

MICHIGAN STATE

UNIVERSITY

Project Plan Presentation

Smart Auto-Time Logging

The Capstone Experience

Team Vectorform

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*From Students...
...to Professionals*

Functional Specifications

- Optimize project billing process for Vectorform employees
- Improve efficiency for Vectorform employees by automatically tracking time worked on billable projects
- System will learn over time which project is being worked on
- User can interact with program through dynamic user portal



Design Specifications

- On start, program will begin tracking employee's active work time on billable projects
- User can access user portal to show all time tracked for their projects with the ability to insert, delete, and update individual entries
- User will initially enter billing project code for unregistered entries, system will learn to assign new similar time entries to that project code
- User can confirm accurate project time through user portal and upload to Vectorform billing server



Screen Mockup: User Portal

The screenshot shows a web browser window titled "User Portal" at the URL "localhost:3000". The page features a date filter set to "09/21/2021" and a "Today" button. Below the filter is a table with the following data:

Project Code	Start Time	End Time	Tracking Module	Meta Data	Actions
	9:00 am	9:45 am	Microsoft Teams	Meeting with execution team	
112233	10:00 am	11:00 am	Microsoft Teams	Meeting with applications team	
112233	11:15 am	2:00 pm	Visual Studio Code	ReactJS	
112233	10:25 am	1:30 pm	Google Chrome		
	3:30 pm	5:00 pm	Microsoft Teams	Happy Hour and Trivia	

Below the table is a form titled "Add a new entry:" with the following fields:

- Project Code:
- Tracking Module:
- Meta Data:
- Start Time:
- End Time:
-



Screen Mockup: Date Selector



Figure 1

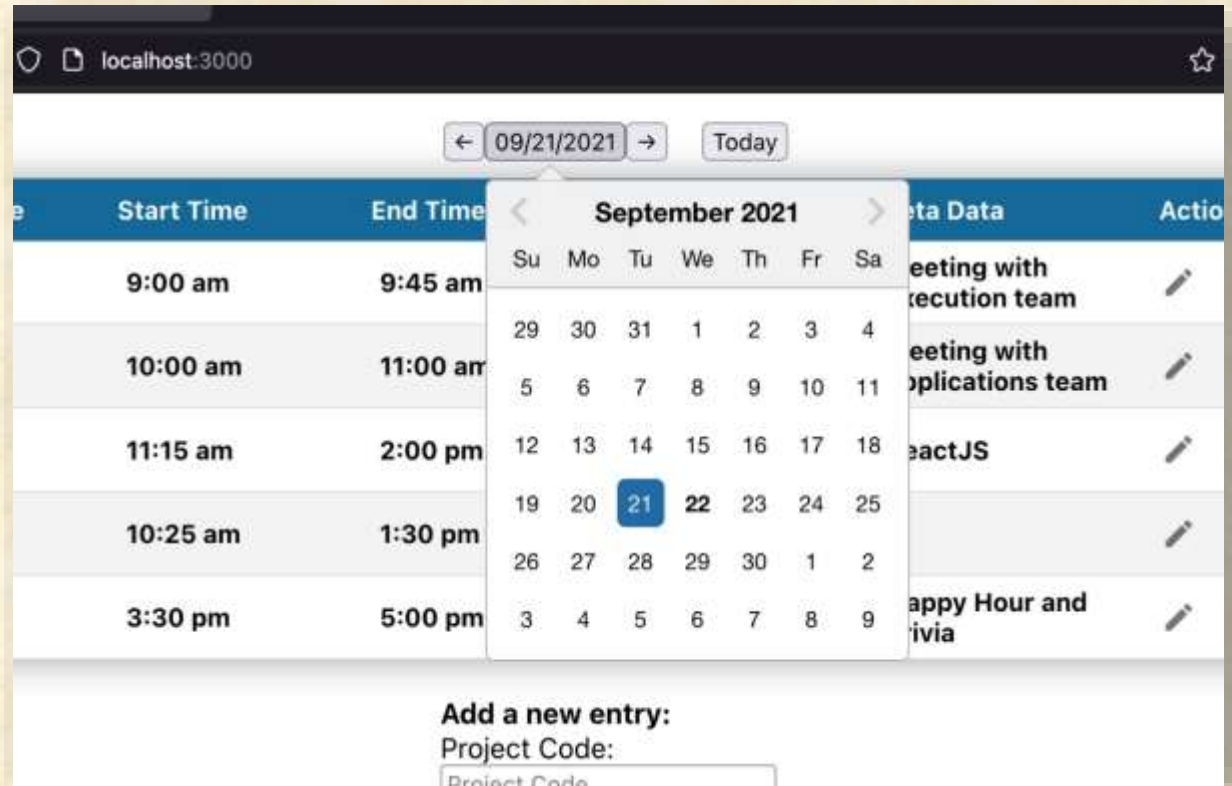


Figure 2



Screen Mockup: Editing



Figure 3

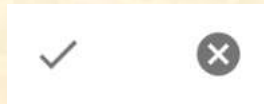
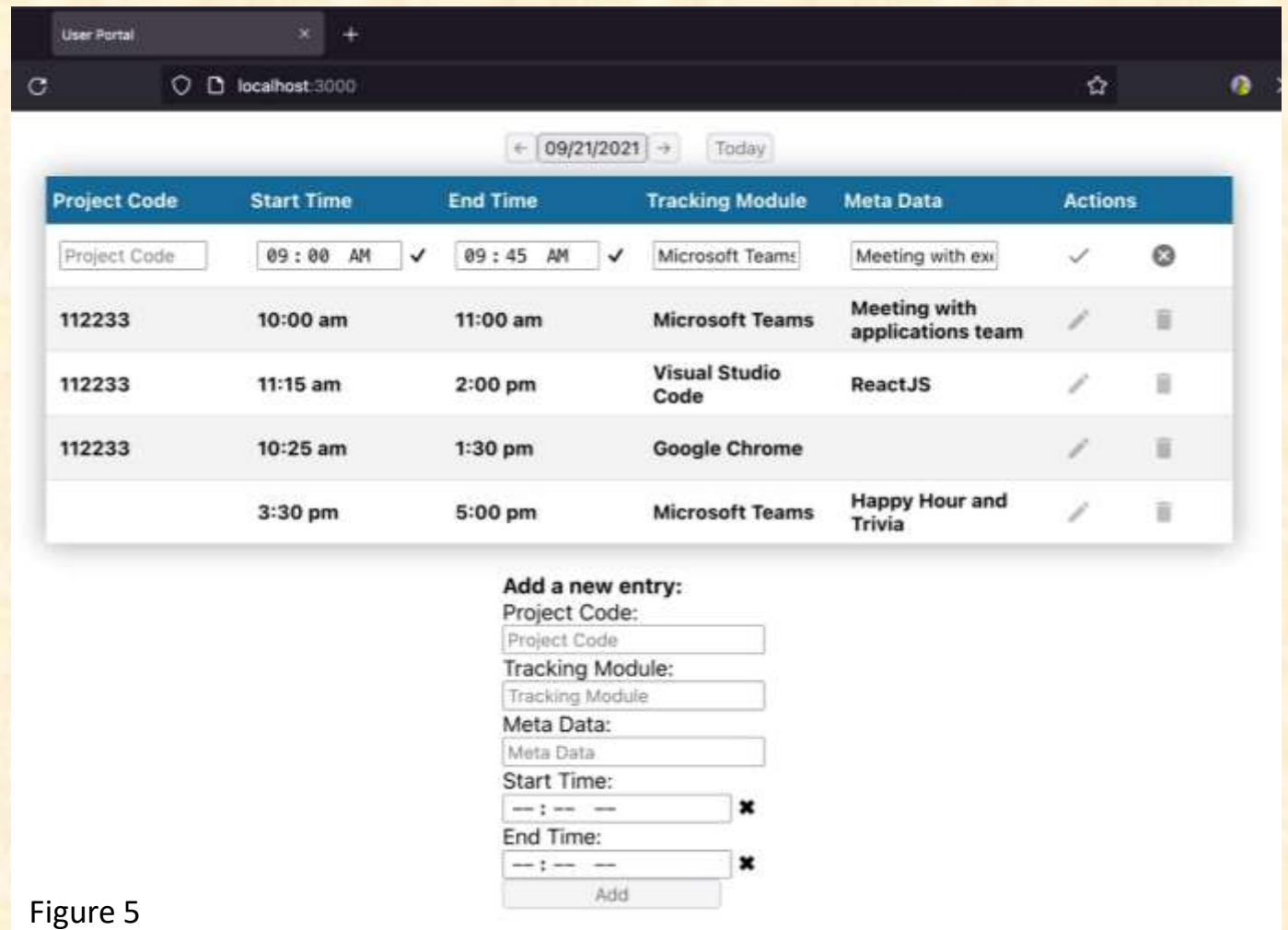


Figure 4



The screenshot shows a web application interface for editing project entries. At the top, there is a browser window titled "User Portal" with the address bar showing "localhost:3000". Below the browser, there is a date selector showing "09/21/2021" and "Today". The main content is a table with the following columns: Project Code, Start Time, End Time, Tracking Module, Meta Data, and Actions. The table contains five rows of data. Below the table, there is a form titled "Add a new entry:" with input fields for Project Code, Tracking Module, Meta Data, Start Time, and End Time, and an "Add" button.

Project Code	Start Time	End Time	Tracking Module	Meta Data	Actions
<input type="text" value="Project Code"/>	<input type="text" value="09 : 00 AM"/> ✓	<input type="text" value="09 : 45 AM"/> ✓	<input type="text" value="Microsoft Teams"/>	<input type="text" value="Meeting with exi"/>	✓ ✕
112233	10:00 am	11:00 am	Microsoft Teams	Meeting with applications team	✎ ✕
112233	11:15 am	2:00 pm	Visual Studio Code	ReactJS	✎ ✕
112233	10:25 am	1:30 pm	Google Chrome		✎ ✕
	3:30 pm	5:00 pm	Microsoft Teams	Happy Hour and Trivia	✎ ✕

Add a new entry:
Project Code:
Tracking Module:
Meta Data:
Start Time: ✕
End Time: ✕

Figure 5



Screen Mockup: Deleting

Project Code	Start Time	End Time	Tracking Module	Meta Data	Actions	
2556	8:25 am	9:45 am	Microsoft Teams	Meeting with execution team		
112233	10:00 am	11:00 am	Microsoft Teams	Meeting with applications team		
112233	11:15 am	2:00 pm	Visual Studio Code	ReactJS		
112233	10:25 am	1:30 pm	Google Chrome			
	3:30 pm	5:00 pm	Microsoft Teams	Happy Hour and Trivia		



Figure 6



Project Code	Start Time	End Time	Tracking Module	Meta Data	Actions	
2556	8:25 am	9:45 am	Microsoft Teams	Meeting with execution team		
112233	10:00 am	11:00 am	Microsoft Teams	Meeting with applications team		
112233	11:15 am	2:00 pm	Visual Studio Code	ReactJS		
112233	10:25 am	1:30 pm	Google Chrome			

Figure 7



Screen Mockup: New Entry

Add a new entry:

Project Code:

Tracking Module:

Meta Data:

Start Time:



End Time:



← 09/21/2021 → Today

Project Code	Start Time	End Time	Tracking Module	Meta Data	Actions
	9:00 am	9:45 am	Microsoft Teams	Meeting with execution team	 
112233	10:00 am	11:00 am	Microsoft Teams	Meeting with applications team	 
112233	11:15 am	2:00 pm	Visual Studio Code	ReactJS	 
112233	10:25 am	1:30 pm	Google Chrome		 
2556	2:30 pm	5:25 pm	Android Studio	Addition of login portal	 

Figure 8

Figure 9

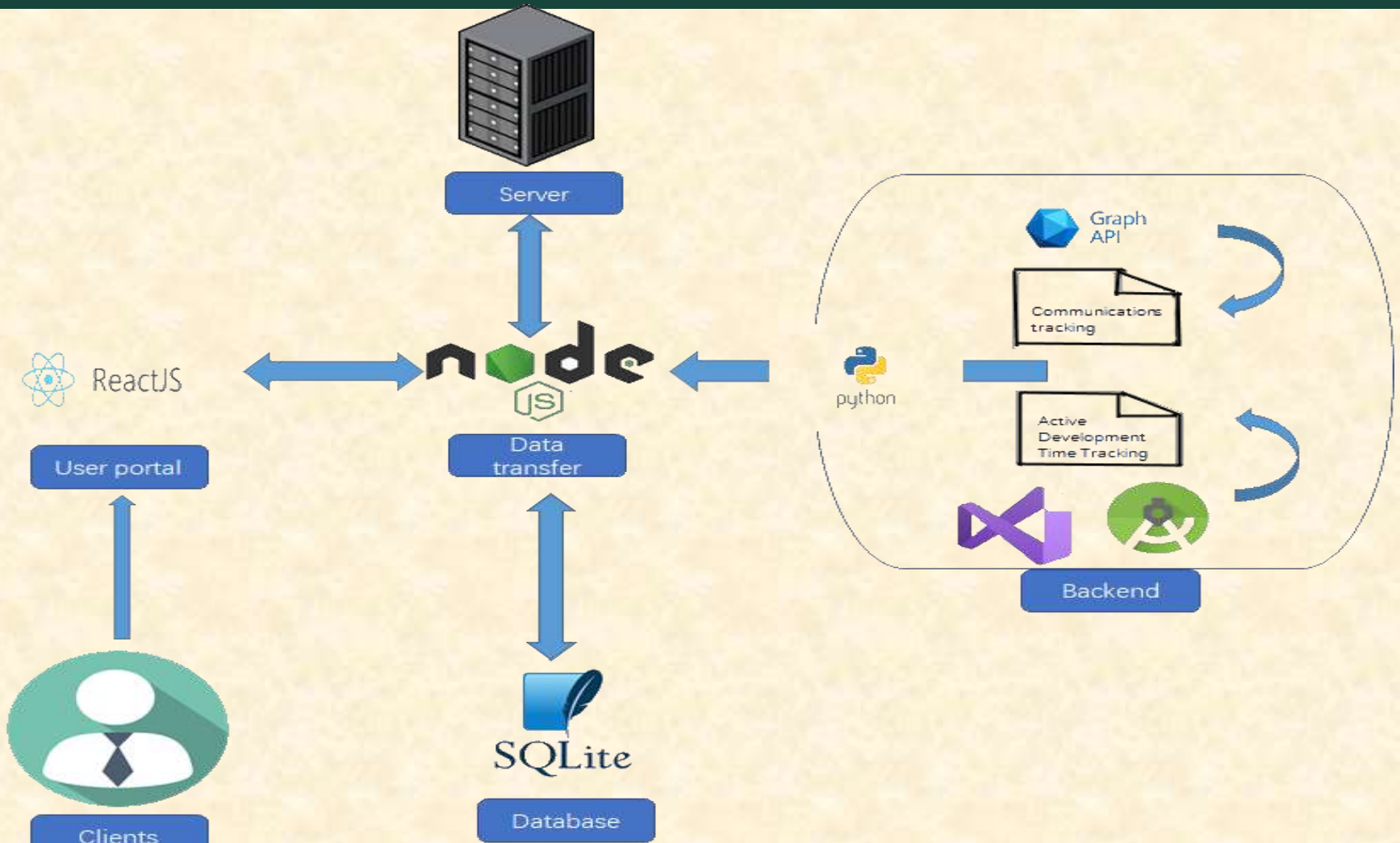


Technical Specifications

- On start Python will begin tracking projects
 - Webhook for Microsoft Teams API for communications
 - Polling operating system for focus information
- Tracking information from Python will be stored locally in database in SQLite
- NodeJS main data transfer point from database to all other system components
- User portal dynamically allocates information from NodeJS into editable table for confirmation



System Architecture



System Components

- **Software Platforms / Technologies**
 - **SQLite**
 - Lightweight SQL relational database platform
 - **ReactJS**
 - Adaptive user interface creation library
 - **NodeJS**
 - Asynchronous JavaScript runtime library for scalable networking
 - **Python**
 - Open-source cross platform programming language
 - **Bitbucket**
 - Atlassian Git interface for version control
 - **Microsoft Teams**
 - Communications and Meetings software that we will be tracking
 - **Microsoft Visual Studio**
 - Professional IDE utilized by Vectorform that we will be tracking
 - **Android Studio**
 - Professional application development platform used by Vectorform that we will be tracking



Risks

- Connecting Multiple Languages and Applications
 - Description: Our team has minimal experience in linking together multiple languages and applications in a singular system
 - Mitigation: Focusing on getting all the parts connected before developing out more features
- Tracking Active Work Time
 - Description: Need to track time spent in active development, ignore time on projects left open in background
 - Mitigation: Working hard on finding OS level focus tracking and development tool plugins that could help filter for this
- Extended Background Usage
 - Description: Program will need to run for long amounts of time without error in the background, as well as without slowing down hardware
 - Mitigation: Our technologies have been selected to be non-resource intensive and we will be adding endurance testing to our plans



Questions?

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