Intelligent Notice Board

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Aim:

To improve and install an Electronic Notice Display system.

Utility:

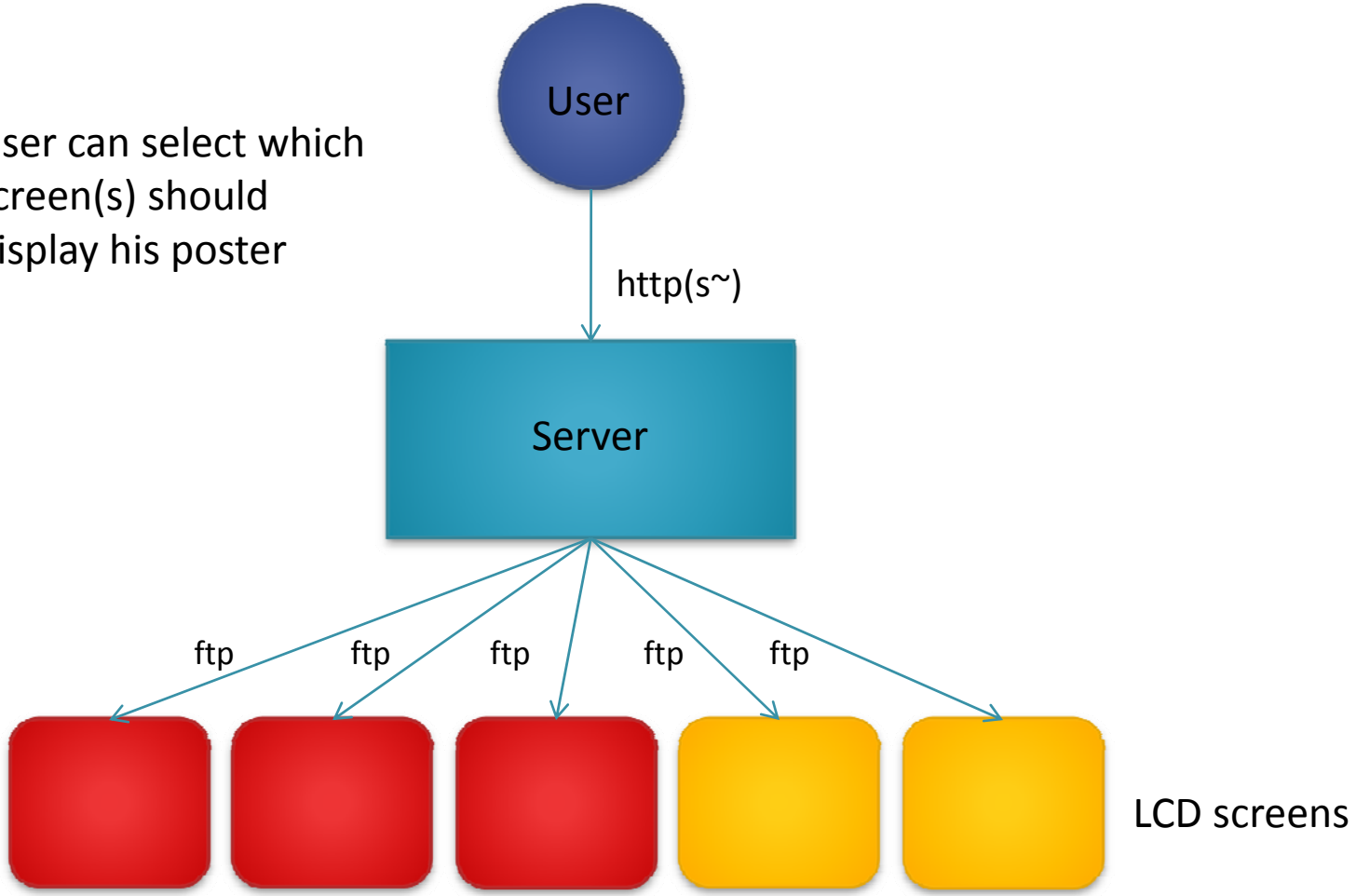
- ✓Centrally controlled
- ✓Real time updating
- ✓Web-based interface
- ✓Relevant locations
- ✓Avoids unnecessary posters on display

SERVER

Basic Overview

Basic design

User can select which screen(s) should display his poster



Specifications (Client)

- **Provision of different screen layouts to support varying needs**

  Till now there has been provided only a single layout, which is a very rigid approach, because same layout is not required at every place. E.g. the hostel screens may not require Tickers. So each client will be provided with sample layouts for display which can be changed if and when needed but only by administrator.

- **Improving quality of display**

  We will be aiming at the improvement of image display so that the images change smoothly as they are not doing now.

- **Displaying text directly on the screen**

  Till now in Tickers and sidetapes, the user enters the text and an image is formed which is displayed. In this process a lot of bandwidth is wasted as images are heavier than text. So our goal will be to directly upload the text instead of first forming an image.

Specifications (Client)

- **Modularity and robustness in the code**

  The current code modules are not fully robust as sometimes some problems crop up. So the emphasis will be on handling those problems.

- **Integration with 3G for communication**

  At many places there are no wired or WiFi networks available, whereas the 3G networks can be availed at any place and without much fuss. Thus we will be trying our hands at integrating the hardware with the new 3G technology for communication.

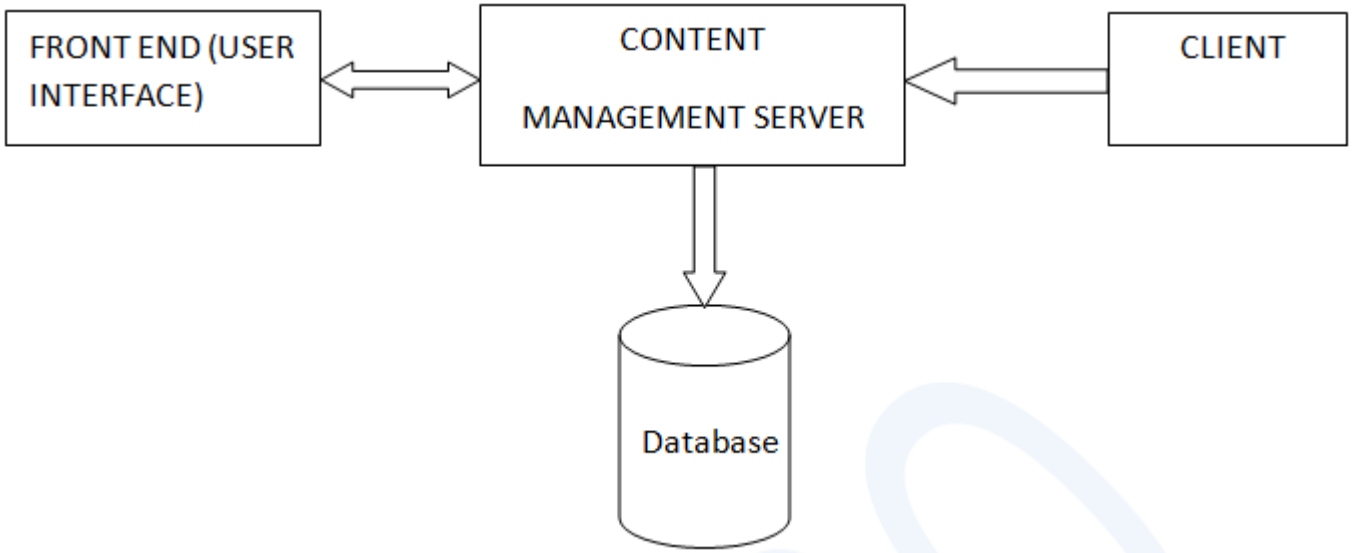
- **Video support**

  We would also try to integrate video input in the system

- **Development of new custom hardware (PCB)**

  Till now we have been working on DM355. The available hardwares contain some redundant devices which we do not require but they add up to the cost, e.g. audio codec. So making our own custom hardware will be a major goal of the whole process.

BASIC SERVER SIDE BLOCK DIAGRAM



Specifications (Server)

- Authentication using LDAP
  Lightweight Directory Access Protocol
- Content Moderation.
- New User Interface which handles and improves all the previous shortcomings
- Status of screen – board functioning.
- Poster making software on website.
- Creating more administrative options like control over user privileges and Screen layout.
- Controlling poster sequence
- Scalability

MVC - MODEL

The Server Side will essentially be based on the **MVC (MODEL – VIEW – CONTROLLER)** software architecture pattern.

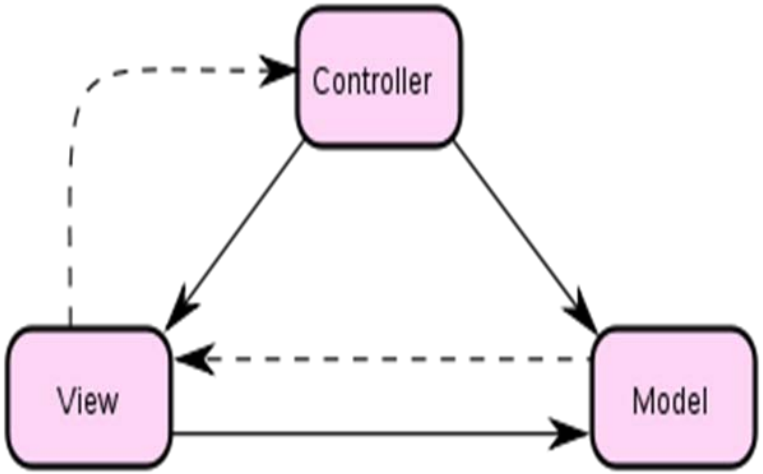
This pattern isolates "domain logic" (the application logic for the user) from input and presentation (UI), permitting independent development, testing and maintenance of each.

The **model** is used to manage information (Data) and notify observers when that information changes.

The **view** renders the model into a form suitable for interaction, typically a user interface element.

The **controller** receives input and initiates a response by making calls on model objects.

BASIC BLOCK DIAGRAM FOR MVC MODEL



Resource :- Wikipedia

- **MODEL**

DATA Content Management Server will Manage

- Posters
- Videos
- Text/RSS

a) Ticker Tape

b) Side Tape

- Information About Client Screen
- Users

INFORMATION TO BE STORED FOR POSTERS/TICKER/SIDETAPE/VIDEOS

- Path the file to be uploaded or text in case of ticker and sidetape.
- User Reference
- Date Uploaded
- Start Date
- End Date
- Precedence / Order of posters
- Display Time
- Date of Event
- Client Screens on which poster/ticker/sidetape are to be displayed
- Description/Title

- **VIEW**
- User Interface (UI)
- Administrator Interface
- Poster Making Interface
- **CONTROLLERS**
- File Handler
- Login Control (Authentication and Moderation with LDAP)
- Poster Making
- RSS update
- Status Controllers

USE CASE DIAGRAM

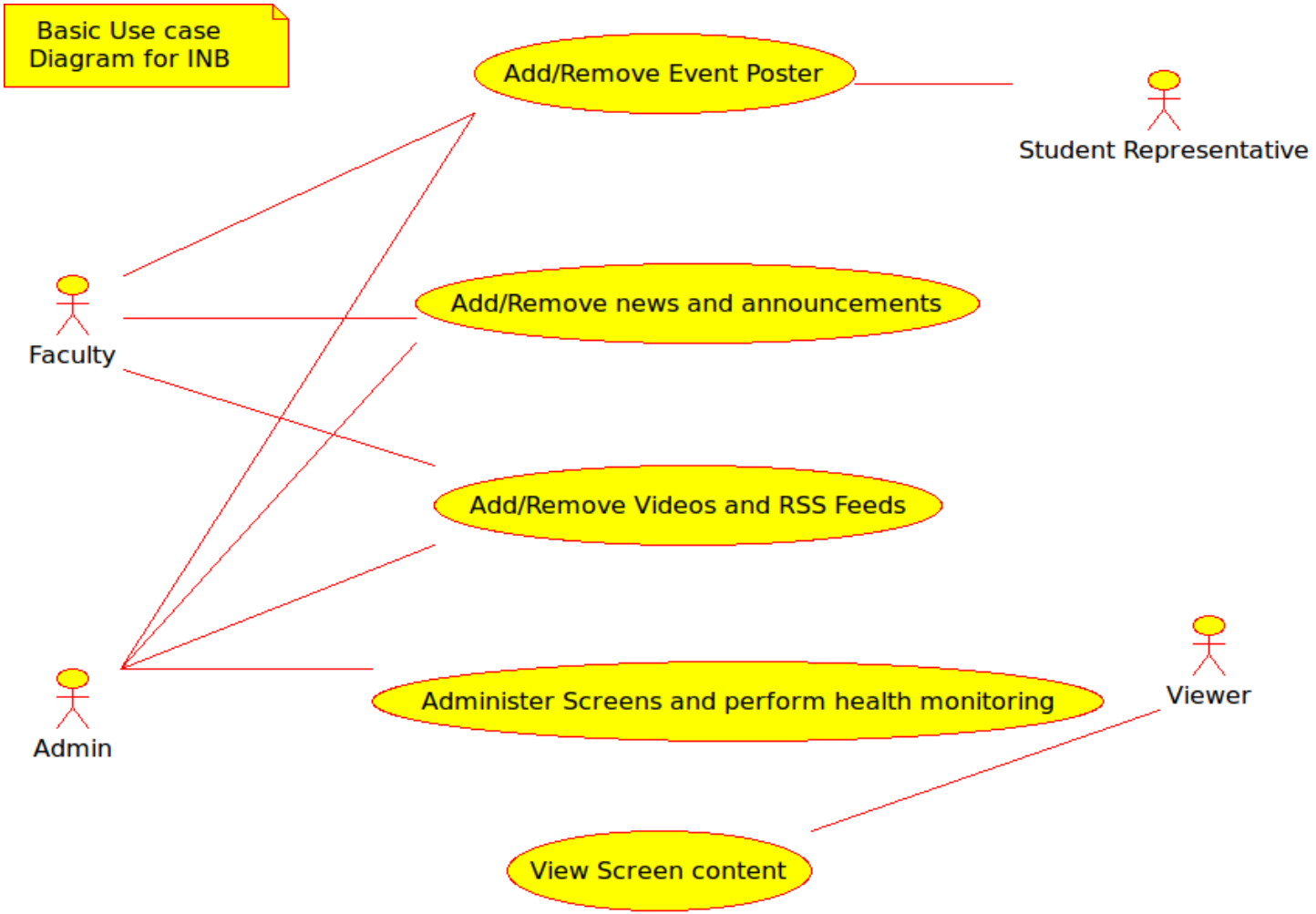
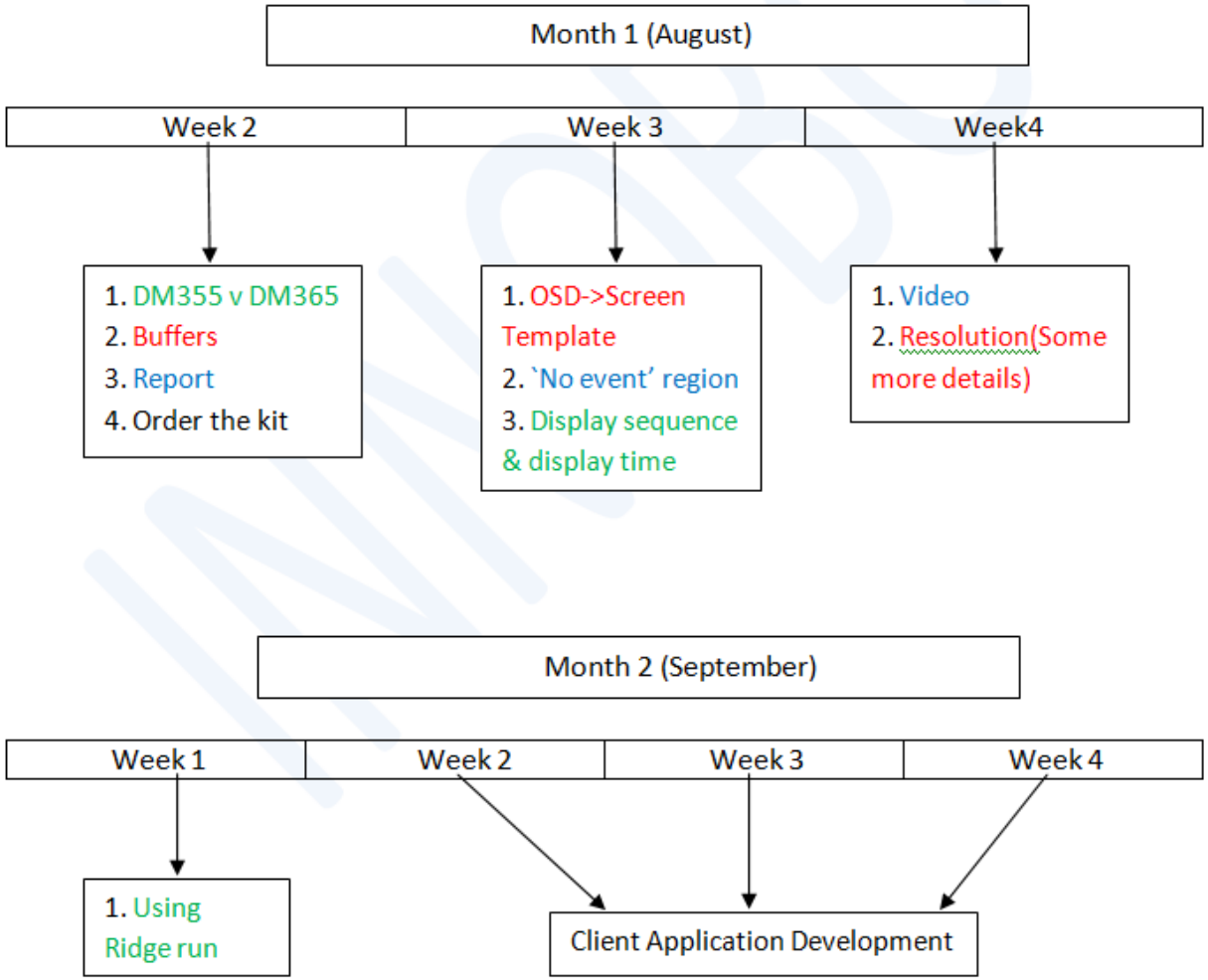


Fig 1: Use Case Diagram

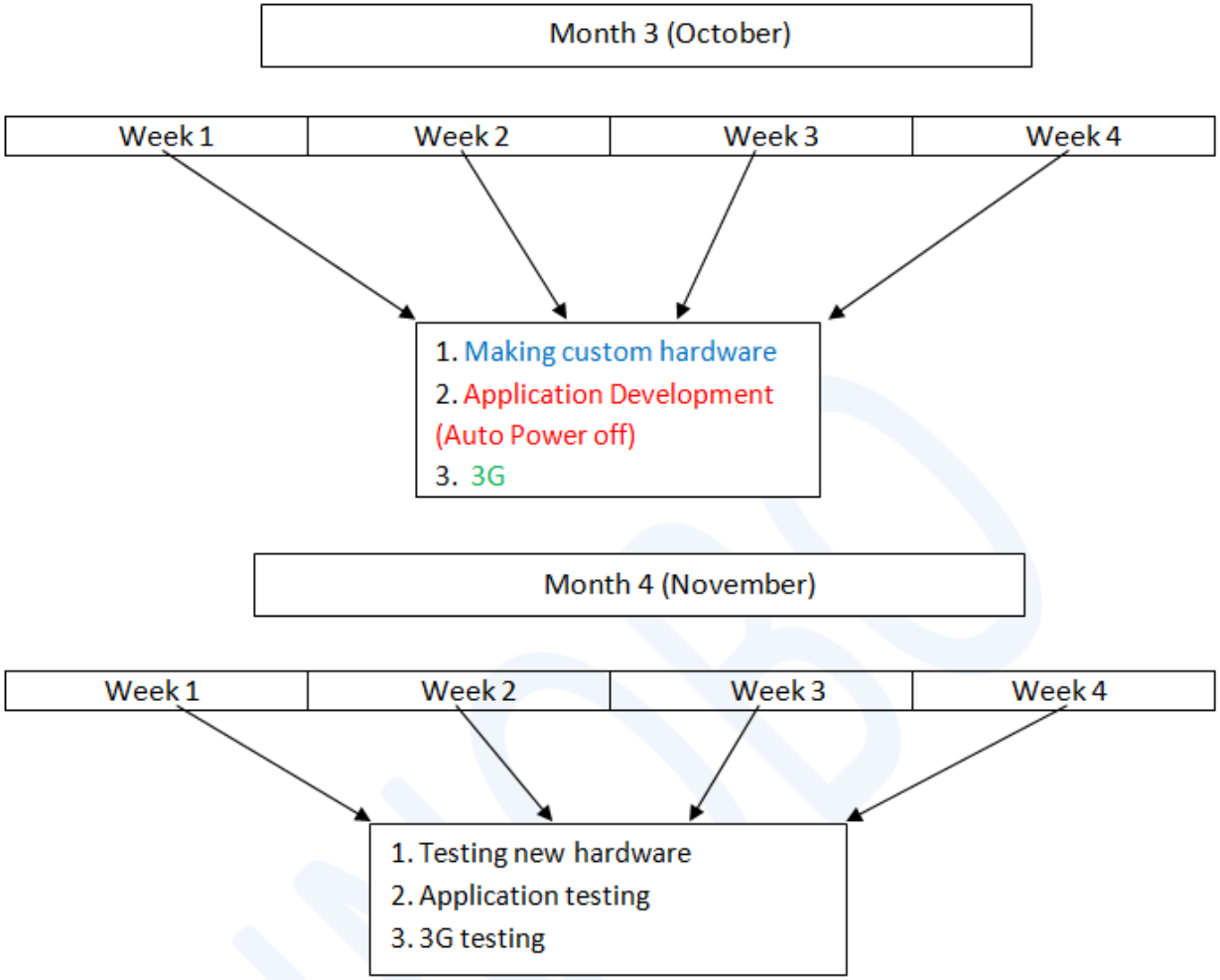
Major Components/Kits

- Shift from Leopard Board 355 to Leopard Board 365 based on TMS320DM365 processor to achieve better display of posters and support video
- LCD Screen
- SD Card
- Component to support connection with server via 3G

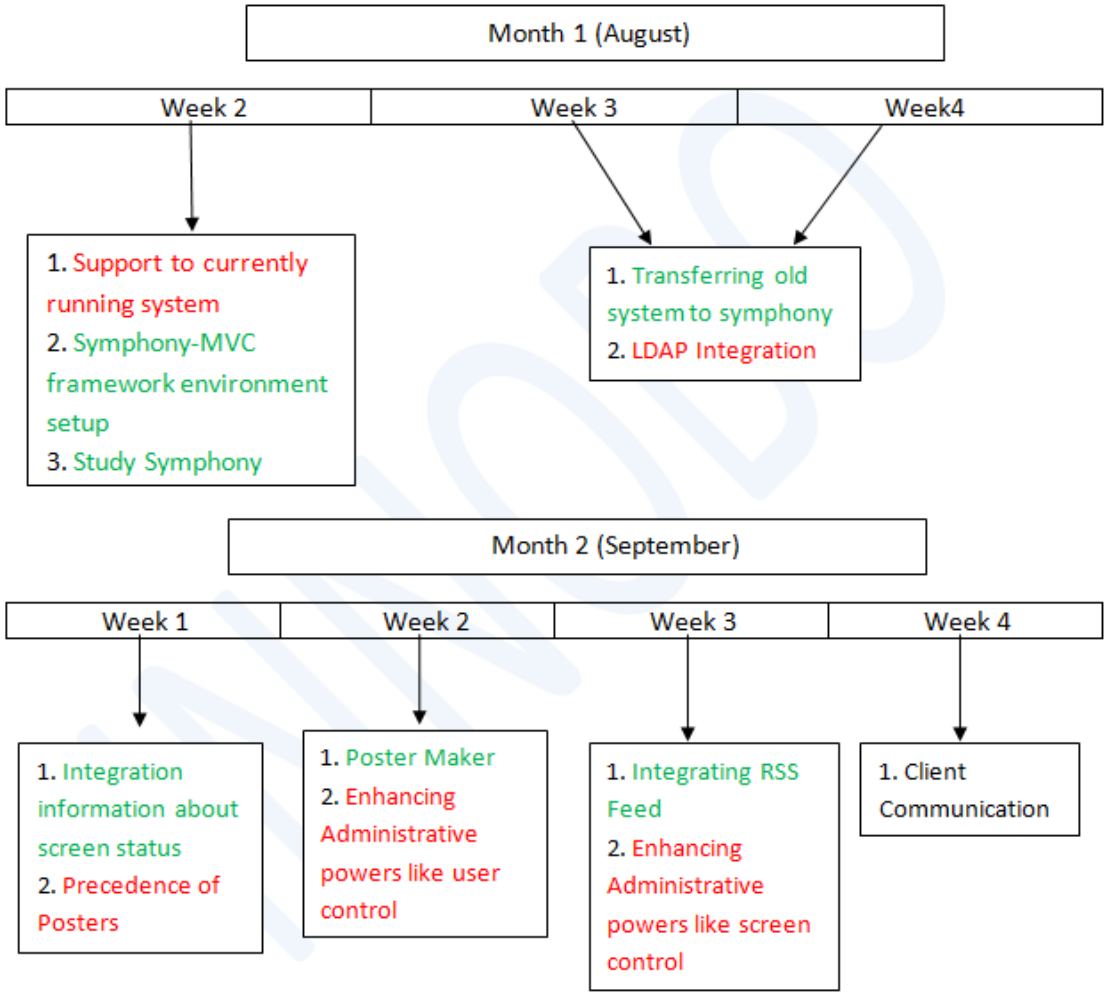
Time Line (Client)



Time Line (Client)



Time Line (Server)



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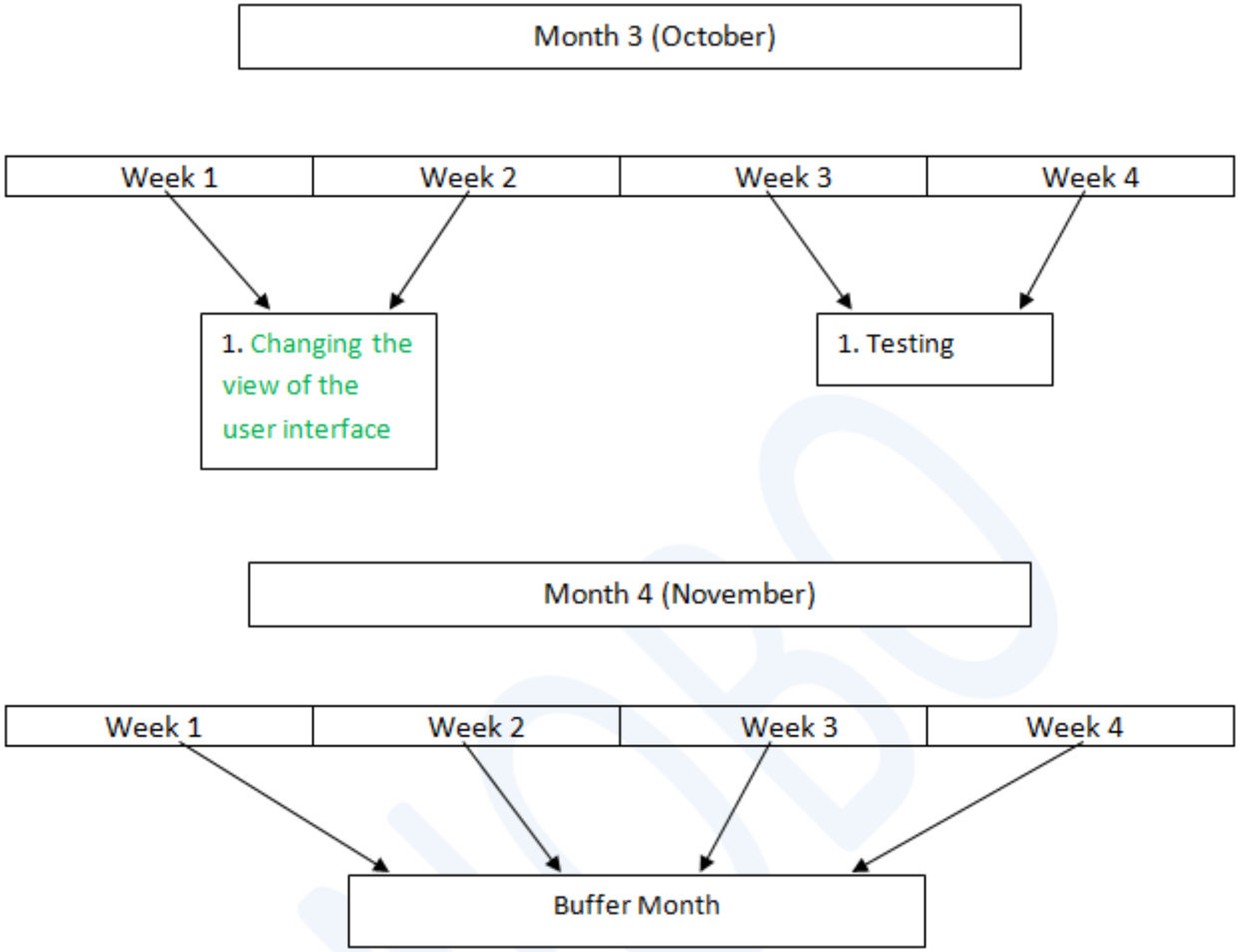

Web link of the project

https://sites.google.com/site/innoboextend/

Thank You