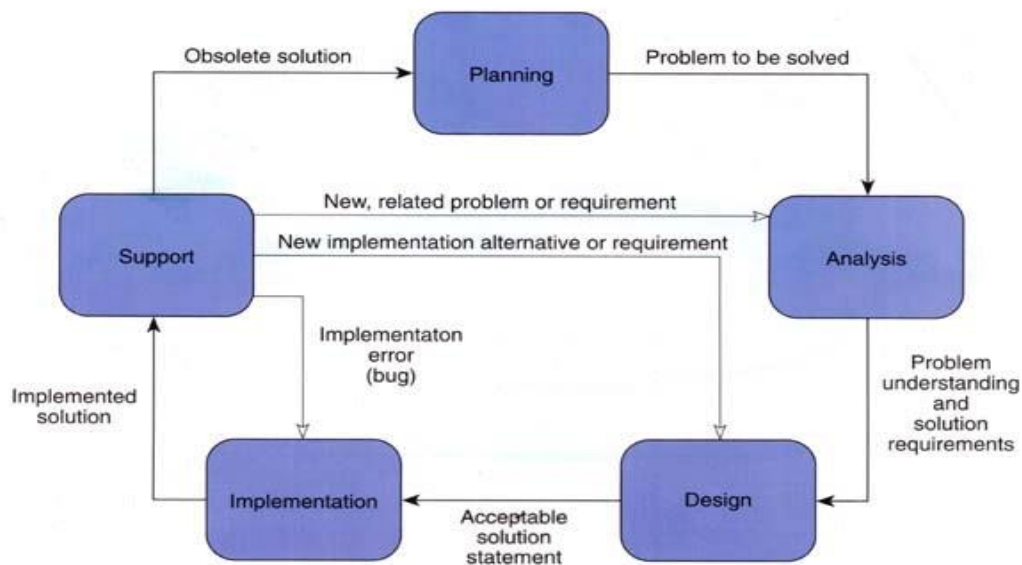


Systems Development Life Cycles:

- The **systems development life cycle** (SDLC) is a general term used to describe the method and process of developing a new information system
- Without the structure and organization provided by SDLC approach projects are at **risk** for missed deadline, low quality etc
- SDLC provides
 - ⇒ SDLC provides
 - Structure
 - Methods
 - Controls
 - Checklist

A Systems Development Life Cycle

This diagram depicts the typical phases or activities that a systems analyst uses to solve problems.



Or, Determine how solve the problem

Systems Investigation and Planning

- Problems and opportunities are identified
- The project planning phase includes **five activities**:
 - ⇒ Define the problem.
 - ⇒ Confirm project feasibility.
 - ⇒ Produce the project schedule.
 - ⇒ Staff the project.
 - ⇒ Launch the project.

Systems Analysis

- Existing systems and work processes are studied
- The analysis phase includes **six activities**:
 - ⇒ Gather information (e.g. interview, read, observe etc.)
 - ⇒ Define system requirements (reports, diagrams etc.)
 - ⇒ Build prototypes for discovery of requirements
 - ⇒ Prioritize requirements
 - ⇒ Generate and evaluate alternative solutions
 - ⇒ Review recommendations with management

Systems Design

- Defines how the information system will do what it must do to solve the problem.
- The design phase includes **seven activities**:
 - ⇒ Design and integrate the network
 - ⇒ Design the application network
 - ⇒ Design the user interfaces
 - ⇒ Design the system interfaces
 - ⇒ Design and integrate the database
 - ⇒ Prototype for design details
 - ⇒ Design and integrate the system controls

Systems Implementation

- System components are assembled and the new or modified system is placed into operation.
- The implementation phase includes **six activities**:
 - ⇒ Construct software components
 - ⇒ Verify and test
 - ⇒ Develop prototypes for tuning
 - ⇒ Convert data
 - ⇒ Train and document

Systems Maintenance and Review

- Ensures the system operates and is modified to keep up with business changes.
- The support phase includes **two**

activities: Provide support to **end users**

⇒ Help desks

⇒ Training

programs Maintain and enhance

the computer system

- ⇒ Simple program error correction
- ⇒ Make sure that the system operates as expected
- ⇒ Modify functionalities that are not working properly

In “classical” life cycle these phases are sequential, but there are variations

When to Use SDLC

- ® Systems have been developed and documented using SLDC
- ® It is important to document each step
- ® Upper level management feels more comfortable or safe using SDLC
- ® There are adequate resources and time to complete the full SDLC
- ® Communication of how new systems work is important

When to Use Agile

- ® There is a project champion of agile methods in the organization
- ® Applications need to be developed quickly in response to a dynamic environment
- ® A rescue takes place (the system failed and there is no time to figure out what went wrong)
- ® The customer is satisfied with incremental improvements
- ® Executives and analysts agree with the principles of agile methodologies

When to Use Object-Oriented

- ® The problems modeled lend themselves to classes
- ® An organization supports the UML learning
- ® Systems can be added gradually, one subsystem at a time
- ® Reuse of previously written software is a possibility
- ® It is acceptable to tackle the difficult problems first