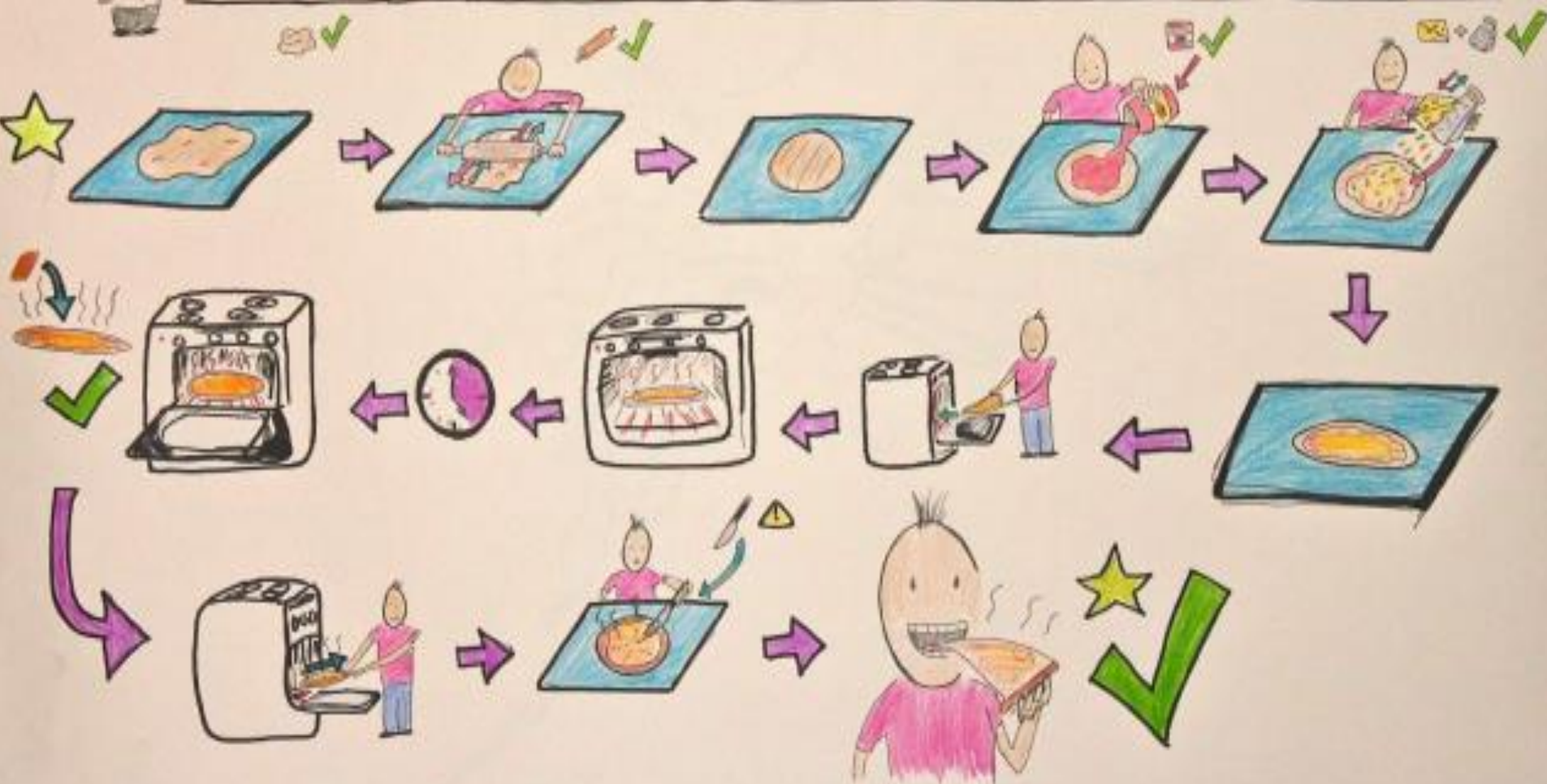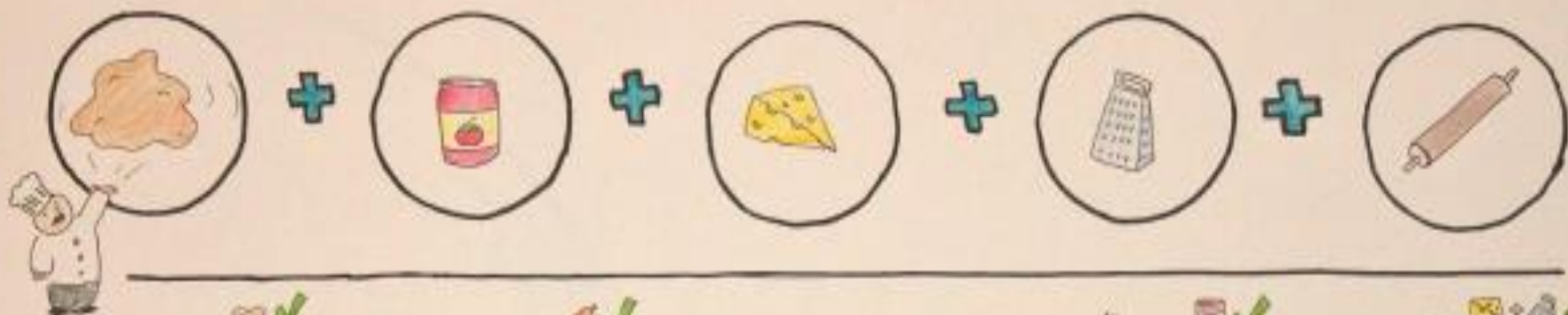# SYSTEM DEVELOPMENT LIFECYCLE
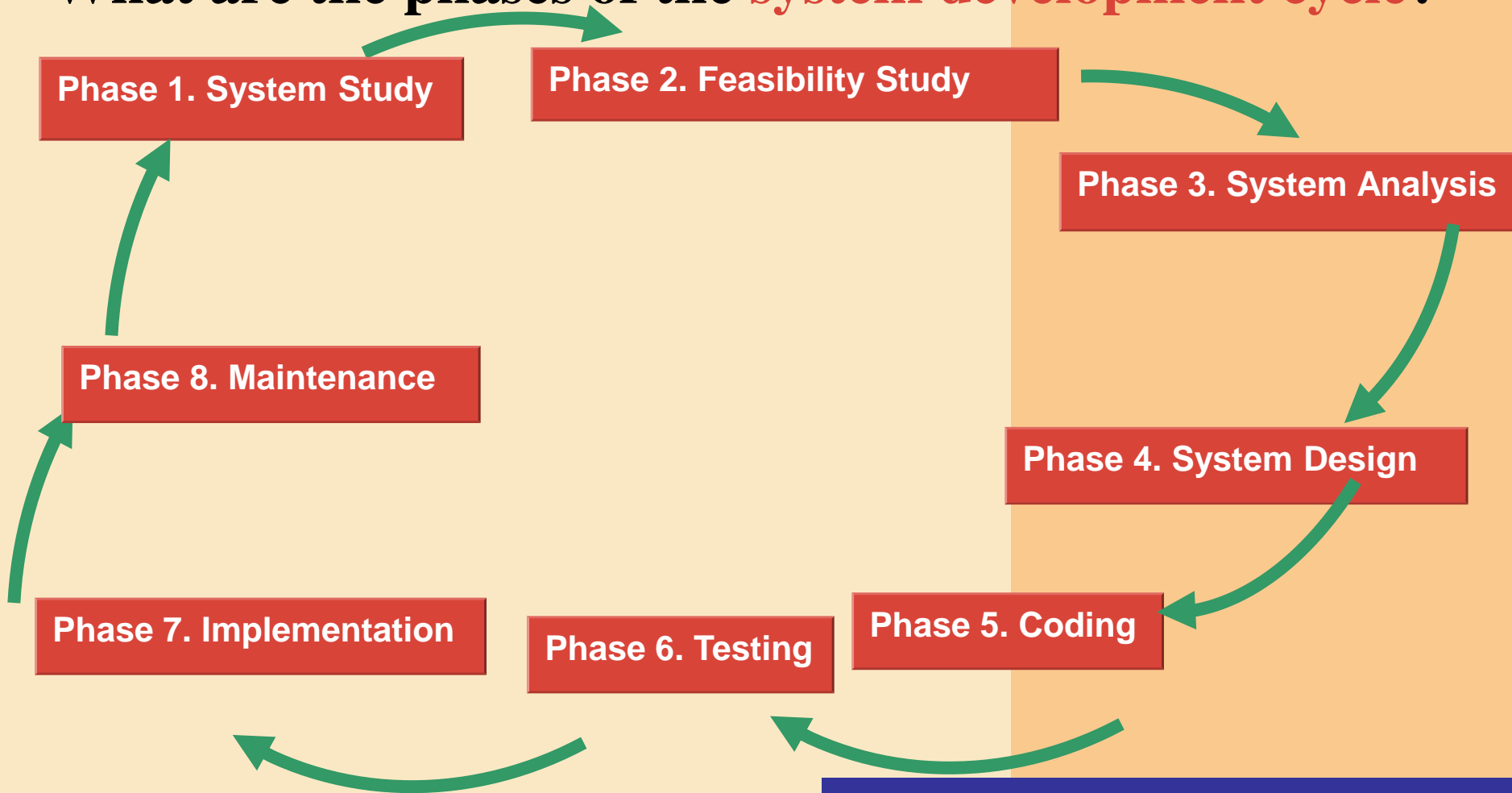
Lecture 2

The System Development Life Cycle

What is an SDLC?

an organized process of developing and maintaining systems.

Combination of various activities

The System Development Life Cycle

What are the phases of the system development cycle?

Phase 1. System Study

Phase 2. Feasibility Study

Phase 3. System Analysis

Phase 4. System Design

Phase 5. Coding

Phase 6. Testing

Phase 7. Implementation

Phase 8. Maintenance

The System Development Life Cycle
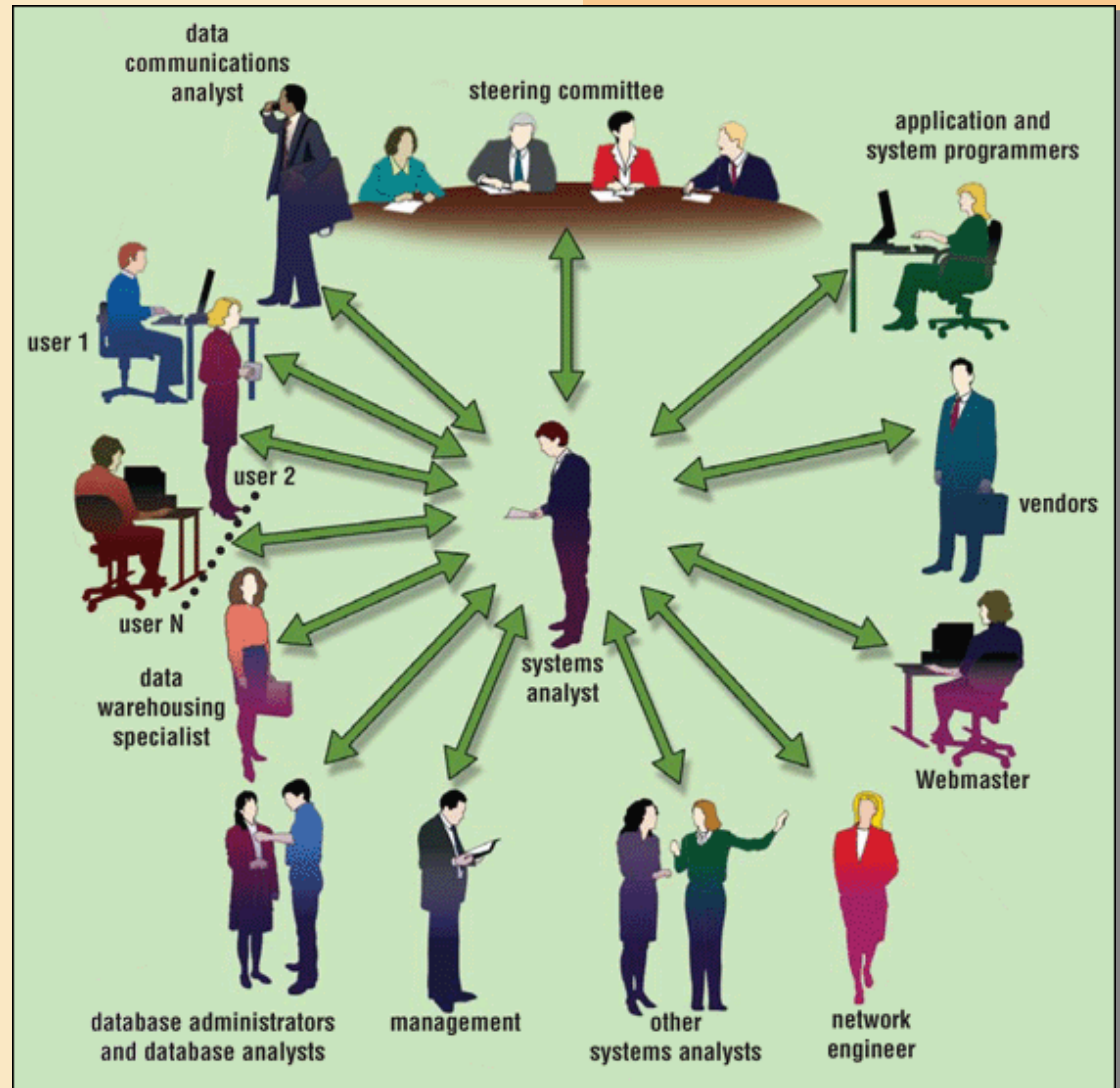
What are guidelines for system development?

Arrange tasks into phases (groups of activities)

Involve users (anyone for whom system is being built)

Develop clearly defined standards (procedures company expects employees to follow)

The System Development Life Cycle

Who participates in the system development life cycle?

The System Development Life Cycle

What is the project team?

Formed to work on project from beginning to end

Consists of users, systems analyst, and other IT professionals

Project leader—one member of the team who manages and controls project budget and schedule

The System Development Life Cycle

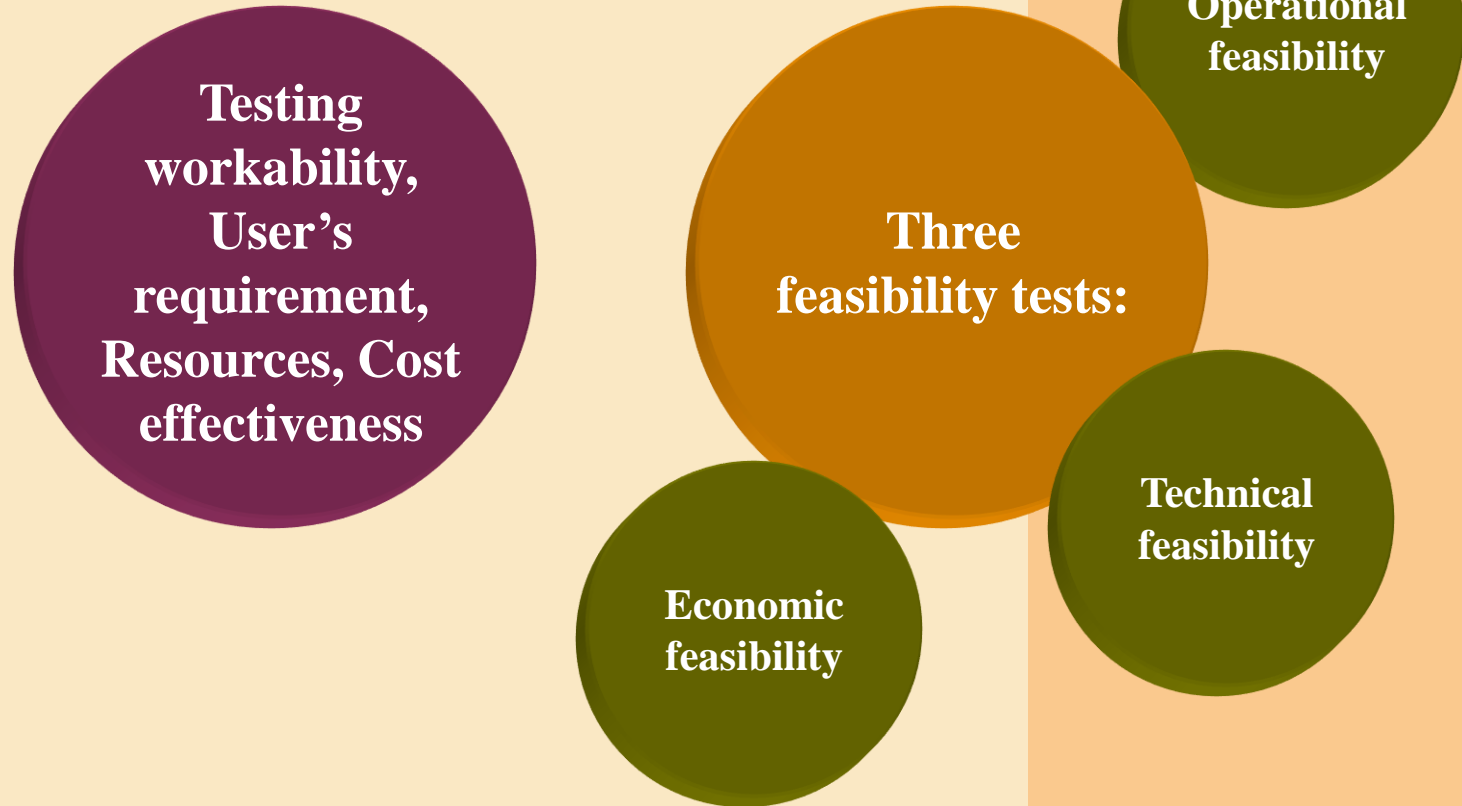**What is a System Study?**

Clear Picture of what actually the physical system is

Two Phases

Scope Identification

Requirement Identification

The System Development Life Cycle

What is **Feasibility**?

Testing workability, User's requirement, Resources, Cost effectiveness

Three feasibility tests:

Operational feasibility

Economic feasibility

Technical feasibility

The System Development Life Cycle

What is System Analysis

Detailed Study of System Operations & its relationship

Current System

Data Collection

Tools of System Analysis

Steps to define boundary

The System Development Life Cycle

What is the Design Phase?

Detailed analysis of a new system.

Major step in moving from problem to solution

Two stages

General Design

Detailed Design

The System Development Life Cycle

What are tools and technique for designing

1. Flow Chart

2. Data Flow Diagram

3. Data Dictionary

4. Structured English

5. Decision Tables

Conditions are inputs

Verifications to perform

Test actions are outputs

Tests to run

Apply for a car insurance

Explore alternatives

Input : decision point questions	1	2	3	4	5	6	7	8
Q1 : Number of accidents > N	Y	Y	Y	N	N	N	N	...
Q2 : Type of car = { ...... }	Y	Y	N	N	Y	Y	N	...
Q3 : Age of the car > M	Y	N	N	N	Y	N	Y	...
Output : test actions	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
-Check message "Refuse to insure" - Return to the main menu	✖	✖	✖					
- Accept to insure - Select standard rate - Check price - Display information				✖				
- Accept to insure - Select special rate - Check price - Display information						✖	✖	✖

The System Development Life Cycle

What is the Code?

Converts Design into code in specific language

Must be modular in nature

Affects testing and maintenance
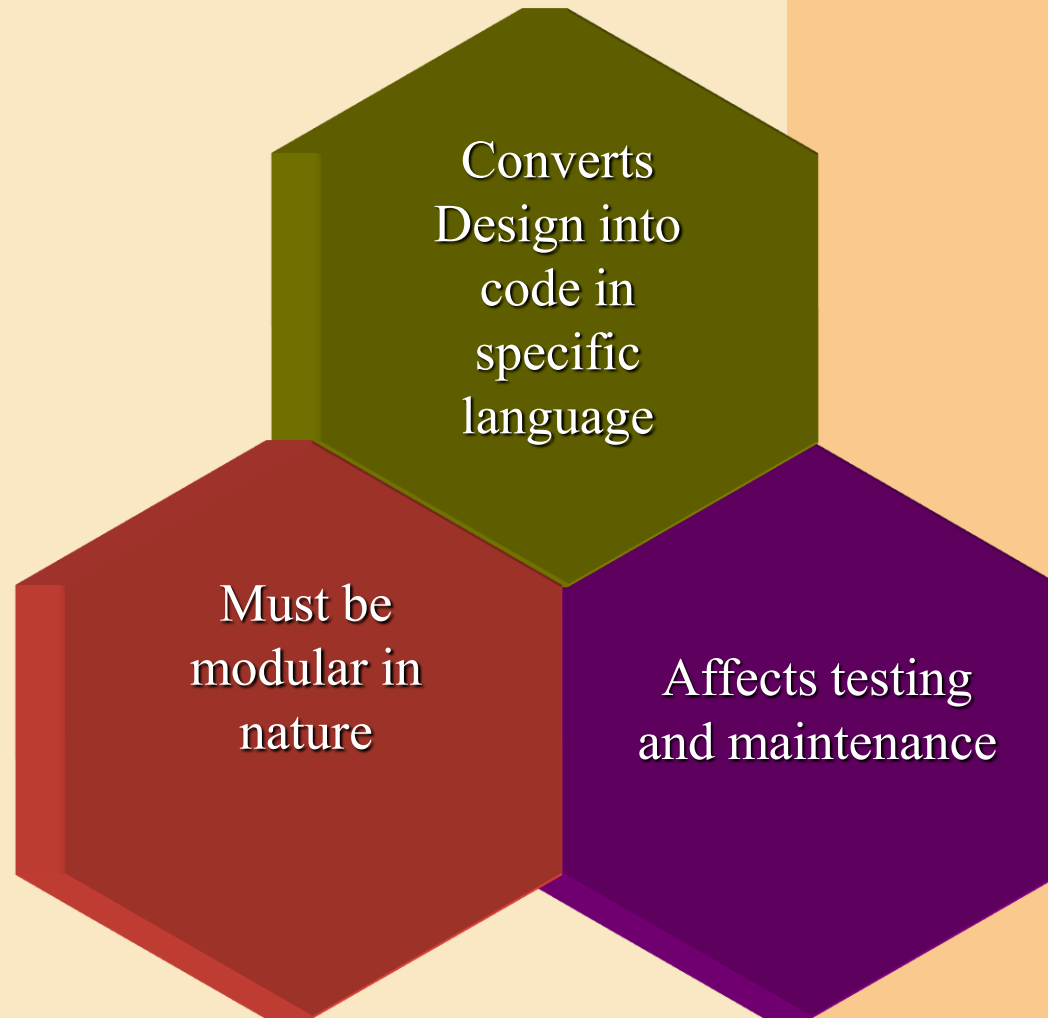
The System Development Life Cycle

What is Testing?

Analyze software for finding bugs.

Test plan is developed and run on given set of test data.

The System Development Life Cycle

What are different test run?

Unit Test

Verifies each individual program works by itself

Systems test

Verifies all programs in application work together

User Acceptance Testing

determines if the system satisfies the basic requirements

Integration Test

Verifies application works with other applications
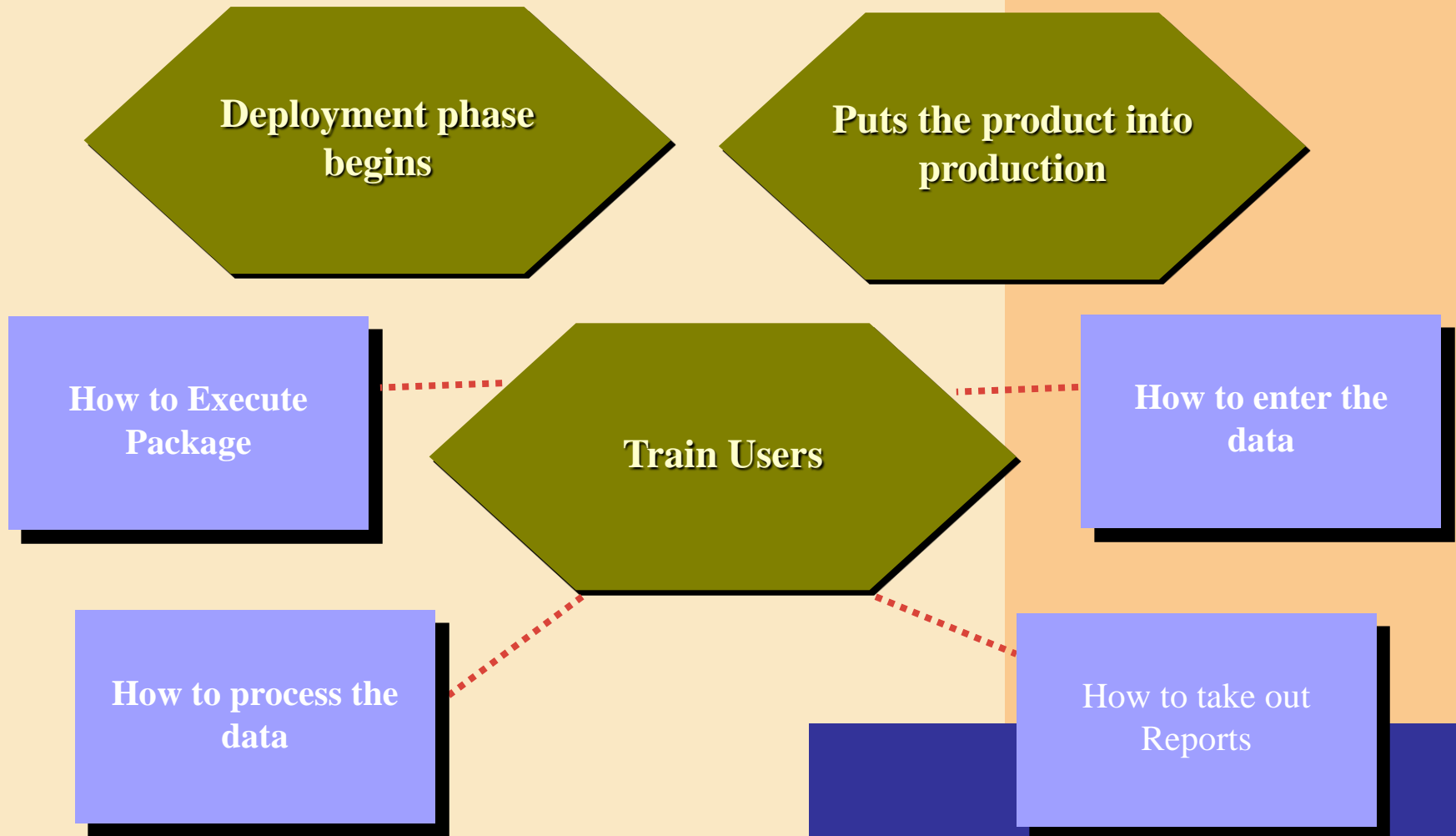
The System Development Life Cycle

What is the implementation?

➢ **Purpose is to construct, or build, new or modified system and then deliver it to users**
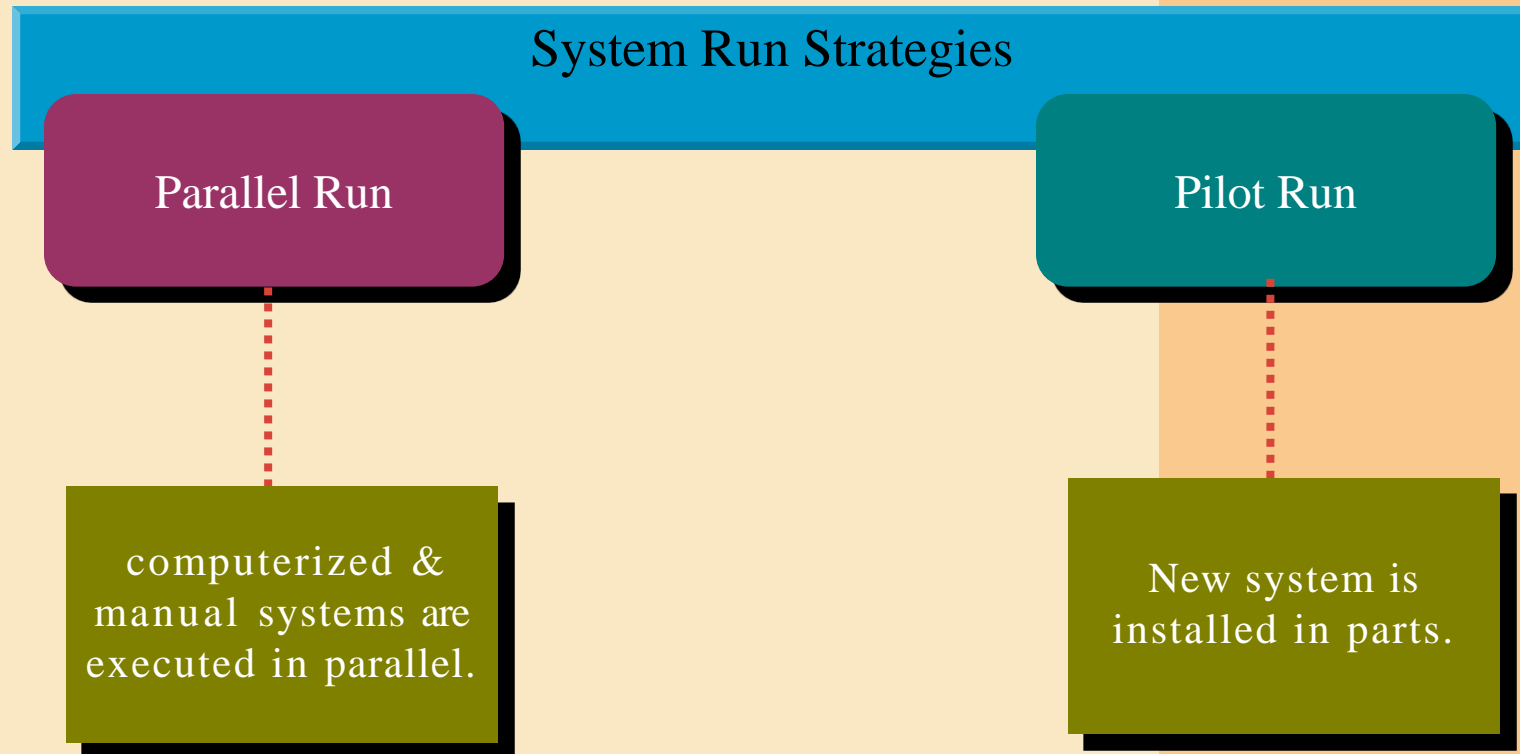
Convert to new system

Train users

Install and test new system

Develop programs

The System Development Life Cycle

What is **Implementation**?

Deployment phase begins

Puts the product into production

How to Execute Package

Train Users

How to enter the data

How to process the data

How to take out Reports

The System Development Life Cycle

What are implementation strategies?

System Run Strategies

Parallel Run

computerized & manual systems are executed in parallel.

Pilot Run

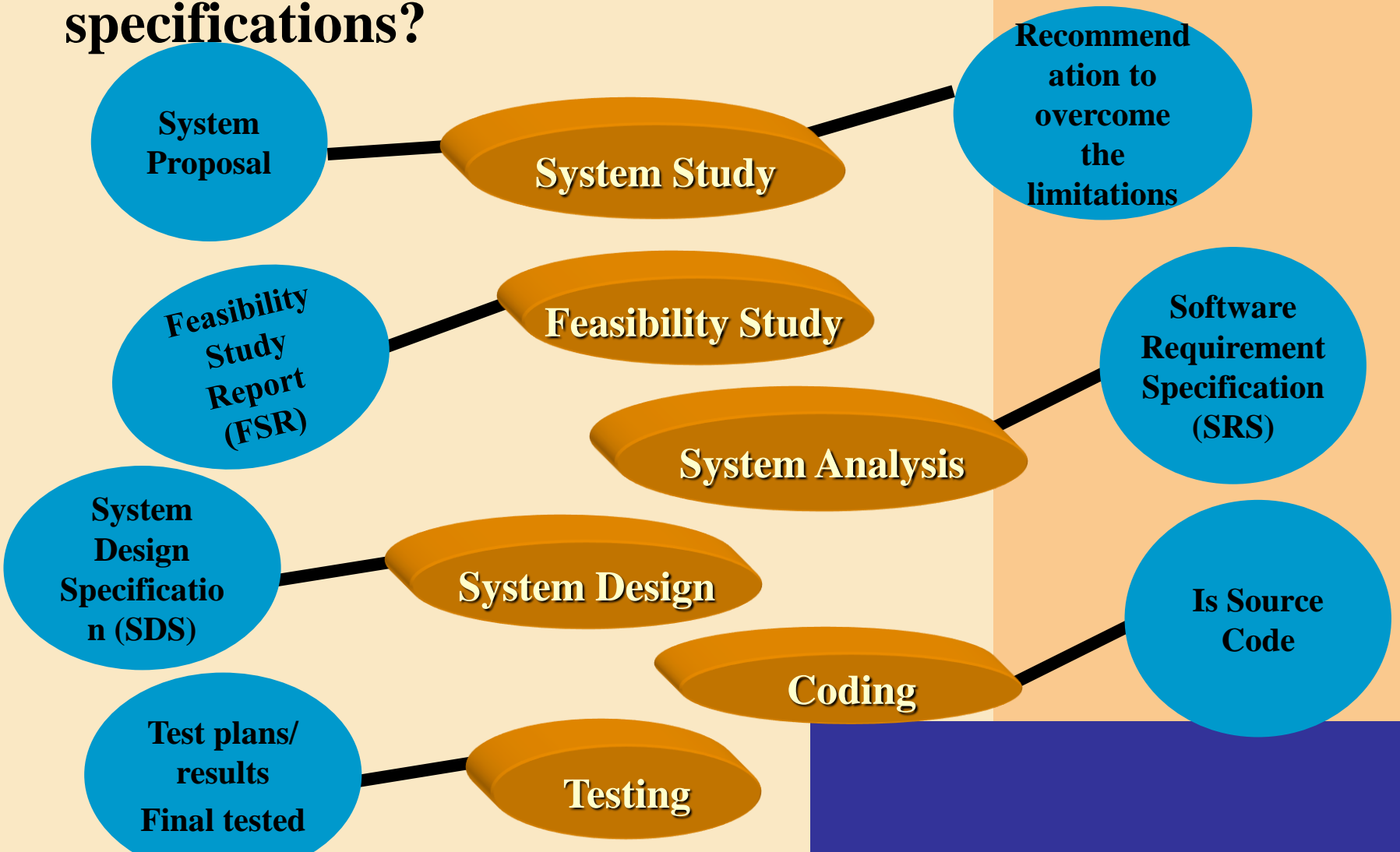New system is installed in parts.

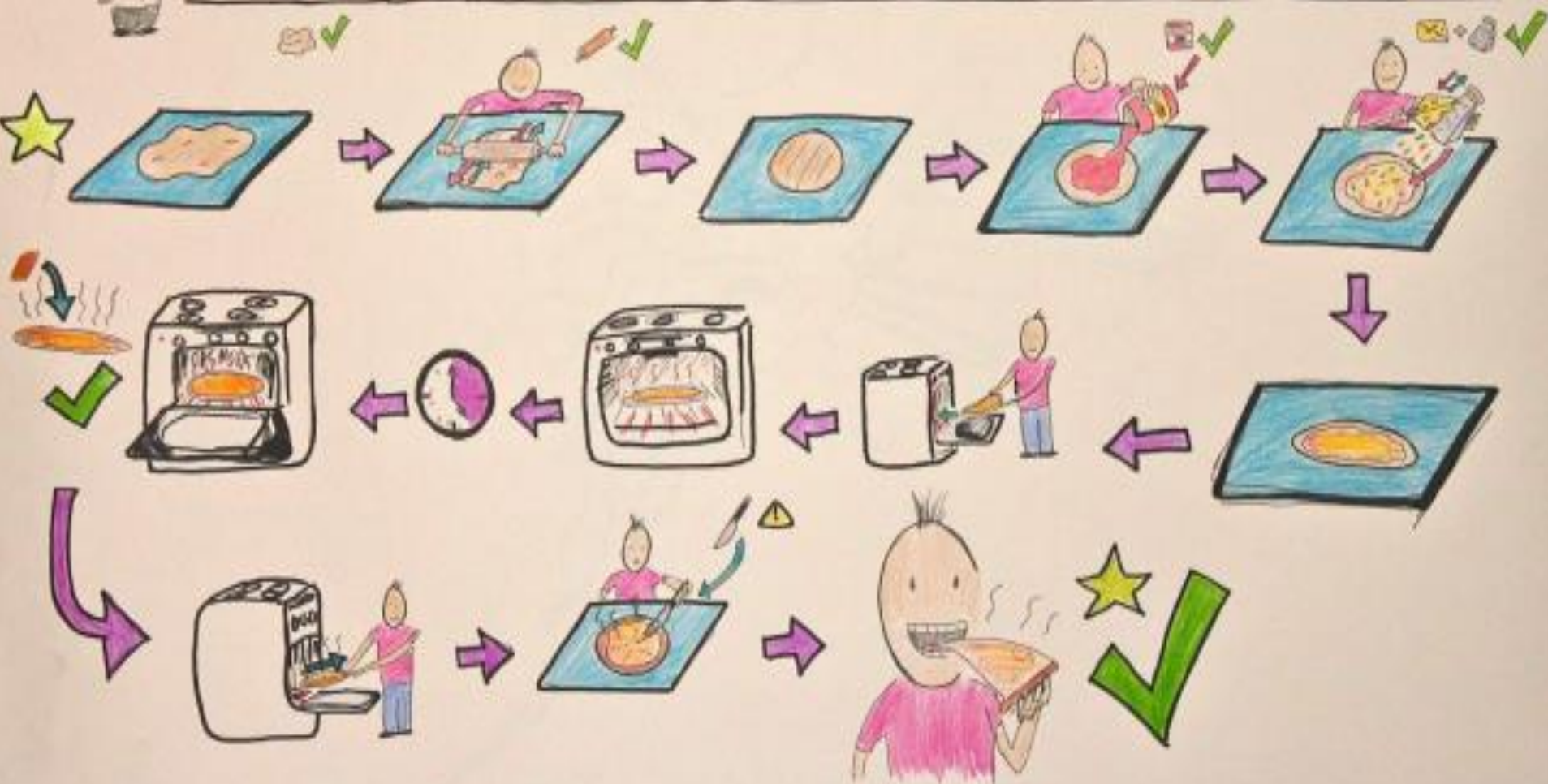# The System Development Life Cycle

What is a Maintenance ?

Eliminate errors in the system during its working life

Tune the system to any validation in its working environment

The System Development Life Cycle

What are the documents used to summarize technical specifications?

- System Proposal
- System Study
- Recommendation to overcome the limitations
- Feasibility Study Report (FSR)
- Feasibility Study
- Software Requirement Specification (SRS)
- System Analysis
- System Design Specification (SDS)
- System Design
- Is Source Code
- Coding
- Test plans/ results Final tested
- Testing

Home Work

The System Development Life Cycle

What are System Environments?

☐ **Development**

☐ **Test**

☐ **Staging**

☐ **Pre-Production**

☐ **Production**

☐ **Mirror**