Prisma : For Professional Team Work

Software Engineering Project

Group-16
Pragya Agrawal(2019BCS-040)
Richa Gupta(2019BCS-047)
Sriya Chettebhaktula(2019BCS-063)
Krishna Gandhi(2019BCS-079)

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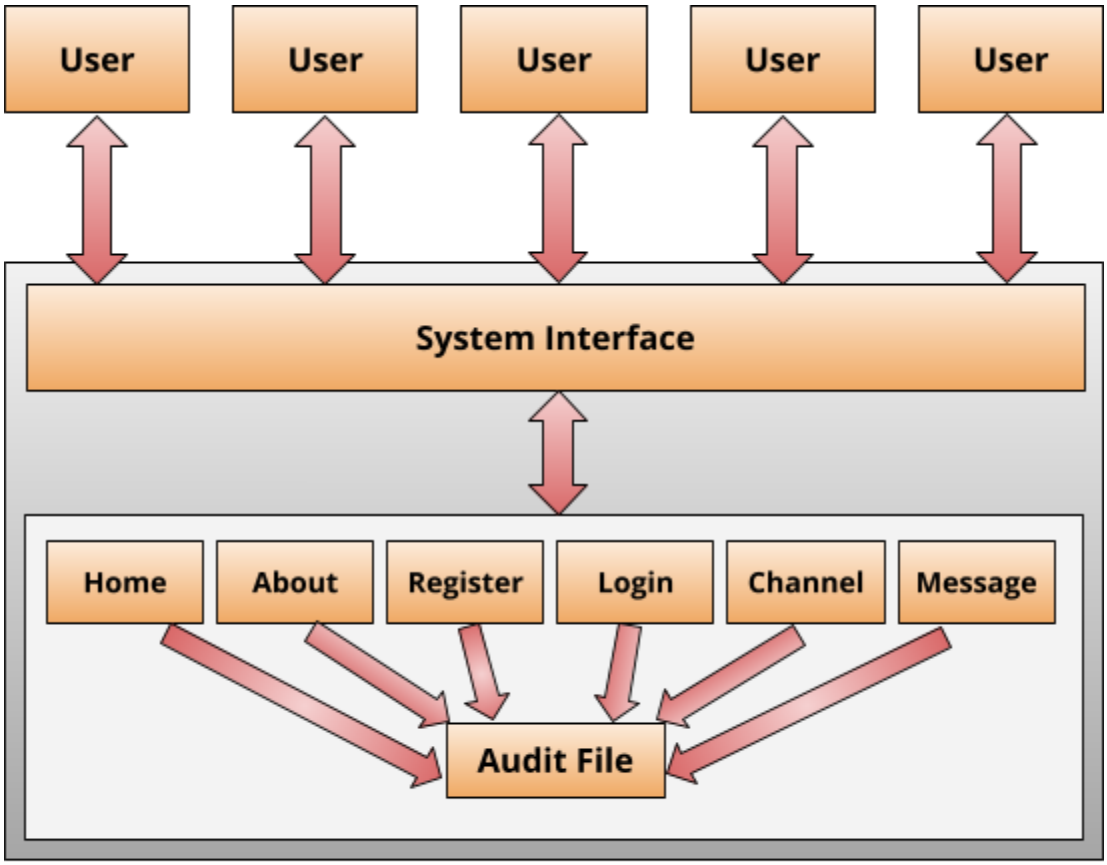
1. Architecture

1.1 System Design

System design provides a design plan that describes the elements of a system, how they fit, and work together to fulfill the requirement of the system. It is a conceptual representation of the components and subcomponents that reflects the behaviour of a system.

A system context diagram (SCD) defines the boundary between the system, or part of a system, and its environment, showing the entities that interact with it.



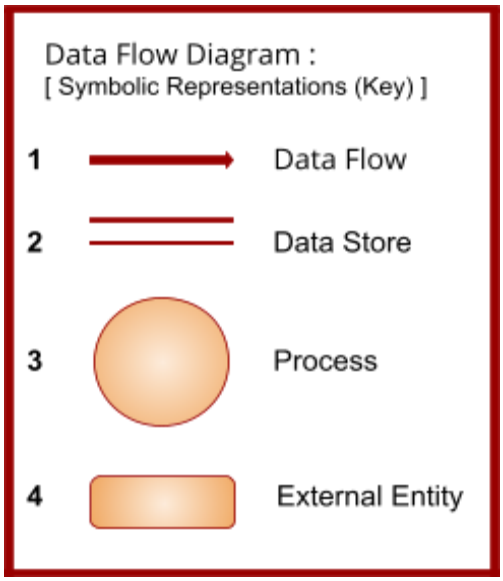
Context Diagram

The context diagram shows the main actors interacting with the system.

The above is the context diagram from UUIS [Unified University Inventory System]

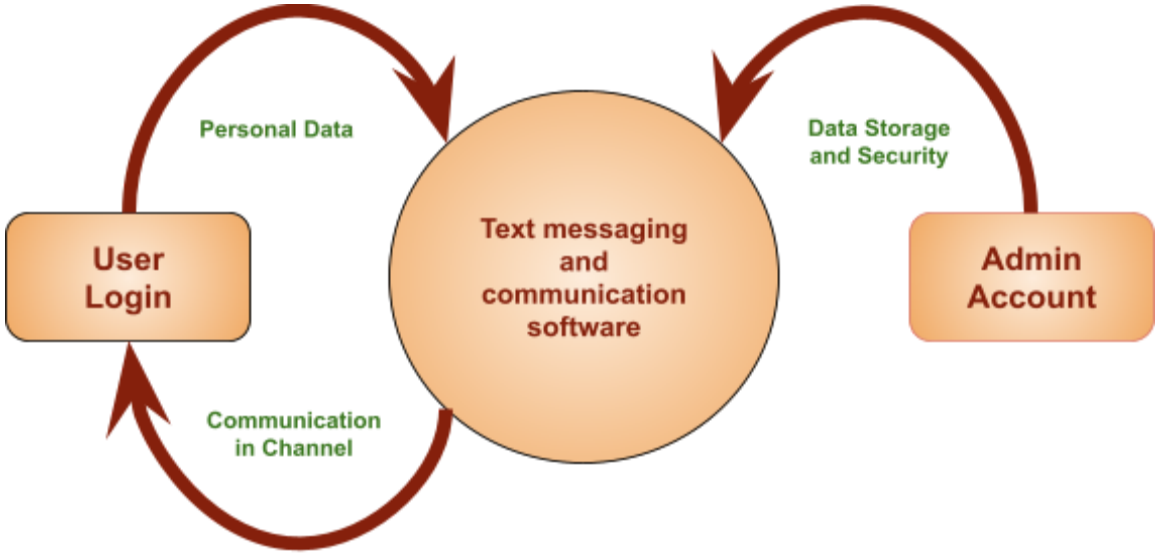
2. Data Design

2.1 Data Flow Diagram-



2.1.1. Level 0 DFD :

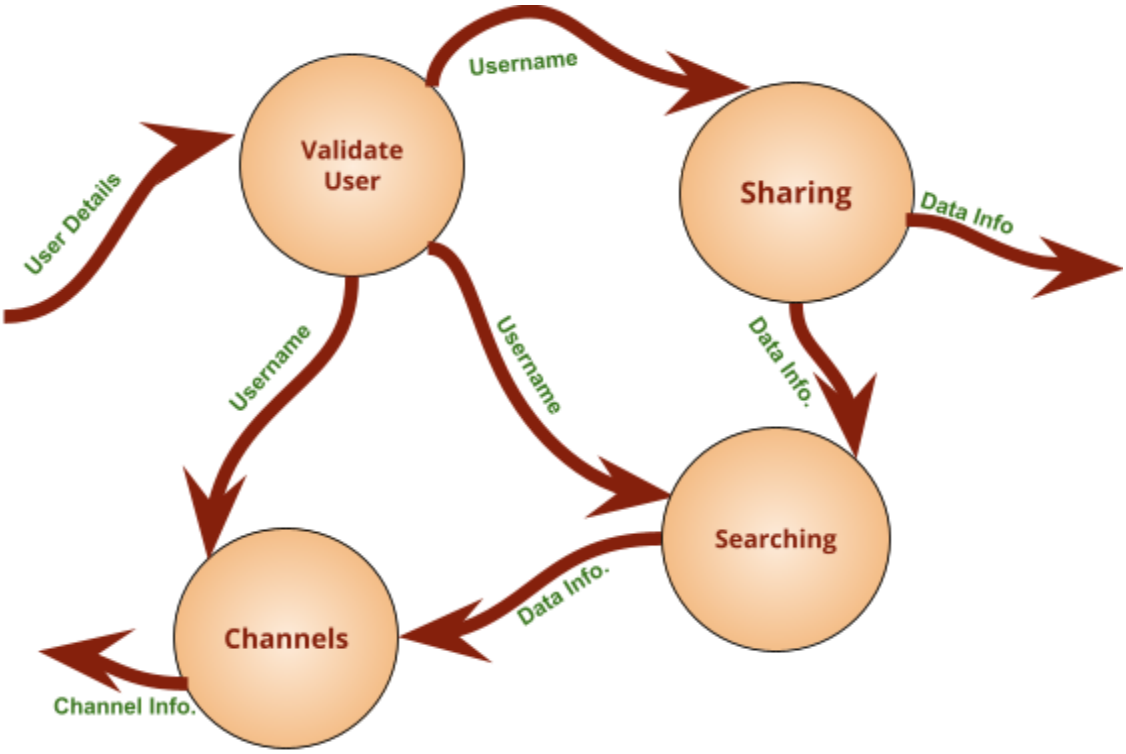
It's a basic overview of the whole system or process being analyzed or modeled. It's designed to be an at-a-glance view, showing the system as a single high-level process, with its relationship to external entities.



Level 0 DFD

2.1.2. Level 1 DFD :

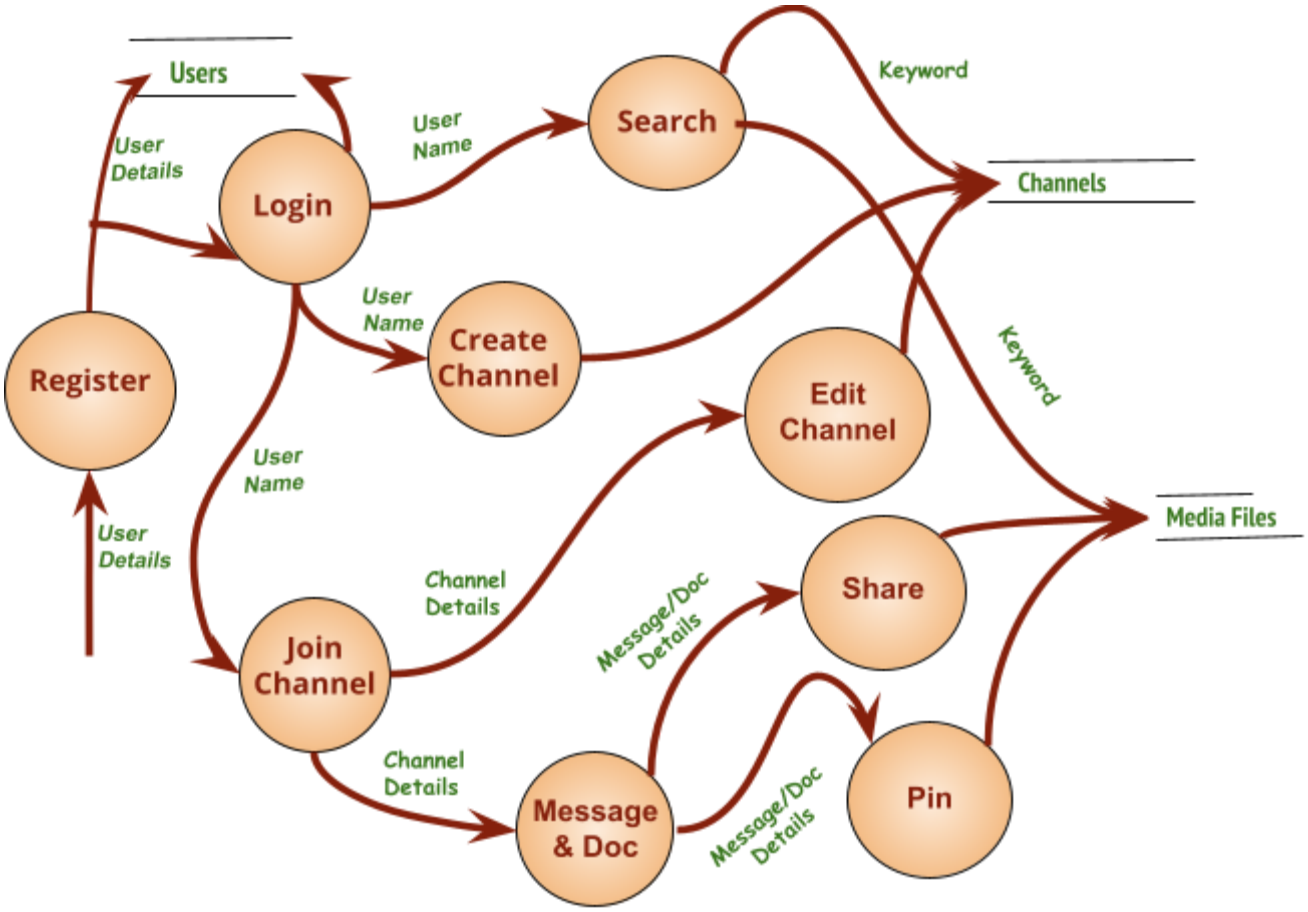
DFD Level 1 provides a more detailed breakout of pieces of the Context Level Diagram. We will highlight the main functions carried out by the system, as we break down the high-level process of the Context Diagram into its subprocesses.



Level 1: DFD

2.1.3. Level 2 DFD :

Level 2 DFD goes one step deeper into parts of 1-level DFD. It can be used to plan or record the specific/necessary detail about the system's functioning.



Level 2 DFD

2.2 Data Dictionary

TABLE	FIELD	TYPE	NULL
User Data	User_id	int(10)	NO
	Name	varchar(100)	NO
	Password	varchar(50)	NO
	Email	varchar(100)	NO
	Contact	int(10)	NO

Channel Data	User_id	int(10)	NO
	Channel_id	varchar(10)	NO
Channel Description	Channel_id	varchar(10)	NO
	Topic	varchar(100)	NO
	Description	varchar(100)	YES
	Message	varchar(100)	YES
	Activity	bool	NO
Message Data	Message_id	varchar(10)	NO
	Time	time	NO
	Date	date	NO
File Data Entity	Message_id	varchar(100)	NO
	File_id	int(10)	NO
	Type	varchar(100)	NO
	Size	int(10)	YES
Call Data Entity	Caller	varchar(100)	NO
	Receiver	varchar(100)	NO
	Channel_id	varchar(10)	NO
	Time	varchar(10)	YES
	Date	date	NO
	Duration	int	YES

3. Software Interface Design

3.1 User Interface Design

UI is designed according to UI design principles.

1. **The structure principle:** UI is organized in such a way that related things are combined together and unrelated things are separated.

2. **The simplicity principle:** It is easy to follow the provided interface. In the case of a mistake, the system displays an error message.

3. **The visibility principle:** All system's functions are available through UI. It does not overwhelm users with too many alternatives.

4. **The feedback principle:** Through the system of messages, the design keeps users informed of actions, errors, or exceptions.

5. **The reuse principle:** In design, the same names were used to perform the same operations with different objects in order to reduce ambiguity.

3.2 Description

"Welcome" page is the first page the user sees when he visits the website and isn't logged in. Upon logging, the user can navigate to one of the pages among various available options, the links to which have been given on the navigation bar of this page.

"Login" page has a form asking user his username and password, entering which and clicking the submit button leads the user to the Home page.

"Register" page allows the user to register to Prisma and be a part of workspaces to be able to read and send messages to his/her team channel.

"Home " page is the first page the user sees when logged in to the application. It's a list of all the workspaces the user is a part of, clicking on any of which leads to that particular workspace's messaging page.

"Profile" page link appears when the user has logged in by providing the correct username and password. This page shows the profile info of the user and allows him to change his profile picture, if he desires.

"Workspace" messaging page is the main collaborating page of a workspace having a list of user's channels/DMs on the left panel (to navigate to a particular channel) and a channel information panel on the right. Chatbox resides at the centre panel and allows the user to send/read/search messages.

"Create a new Channel" modal appears on top of a workspace messaging page and provides functionality to add a new public/private channel.

"Starred" page consists of all the messages from various channels starred by the user for future reference.

"Calls" page contains the call history of a user and allows the user to place a voice/video call with the entire team or with particular members.

4.Modules

4.1 Module Wise Description

FUNCTION	DESCRIPTION
Homepage ( )	This function displays the home page and asks users to register or login in to their Prisma Account.

About ( )	This function gives a brief information about the software and how to use the basic functionalities.
Registration ( )	This function is used by the person to create an account in our Prisma Software. This information is used for login purposes.
Login (username, password)	This function permits the user to use his/her account.
Profile ( )	This function displays all the information about the user and the number of channels in the user's account. It also has an edit option.
Createchannel (user_id)	This function returns a new channel with channel name, description and minimum of 2 participants.
Search (channel_id, word_to_find)	This function is used for different cases involving searching of user/ phrases/ documents in Prisma and returns it's location.
Message (message_id, channel_id, time, tag_usser=NULL)	This function stores the message data entity which can be used for the future searching functions.s
Sharing (file_id, channel_id)	Allows the user to attach a file from the storage.
Call (caller, receiver, time)	Stores the caller id, receiver id, time and duration of the call in the database and allows the users to communicate.