

Workspace Environment Portal

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ABSTRACT

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Workspace environment portal could be a work communication tool, "a single place for electronic messaging, tools and files." this suggests a rapid electronic messaging system with voluminous add-ins for different work tools. The add-ins aren't necessary to use the platform, as the main motive and functionality is all regarding talking to others. There are 2 ways of chat in the Workspace: channels (group chat), and direct message or DM (person-to-person chat). Workspace would be most useful for one to complete a project with several components working along with a team. And there were naturally several conversations at the that time. With Workspace Environmental Portal, one can create a number of channels specific to each major conversational theme, allowing us to have a number of concurrent conversations while keeping each conversation separate.

Keywords : Real time chat, Client-Server, Workspace, Group Messaging, Schedule Meetings, Channels.

I. INTRODUCTION

Workspace environment portal can be a gathering space for the whole organizing team. It is a fabulous place to coordinate and collaborate, and fun place for anyone to urge to grasp the fellow organizers and activists, even after one cannot all be among an equivalent space at constant time. It's a tool that one can simply, just use on the portable computer and the phone to stay connected at the side of the team and keep everyone up so far with the mandatory news and goings-on. Workspace is like a website for the whole team. It is a pc application deliberately created as the simplest way for organizations to speak each as a group and in personal one-on-one discussions. Workspace Environmental portal makes you able to communicate as a group through channels or

privately via "direct electronic messaging." It is an amazing tool to assist you to organize. Our workplace makes communication straightforward and fun. It is common for librarians to collaborate across institutions, particularly once organizing events like annual meetings. In these cases, organizing committees could have representation from across multiple states and organizations, and thus, in-person communication might not always doable. So, it is Convenient for teams to use collaborative tools that facilitate simple and efficient communication. In some cases, email is also spare for temporary, occasional communications, however once a team contains over a couple of individuals discussing several topics, email could impede productivity. Email could become heavy once the team creates a high volume of messages that have to be opened and

browsed inside the context of either the first reply or somebody else's reply, and so the reader should distinguish that reply is in response to that email. Email can cause a problem while occurring multiple synchronous discussions. In this case, it's going to be difficult to instantly determine which topic is being discussed. Lastly, email could also Emails may even be subject to a spontaneous deletion or an archiving, or content may even be too broad to appear effectively. To combat these 3 issues, team leaders ought to determine solution that compass communications to minimum of one place, separates topical conversations, and archives communications, creating conversations searchable and groups additional productive and economical.

The evolution of the web technologies had benefit individuals to accessing to the web easily. Communication between individuals using the web becomes a part of their lifestyle. Availing the web chat system, people habituated to communicate with each other's to transfer their messages. Our workspace make people can communicate with others through DM's and channel-based chatting that may be private or public and by sharing files, video's, images etc., along with messaging. In education field, it will be helpful for students when the exams are in the corner and or assignment due date. As group of students can communicate via channel based or direct messages. In Organizations or Institutions, particularly once organizing events like annual meetings, the people may forget the timings and in-person communication might not possible every time. So that people can use gentle reminder apps like google calendar, google drive for simple and efficient communication with organizers and activists. For today's society, it makes easy for people to interacting with each other by instant messaging with private and public as there convenient.

II. LITERATURE SURVEY

The internet communication is more and more popular among the public. Apart from using telephones or automobiles people can communicate now through the chatting technology. For this people not only allows for easier group conversations, but also saves time vs company-wide email threads. In the development of real time applications, the node Js is far better than other technologies and it is the most in demand from past. There are some technologies like Golang which delivers more performance than node, but it heavier for programmers to learn and it consumes more RAM as compared to node. So, most of the developers use node for coding scalable applications. And in data management server, the most preferred database is MySQL because of it's on demand flexibility feature. It implements the features efficient. Even through it has less features than other commercial database engines like PostgreSQL, MySQL puts compact strain on system resources and more ever it is a world's most popular opensource database.

THE Right Tool TO USE

Workspace can potentially replace email, text electronic messaging, and instant electronic messaging for team members, and keep all those communication designs along within one platform. With each desktop and mobile version, the workspace will facilitate team members by collaborating and coordinating their work notwithstanding wherever they are within the field workplace, at home, or out knock doors.

But no website is going to be total magic. It might work for team's work style or it might not. Regardless, if one brings the time to set up his team's workspace and one can purposefully manage it (as one could do on any other tool), it will provide a great sense of

community for one and his team, no matter where or when he is working.

To help out whether or not Workspace may work for each one, we've sorted it down some advantages in workspace environmental portal.

- By using workspace one can stop losing things in email. Workspace will replace email, text electronic communication, and IM with one app.
- In workspace, one can share the documents and files of different types like mp3, jpeg, mp4, pdf, doc, etc., with teammates and developers.
- One can mention teammates, which might send them a push notification on their phone or laptop. He/ She can conjointly mention a gaggle of oldsters right away, which makes it virtually pretty much as good as a walky-talky.
- In workspace, one can able to start a video or voice call with different members of the workspace team and communicate with each other.
- One can easily set reminders for him selves or others so that, one can use Workspace integral reminders or Google Calendar.
- Create a fun community workspace accessible by team members and clients, whether or not they're within the office.
- Workspace is especially smart for real-time collaboration, fast queries, and decisions, video/voice chats, fast poll/voting, keeping everybody feeling connected and in synchronize over time and workspace, quickly and effectively onboarding new team members and volunteers.

Characteristics of Workspace Environment Portal

There are several project management platforms or tools out there. We always tend to speak or tend to observe Hub staff Tasks, Asana, Jira, Basecamp, Wrike, etc., all the time. But there's one very necessary, very helpful project management tool you

would possibly not have heard: Workspace Environment Portal.

Project-friendly Structure

The first step in using Workspace Environment Portal for project management is to line up their team. People could create one team for their company, or if they are utilized with an outsized vary of people create all completely different teams for numerous parts of their cluster. Every team option a range of channels. These are the building blocks of the Workspace Environment Portal. Fundamentally, they represent a stream of conversations that revolve around a predefined topic. Channels can be topical, project-based, location-based, integration n-based, utilized by alone a particular team, or restricted to the opposite cluster you'd like. For company-wide project management, channels like management, sales, selling, and accounting will be useful. Workspace Environment Portal automatically creates general or random channels that will be used across teams. one can have private channels if he/she wish them.

Integrate other tools.

There are some common place project management options that Workspace Environment Portal simply can't replicate. If someone would like the work power of an additional project management apps, Workspace Environment Portal will assist him out therewith, too. Asana, Jira, Pivotal Tracker, Blossom, and Trello (one of the favorite project management tools for many) are just some of the project management integrations for Workspace Environment Portal. Bring in cards, tasks, conversations, and notifications from a range of the apps to form everyone's central area for obtaining stuff done. There are tons of other useful integrations, too. The IFTTT automations lets him get remainders and other automated actions. Loads of apps that people already been using could be linked

into Workspace Environment Portal too: Google Drive, Google calendar, GitHub, salesforce and many more. By activating these integrations will get their Workspace to a Fully synchronized powerhouse.

Tasks Management

Managing and Stay informed about everyone's task list is another significant part of project management. Workspace Environment Portal does a really good job here. The workspace will integrate with Wunderlist and Todoist, for instance, to allow a person to add things to your task list right from a channel. Or one can use the To-Do bot to keep their entire task list inside the workspace. There are many ways that one can use Workspace for task management they simply have to be compelled to select the one that works best suits for everyone. One could create their Workspace to-do list without using an integration. Adding a star will make it easy to find again, just hit the "Show Starred Items" button to show all of the important messages. Pinned messages and files are displayed in an exceedingly outstanding place within the channel therefore team members will find them instantly.

Collaborating with Posts

Workspace Environment Portal has another inbuilt note-taking option: posts. Post's feature permits to share and work along team members, on the things that are too immense for messages, consider it sort of a text document that team members can pass back and forth. Work on posts before sharing them, add checkboxes for tasks, and share them with anyone once they're prepared. Workspace posts are essentially sort of a simplified version of Google Docs that are engineered right into your favorite communication tool.

Powerful Searching Capabilities

It's very easy to urge a Workspace channel completely packed filled with messages. Which will build it very arduous to search out the one you're

trying to find. However, with the amazing search capabilities engineered into the workspace, you have got nothing to worry about.

Easy Taking Notes

Want to note down some points for the project that they're working? have to be compelled to set a reminder? or simply have an area wherever they'll type some things wherever they won't get lost? Start a new message chain with themselves, and their messages are kept wherever they'll simply notice them later. As, a result of they won't get pushed down by new messages from his teammates, they'll forever be right wherever he left them.

Make Workspace as Project Management Tool

Workspace is an exceptional project management tool. Whereas one could be able to use it to prepare their team, it's designed for team communication and collaboration. Use Workspace to supplement an additional ancient project management system, however, don't place confidence in it absolutely to form their team additional agile and versatile. A good answer to making your team additional agile and versatile is Hub staff Tasks, a project management tool with options like weekly sprints, agile workflows, Kanban board, automatic stand-ups, and far additional. Since all the tasks and boards, that one can produce on Hub staff Tasks become links, they'll be able to simply use them to enrich the workspace. Simply send over a link in any of the channels or private chats if something needs pressing immediate attention. Workspace Environment Portal does two things extremely well: style and understanding its user's needs. When you inspect the environment that comprises the Workspace, the convenience of use, and responsiveness stand out. It's simple for non-technical users to choose up, particularly when put next to alternative cluster chat tools, like Basecamp or Microsoft groups. Also, they'll be able to spin up your workspace instance at no cost, even for private

use. But styling isn't of abundant use if the practicality isn't there. Chat is comparatively straightforward to try and do, that is why most chat apps follow an identical basic format: a window to look at the conversation and a place to send a message, either underneath or on the side. This is where Workspace's attention to the wants of its users comes into play. Rather than reinvent the chat wheel, we focused on what individuals needed from a talk app over and on top of the fundamental demand of causation messages to every alternative. Workspace Environmental Portal makes people un-complicate for communication and organizing. Using its features helps each one to connect with their workers and share their appreciation for them. Connect your Calendar to the Workspace and they'll receive a notification once it's somebody's birthday. The direct electronic communication system in the Workspace offers you a location to share personal messages with your workers. Some folks relish receiving praise publicly for others to check, which might be done on public channels. For a lot of introspective, a non-public message will show them care and appreciate them while not creating them feel uncomfortable. Going back to channels, they'll be able to conceive to produce some casual chat rooms for your workers to attach. A positive company atmosphere is very important, particularly once collaboration is concerned. For groups that employ remotely, co-workers will desire nothing quite a reputation on a screen. planning to understand those names and also the stories behind them will facilitate your team to foster a robust work ethic and a want to join forces.

Channel Based Messaging

In Workspace, channels house the bulk of conversations within the app. Channels are often public for anyone to affix or personal (invite-only). additionally, to channels, you'll be able to have personal direct messages with a private or a bunch.

When you begin a replacement Workspace account, you get two channels by default: General and Random. Channel's area unit is perpetually selected by hashtags. whereas General and Random area unit fine beginning points, they are not representative of however most groups may or ought to use Workspace in an exceedingly real business setting. Better names are the titles of projects, customers, or departments. People sometimes produce channels for socializing, too, so banter and off-topic chatter does not get mixed in an excessive amount of work conversations. If you've got sports fans, book club members, or pet lovers among your teammates, Workspace is often an area for them to return along. With Administrator permission, you'll be able to rename channels at any time. Naming channels clearly and suitably is extraordinarily vital for serving to your teammates perceive wherever to travel and why. The sidebar of channels, personal conversations, and direct messages on the left is additional helpful than it first seems. Any time there are new, uninformed messages, the channel name seems in bold. A similar goes for after your name is mentioned or once you receive a connected direct message. Variety seems aboard it to point what percentage mentions or messages you've got.

How Workspace will use for developers

Software development can become very complex and can be achievable by collaboration and continuous modification. Work in Workspace happens in channels - organized areas for everything associated with a team, project, or topic. Instead of obtaining stalled with trivia like the change between apps, searching for people, Developers use Workspace to cut back communication redundancies and focus their time on providing outstanding products and services. Workspace channels give groups real-time visibility into project progress and selections. With valuable data force out of silos, collaborating on specifications, code reviews, and verifying statuses is

simpler for the complete team. This level of transparency conjointly permits groups to remain centered on their priorities during nipping potential redundancies or handling errors. Workspace channels make it easier for product managers, designers, and engineers to agree on what they're building and why. Channels additionally bring all stakeholders, choices, and specifications into one place, removing extra friction so groups will start at once. Integrations, combined with Workspace channels, build the complete QA method, showing neatness into a dev's progress, therefore groups will quickly capture and assign problems, make pull requests, and provide a real-time status that improves the standard of their code, all from the Workspace. When all messages are in a centralized channel, finding and solving errors are made easy by the workspace. Workspace's search mechanism makes it easy to connect with the people, we can search based on topic, project, or programming language. Workspace shines at both asynchronous and real-time data, which makes easy for developers to speed up at their project. Integrating all of your tools with Workspace permits development groups to pay less time with iterative, lower-value tasks – like automating routine processes – and permits them to host asynchronous huddles in Workspace channels, therefore everybody will keep within the loop while not breaking their flow.

FRONT-END Platform

The Workspace web application is generated by using jQuery, bootstrap frameworks and the application can be altered to any user needs. This web application stores all its user data, log data in its backend like Node JS. Using redux, we can store some of the data on the front end and also, we can fetch the data at the that time.

JQUERY

jQuery is light weight right lends to a lot of JavaScript library. The aim of the jQuery is to form abundant easier to use JavaScript code. jQuery wraps tons of common tasks into methods in order that, we are able to use just a code of one line instead exploitation several lines of JavaScript code to execute. jQuery library contains several features that embody markup language, DOM, CSS, effects and animations, and other alternative utilities.

1. Elaborating the terms, jQuery simplifies hypertext mark-up language document traversing and manipulation, browser event handling, DOM animations, mythical being interactions, and cross-browser JavaScript development.
 2. All jQuery strategies are within a document prepared event to forestall any jQuery code from running before the document is finished loading.
 3. Speed: It permits the developers to use the individuals part on client-side as well as server side will not effects on the most application.
- Being Light weight and a powerful chaining capability makes jQuery additional strong.
 - It has Large development community.

BOOTSTRAP

Bootstrap may be a free and an open-source text file tool assortment for making responsive net sites and web applications. It's the foremost common hypertext mark-up language, CSS, and JavaScript framework for developing responsive, mobile-first internet sites.

- Faster and Easier Web-Development.
- It creates Platform-independent webpages.

1.1) HTML

The word HTML stands for Hyper Text markup language by the name hypertext means that a text connected with it, merely referred to as text inside text. It refers to the approach within which web pages are connected between them. Thus, the link accessible on a website page is called an electronic text or a human readable text. Markup language isn't a programming language; it's a markup language that mark-up a text document with tags that tells an internet browser the way to structure it to point out. Markup language is being wide accustomed format website by the help of varied tags on the market in hypertext mark-up language.

BACK-END PLATFORM

Node JS

NodeJS is a free open source and platform freelance runtime environment for executing JavaScript code on any internet browser. Generally, each one tends to use node to develop back-end services known as API's. Node is ultimate for building extremely scalable, data-intensive, and back-end services in real-time that will increase potentiality of our consumer applications. The node is simple to learn and implement, and it will be used for prototyping and fast development but, it should use for building super-fast and intensely scalable services. The Node JS offers many advantages however below there are some key benefits are:

1) For back-end:

By using Node.js for backend, you can access all pros of full stack JavaScript development automatically, such as:

- It is better efficient and more ever it is a developer productivity.
- The code sharing, and reuse of the code would be done easily through node JS.

- The performance and speed of the technology in node JS are so better.
- Easy data sharing would be possible inside a team.
- A wide range of free tools are available in it.

Consequently, the team might be a lot of flexible, the long for development are going to be less and as outcome, one can get quick and reliable software. Developers worked in frontend JavaScript will begin programming with the same language on server side with minimum effort on either side, by wrapping it into modules and creating new levels of abstraction, you'll reuse code on the frontend and therefore the backend yet.

2) Fast processing:

There are certain reasons that showcase the fast processing in node JS:

• V8 engine

Node JS is based on JavaScript code. In implementation of node, Chrome's V8 technology which is developed for chrome browser is used. It will compile the functions in JavaScript code into machine code, at a high speed. And Node.js extracts all the benefits out of it.

• Asynchronous request Processing

Processing requests without delays will be handle easily by node JS. In General, when synchronous processing occurs in backend, the code is executed in an order. Therefore, there will be a delay for each request to get execute until the other request get finished. Asynchronous Processing makes requests to be processed without blocking the thread by push out a call back and continue processing requests after it get finished. This leads Node.js to make maximum of single threading, as an outcome, short latency, and concurrent processing.

3) Scalable technology

Using scalable technology for microservices in Node.js is best choice. This approach develops one application as a collection of tiny services, where every application running in its own process and communicating with small mechanisms that results more flexibility and it's simple to feature additional micro services instead of integrating extra features with basic app functionality.

4) Rich ecosystem

On word NPM, a default Node.js package manager, it additionally is a marketplace for open-source JavaScript tools, that plays a vital role within the advance of this technology. With regarding 836,000 libraries on the market within the NPM register as of currently, and over 10,000 new ones being published weekly, the Node.js system is kind of made. Constant stats imply that 97 percent of recent internet applications include NPM modules.

5) Seamless JSON support

Although different backend technologies like PHP will use JSON format for communication, Node.js will do it by not changing between binary models and uses JavaScript. this is often particularly handy after you build APIs for NoSQL database support.

MY SQL DATABASE

A database may be a separate application that stores a group of knowledge. Each database has one or loads of well-defined APIs for making, accessing, and managing, the data it has. Other kinds of information stores also can be used, like files on the filing system or massive hash tables in memory however data attractive and writing wouldn't be therefore quick and simple with those form of systems. The database is collection of tables and related data to it.

My SQL is very fast, and simple to use. And it is so popular now-a-days because the reasons are:

1. It is available under open-source license you no need to pay for it.
2. It may be a powerful program in its own claim. It handles a large set of the practicality of the most expense and powerful into packages.
3. It uses a standard form known as SQL data language.
4. It's easy to work with SQL on different operating systems in certain languages like PHP, C, C++, JAVA, etc.
5. It works well on large data sets with a quick and good performance.
6. It is user friendly and appreciated language for the web development.
7. My SQL consists of a customizable software package to suit their specific environments.

REQUIREMENTS SPECIFICATION

BASIC REQUIREMENTS FOR SOFTWARE DEVELOPMENT

Basic Operating System	Microsoft Windows XP
Database System	MYSQL
Browser	ANY WEB BROWSER (Chrome, Firefox, Edge, etc.)
Software for coding	Visual Studio Code
Programming Languages	HTML, CSS, jQuery, Node.js
Website Hosting	Contabo or Free hosting.

Table 01 : Software development requirements.

HARDWARE REQUIREMENTS

Basic Processor	Standard processor with a speed of 1.8GHZ (like Dual cores / intel i3)
Minimum RAM	4GB RAM
Minimum Hard Disk	512 GB
Network Bandwidth	2 MBPS

Table 02: Hardware Requirements.

IMPLEMENTATION

The following features are implemented in the workspace Environmental Portal (WSE-Portal):

Text Messaging

With WSE-Portal, sending messages is faster and secure and can do it simply. The messages that are sent to others are encrypted and sent securely. If a user isn't in online, the user can receive the message when he logs into his account.

Starting a chat session:

1. choose the contact from the list otherwise add new contacts by inviting them through mail.
2. Type the message in the chat box.
3. Tap on the "send" button or press Enter.

Message history

The chat sessions are stored locally on the client laptop.

The user will simply review the messages that are chatted between them by using the chat history.

Offline messages

Messages may be sent to even to users who are offline. The user will receive the message as shortly as he/she logs into their account.

Group chat

A user can create a chat space by adding contacts to a Channel. The messages sent within the chat space are

sent to all the members of the Channel. Users who are online will receive the messages instantly and those who are offline will receive the messages once they get online.

File transfer

Like several alternative applications WSE-Portal additionally provides the service of file transfer. The type of file which will be transferred ranges from pictures, videos, audio to documents of varied types.

Sending a File:

1. Tap on the "Upload File" button.
2. choose the contact's name to whom the file is to be sent.
3. Tap on the "Browse" button to pick the files from your laptop.
4. Send the file by clicking "Send File" button.

F. Private Channels

This is the place where you can store the confidential information in it in which it accesses to the few team members.

G .ER -Diagram

The Entity Relationship Diagram is a type of variable flowcharts that shows the entities such as people, objects and individuals related to each other in a system.

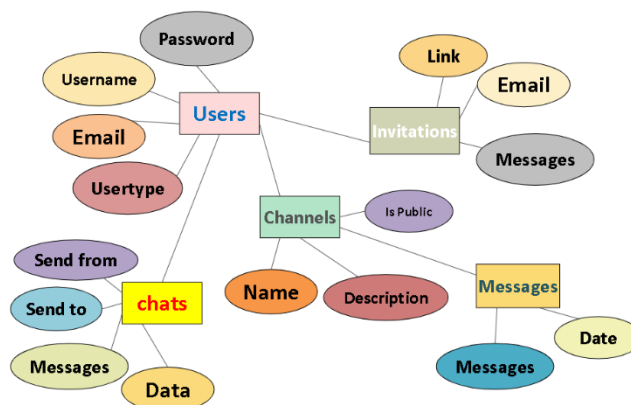


Fig 1: ER diagram

III. TESTING AND RESULTS

A. User Authentication

In this user can gain the access to his messages by logging into the application by providing his email and password in which he had given while registering the to the application. This information is stored in database. Every time, when the user logs in, the user credentials is crosschecked with database.

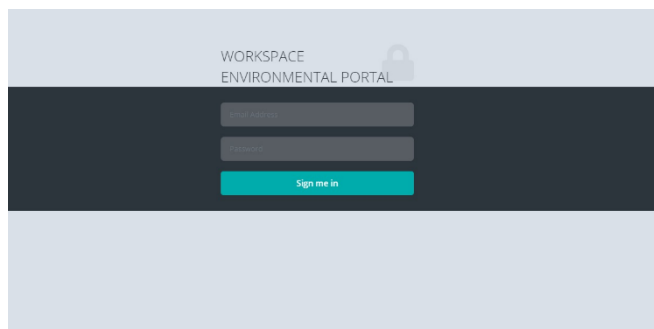


Fig 2: Login for User

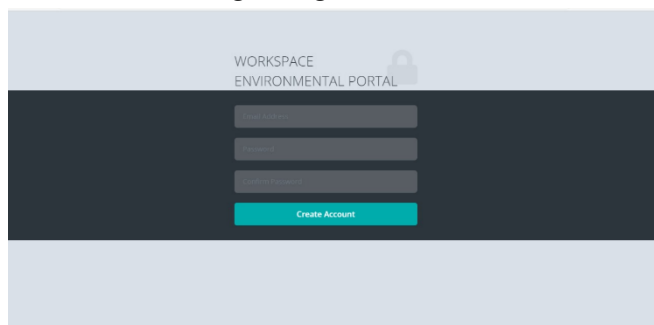


Fig 3: Registration for User

B. Chat Window

The chat window is where, all the communication happens by which one can read and reply to messages. One can use emoji reactions, set reminders, get add in notifications, and more ever, this is where one can talk to other people.

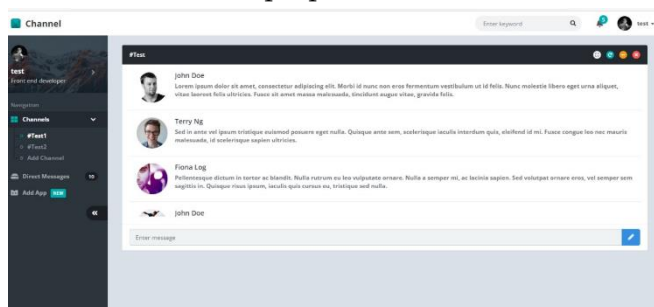


Fig 4: Chat Window

C. Channel Lists

The channels in WSE-Portal can be in public, means any member can see and join that channel, or private, means only members of that channel can be see or invite others to the join in it. DMs are always private, although there are limited people in it.

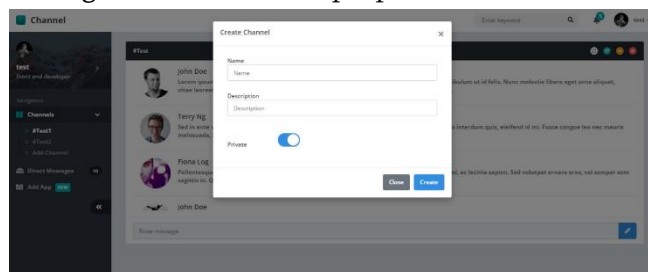


Fig 5: Channel is Public or Private

IV. CONCLUSION

It is a workplace communication tool, a single place for messaging and file sharing. It is a pleasure that we are dealing with the channel based instant messaging platform. For WSE-Portal, there are no real competitors in the market. It is combined UI with both group and direct one to one messaging. It is controlled through an invitation system. While comparing WSE-portal to other chat tools like Basecamp or Microsoft teams it is instance for free, even for personal to use. This will give a sense of privacy and security to the users.

In future the real time application can be developed by some extra features such as

- Live Streaming
- Messages auto delete after a certain time.
- Personalized message tunes.
- Adding Chatbot

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