Project Requirement Document

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Team Name: Microsophons
Product Name: MicroCode

1. Define project specifics

This project is a web application supplying a real-time code editor that could be accessed by multiple users and a real-time text communication tool that could be used while coding together. Users will be involved in a web environment which would solve the collaboration problems faced by programmers for decades, such as conflicts of combining codes.

2. Team goals and objectives (Major function and features)

- Create a real-time collaborative IDE in a browser
- Build an online code management system
- Establish real-time chat communications

3. Background and strategic fit

Programming face by face in real time is somewhat difficult in our study and work. Our project provides a remote online coding IDE for different people programming together at the same time. It supports different programming languages highlight, instant chatting, and data storage online.

4. Assumptions

There are a lot of demand to program on the same file at the same time. For example, when people are doing pair programming, instead of one of them can only watch, it is much better if they can edit the same file on two clients, while being able to see other's cursor and modification on the file.

5. User Stories or Use Cases

Precondition: Log in/user identification
Use Cases:

1. As a user, I can edit code in browsers, with codes highlighting.
2. As a user, I can see other people's work, so that I can give advice and do my job accordingly.
3. As a user, I can save the code on the cloud so that my work will not be lost.
4. As a user, I can retrieve back to where I left so that I can continue to code.
5. As a user, I can directly see the results of my web code, thus I can save the time of running it on other IDEs.

6. As a user, I can set permissions for the code to people who can view/edit it so that only the authorized users can access the data.

7. As a user, I can share my code to social networks, such as Twitter, so that my friends can see my code as well.

8. As a user, I can chat instantly with other co-workers so that the coding process could be very efficient.

9. As a user, I can voice chat with other people, so that they can communicate even they are remote.

10. As a user, I can invite other people to collaborate on my project so that it could be contributed by different people.

6. User Interaction and Design

Online IDE in a browser with chat

7. Major Problems to solve

1. How to achieve instant synchronization while coding in the monaco editor.
2. How to create database for users and files.
3. How to put website on the server.
4. The design of user interface in the browser.

8. Tools and References:

- Monaco
- Socket.io
- Node.js
- AngularJS