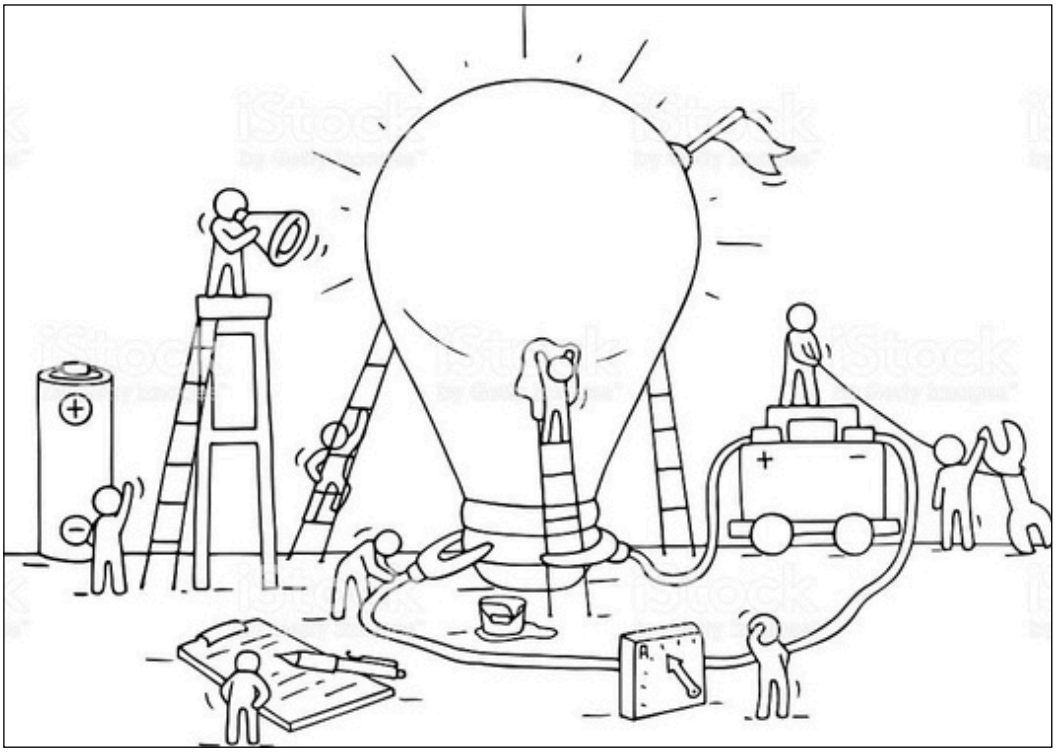
# Software Project Management

## Case Studies

### 1. Student Information System - Prototyping



Prototyping is defined as the process of developing a working replication of a product or system that has to be engineered. It offers a small scale facsimile of the end product and is used for obtaining customer feedback.

Types of prototyping:-

1. Rapid Throwaway Prototyping
2. Evolutionary Prototyping
3. Incremental Prototyping
4. Extreme Prototyping

1. Rapid Throwaway:-

This technique offers a useful method of exploring ideas and getting customer feedback for each of them. In this method, a developed prototype need not necessarily be a part of the ultimately accepted prototype. Customer feedback helps in preventing unnecessary design faults and hence, the final prototype developed is of better quality.

2. Evolutionary :-

In this method, the prototype developed initially is incrementally refined on the basis of customer feedback till it finally gets accepted. In comparison to Rapid Throwaway Prototyping, it offers a better approach which saves time as well as effort. This is because developing a prototype from scratch for every iteration of the process can sometimes be very frustrating for the developers.

3. Incremental :-

In this type of incremental Prototyping, the final expected product is broken into different small pieces of prototypes and being developed individually. In the end, when all individual pieces are properly developed, then the different prototypes are collectively merged into a single final product in their predefined order. It's a very efficient approach which reduces the complexity of the development process, where the goal is divided into sub-parts and each sub-part is developed individually.

The time interval between the project begin and final delivery is substantially reduced because all parts of the system are prototyped and tested simultaneously.

4. Extreme :-

This method is mainly used for web development. It is consists of three sequential independent phases:

a. In this phase a basic prototype with all the existing static pages are presented in the HTML format.

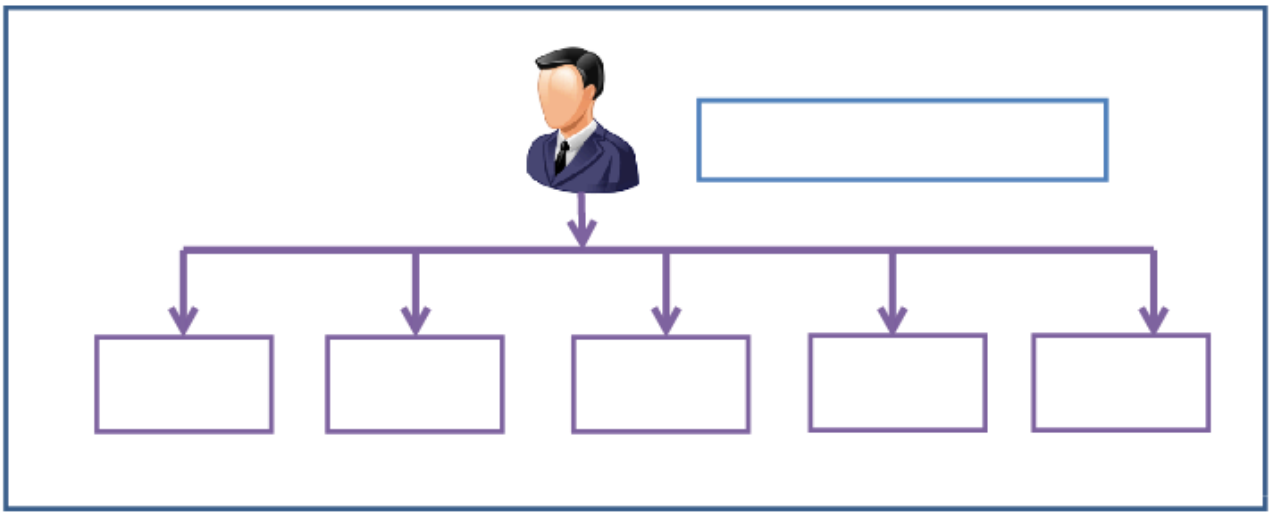
b. In the 2nd phase, Functional screens are made with a simulate data process using a prototype services layer.

c. This is the final step where all the services are implemented and associated with the final prototype.

## Student Information System

The objective of **Student information System** is to allow the administrator of any organization to edit and find out the personal details of a student and allows the student to keep up to date his profile .It'll also facilitate keeping all the records of students, such as their id, name, mailing address, phone number, DOB etc. So all the information about the student will be available in a few seconds.

**Service Diagram**



Considering the Student Information System to be web based, the best type of prototyping that can be used to achieve maximum efficiency is extreme prototyping.

Design:-

- Client-server architecture must be employed in the design.
- The application should be installed in the server.
- A firewall is installed on server to enhance the security of the application.
- A user can log-on to the system and request for service through a web browser.
- The client system can be connected to the server through a local area network or via the Internet.
- Any computer system can be used as a client, whether a P.C or a laptop.
- It is therefore possible that students can do their registration from any location and lecturers and administrators can work in the office or from home.

Extreme prototyping allows the developer to prepare a static web page which can be evaluated for user friendliness by the users(students and teachers). Which is then followed by functionality check that verifies the correctness of the System. Finally all firewalls and server side services are implemented.

## 2. Customer Survey Questionnaire

Your organisation produces general purpose software products and sells to various outfits for use. You have been asked by your management to conduct a customer survey on the products sold. In preparing for the survey, you have found that there are 12 software products developed and sold to 150 customers. A help desk is available to assist customers during 9:00 A.M to 6 P.M. on weekdays. The help desk gets on an average 30 calls per day. The help desk informs that most of the calls relates to insufficient documentation and operational problems. Based on the above, prepare a Customer Survey Questionnaire.

Solution :-

1. Which product are you using ?

2. Which of the following words would you use to describe our product?
    a. Buggy
    b. Fine, but there are some issues
    c. Great
    d. Life-saving

3. Can you please explain your choice?

4. How well does our product meet your needs?

5. Which 3 features are the most valuable to you?
    a. Custom responses
    b. Custom integrations
    c. Design
    d. Great html code
    e. Easy navigation

6. If you could change just one thing about our product, what would it be?

7. What problem would you like to solve with our product?

8. How would you rate the value for money of the product?

9. How easy is it to navigate our website?

10. Were you able to find the information you were looking for on our website?

11. How much effort did you personally have to put forth to handle your request?

12. How did this effort compare to your expectations?

13. How responsive have we been to your questions or concerns about our products?

14. To what extent do you agree with the following statement: The company made it easy for me to handle my issue.

15. Compared to our competitors, is our product quality better, worse, or about the same?

16. Why did you choose our product rather than a competitor's?

17. On a scale from 0 to 10, how likely are you to recommend our company to a friend or colleague?

18. What else would you like us to know?

19. How could we improve our product to better meet your needs ?

20. What would you like us to further add in our documentation ?

21. Anything specify you would like us to rectify right now ?