

# Problem Statement and Goals

## UnderTree

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Table 1: Revision History

Date	Developer(s)	Change
September 24th, 2022	Veerash Palanichamy, Faiq Ahmed, Eesha Qureshi, Kevin Kannammalil	Initial Draft
September 25th, 2022	Veerash Palanichamy, Faiq Ahmed, Eesha Qureshi, Kevin Kannammalil	Added our changes

## 1 Problem Statement

### 1.1 Problem

Latex is a common tool used by both students and researchers for writing reports and documents in an academic setting. Additionally, most of these academic works written in latex require a collaborative effort between multiple parties. This then introduces the need to be able to see what the other parties have written in real time for the sake of editing and revising the work, as well as a need for version control to be able to track contributions between the parties in a safe manner. However, there is no current solution in the market to deal with both these issues at the same time in an effectively integrated environment.

## 1.2 Inputs and Outputs

Latex code provided by the users will be used as an input for the system which will be used to output the tex file and its processed PDF file.

Other input to the system is the git repository which will be used by the system to output the tex file and the output PDF file.

## 1.3 Stakeholders

The stakeholders for this project besides Dr. Spencer Smith are primarily end users making publications, reports, and lab assignments in several fields like CS, Math, Physics, etc.

## 1.4 Environment

The software can be run on any device that is able to run a web browser like Google Chrome. The users of this software would be required to have a pre-existing git repository to keep track of the commits.

# 2 Goals

The goals for the project are as follows:

1. Users should be able to invite and work with other users on a project
2. Users should be able to see live edits made to the document by other users similarly to google docs
3. Users should have the ability to make commits to the github repo using the changes they have made to the document
4. Users should be able to log into the web application using their github account
5. Users should be able to communicate with each other on the web app
6. Users should be able to create a git repository on the web app

# 3 Stretch Goals

1. The app should have the ability to import microsoft word document and automatically convert it to a latex document
2. The app should support the ability to copy and paste images into latex and simplify the process
3. The app should make it simpler to add tables into latex
4. The app should include a spell checker to help the user avoid spelling mistakes