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MIT WORLD PEACE UNIVERSITY | PUNE
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

LiveCode Compiler

School of Computer Science & Engineering
Academic Year 2022-23

Mini Project on Open-Source Development
Synopsis

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Project Overview :-

Introduction :-

- In this project, we created a real-time code-editor or compiler. In a typical compilation, a user can simply code and see; however, in our project, a user may establish a room with socket.io, invite his friends in, and then compile and run the code together. Additionally, a user can teach the code using the room capability.

Need of Work / Reason for selection of this project :-

- The main motivation behind creating this project was to address the fact that, in a typical compiler, only one person could write and run the code while another could just observe. However, with this project, anyone could create a live room and invite his friends to the room. and all working together to compile, run, and monitor the code. In this project, you can code in the language of your choice.

Objectives :-

- Create a Web real-time compiler that allows you to create a live room, add a friend, and collaborate. Additionally, you can use this project as a teaching tool to show students how to write and run code using a compiler.

Problem Statement:-

- A real-time code editor refers to an application that enables multiple users to collaboratively edit and write code simultaneously. The concept involves providing a shared virtual environment where programmers can work together on a coding project, allowing real-time updates to be visible to all participants. This collaborative approach fosters efficient teamwork, making it suitable for pair programming, code reviews, and remote collaboration.

- One notable implementation of a real-time code editor is outlined in a research paper titled "Real-time Code Editor Application for Collaborative ..." which analyzes the benefits of such tools for cooperative coding projects. This approach enhances productivity, as it eliminates the need for developers to manually share code files and integrates communication features for seamless interaction.

Flow Of System :-

❖ One Entities:

1. Client/User.

❖ User/Client Side:

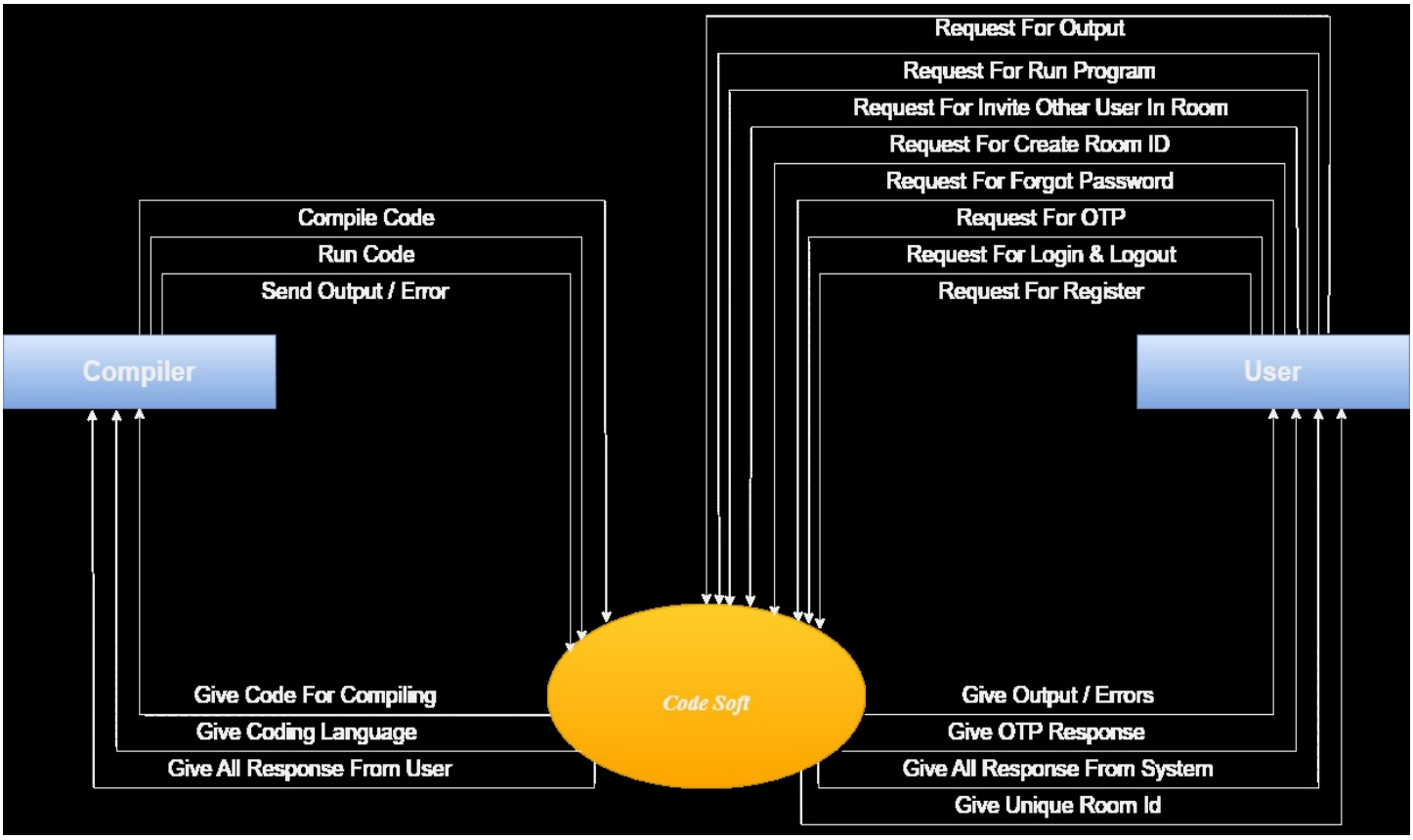
1. Sign Up.
2. Sign In.
3. Forget Password.
4. Edit Profile.
5. Create Room.
6. Invite Users.
7. Write Code.
8. Run Code.
9. Give Input.
10. Get Output.
11. Feedback.
12. About Us.
13. Contact Us.
14. Logout.

❖ Compiler Side:

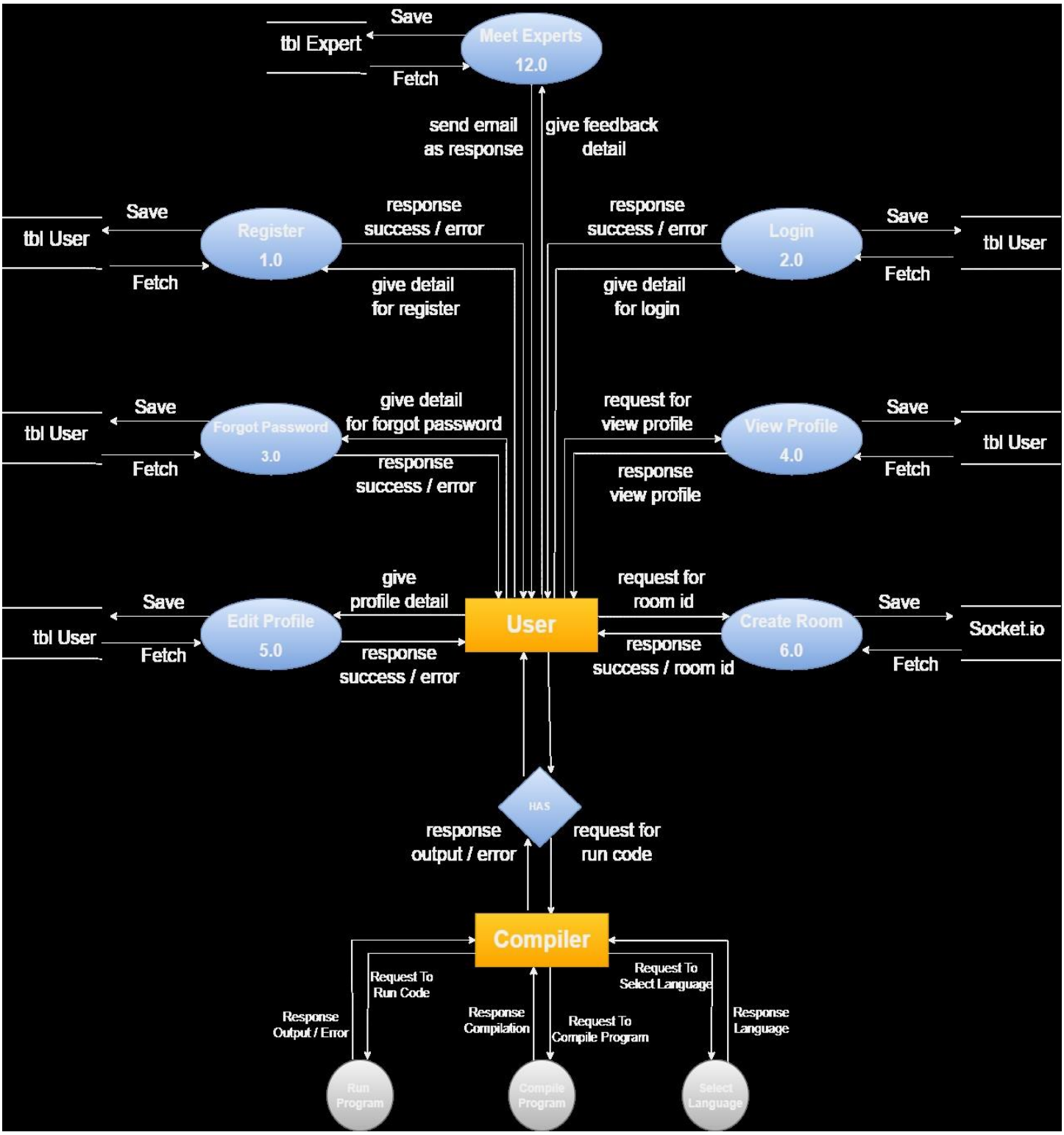
1. Create Room.
2. Send Room Invitation.
3. Select Language.
4. Compile Program.
5. Run Program.
6. Take Input.
7. Give Output / Error.

Data Flow Diagram :-

0 level DFD :-



1 Level DFD :-


Save
tbl Expert
Fetch
Meet Experts
12.0
send email
as response
give feedback
detail
Save
tbl User
Fetch
Register
1.0
response
success / error
give detail
for register
response
success / error
Login
2.0
give detail
for login
Save
tbl User
Fetch
Save
tbl User
Fetch
Forgot Password
3.0
give detail
for forgot password
response
success / error
request for
view profile
response
view profile
View Profile
4.0
Save
tbl User
Fetch
Save
tbl User
Fetch
Edit Profile
5.0
give
profile detail
response
success / error
User
request for
room id
response
success / room id
Create Room
6.0
Save
Socket.io
Fetch
HAS
response
output / error
request for
run code
Compiler
Request To
Run Code
Response
Output / Error
Response
Compilation
Request To
Compile Program
Request To
Select Language
Response
Language
Run
Program
Compile
Program
Select
Language

Benefits to the surrounding/society :-

- As a result of the COVID-19, schools all throughout the world have been closed. Over 1.2 billion youngsters are not in school worldwide.
- As a result, education has undergone a significant transformation due to the advent of e-learning, in which lessons are delivered online and through digital platforms.

Advantages :-

- Real-time compiler facilitates anywhere learning and coding.
- Lectures can be taken any number of times.
- Web real-time compiler that allows you to create a live room, add a friend, and collaborate.
- Real-time compiler Learning is cost effective as compared to traditional forms of learning.

Limitations :-

- Not available as of yet in mobile application form.
- Network connectivity is required.
- This project does not have chat or video call features.

Project requirements :-

- Equipment: Broadband, Laptop/PC
- Facilities required (include software, hardware):

  1. Software :- Node.js, React.js, Css, Socket.io
  2. Hardware :- Windows 10, Internet Connection

- Communication, Budget (if any) etc: