



Bilkent University  
Department of Computer Engineering

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# Senior Design Project

*Project short-name: Prexcel*

## User Manual

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User Manual

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# 1. Installation Instructions

You may either install the app using the installer, or build via the source code. In order to build via the source code, you may need to install the dependencies.

The repository for the project is available at this URL: <https://github.com/cankirimca/Prexcel>

Application is a desktop application that runs on Windows 10.

## 1.1. Installation From The Installer

1. In order to install Prexcel from the installer, one needs to install the frontend and the backend. For this, you need the executable file, "prexcel Setup 1.0.0.exe" and the app.py and its dependencies. You may download these files from the moodle submission, or from the release v.1.0.0 from the GitHub repository.
2. First, install the Prexcel using the Prexcel Setup Installer. Installer guides the user through the steps of installation and asks installation directory. It is important to note that the installer requires administrator access in order to function. This step completes the setup for the frontend.
3. For the backend, because of the huge number of dependencies, there is not a single executable file that can be used to install or run. First, one needs to install Python 3.6, as it is the only version that supports the dependencies.
4. Download deepspeech-0.9.3-models.scorer and deepspeech-0.9.3-models.pbmm from <https://github.com/mozilla/DeepSpeech/releases/tag/v0.9.3> and put it in the directory Prexcel/project/backend/speech-to-text (It could not be included in the submission file as it exceeds 1 GB.)
5. Run the "run.bat" in order to run the backend of the application. It must be on the same level as the app.py. It is also found in the directory. At this point, it might throw some missing module errors. In that case, install the missing modules using `python -m pip install <missing-module-name>` or `py -3.6 pip install <missing-module-name>` Continue this until there are no more errors coming from the missing dependencies.
6. Once there are no more missing module errors, the app is installed.

This completes the installation steps for the Prexcel.

## 1.2. How To Run The App

1. Once the dependencies are installed, you can run the backend of the application via running the “run.bat” file. You can also run the backend of the application via the command `python app.py` if python 3 is the only Python version in your computer, or using `py -3.6 app.py` if you have multiple Python versions on your computer. It takes a while for the server to get going, so please be patient. Server is ready when this line is displayed: `Running on http://localhost:5000/`
2. Once the backend server is running, run the prexcel.exe (installed by the installer).
3. Now you can use the app. It is important to note that the backend server must be running in order to use the application. Once you are done, please do not forget to close the backend server as well.

Note: You need to have an internet connection to be able to run the app.

## 1.3. How to Build From The Source Code

In order to build Prexcel from the source code, the user needs to run the frontend and the backend of the application separately.

1. To run the frontend of the application the user needs to cd into the project/frontend/prexcel directory. There, when the project is cloned to the local machine of the user, they need to execute the `npm install` command, after the required packages are downloaded they can start the front end of the application using the `npm run dev` command. A window containing the application should open up.
  - a. In this part, normally the electron app displays the app hosted at the following URL: <https://burakyuslu.github.io/prexcel-react-server/> . If you want to run it on `http://localhost:3000` you should uncomment out line 38 main.js , and comment line 38 in main.js. main.js is located at `Prexcel\project\frontend\prexcel\public\main.js`.
2. After this step, the frontend is up, now the user needs to complete the backend execution. For that the user needs to open another terminal instance and cd into the project/backend directory. There the user can run the following command `python app.py`. Keep in mind that doing so may result in missing module errors, the user needs to install the imported packages to the local machine using the `pip install <module_name>` command. After installing the packages, when the `python`

`app.py` command is executed again; Prexcel is ready to be used. The user can switch to the original opened window with the title Prexcel, and start using the application.

**Note:**

In order to use some of the modules used in the application, Python version 3.6.8 must be installed to the user's local machine. This note only applies to the section "1.2 How to From The Source Code". Section 1.1 Installation From the Installer does not require any Python installation on the local machine and is the recommended way of installing Prexcel.

## 2. User Manual

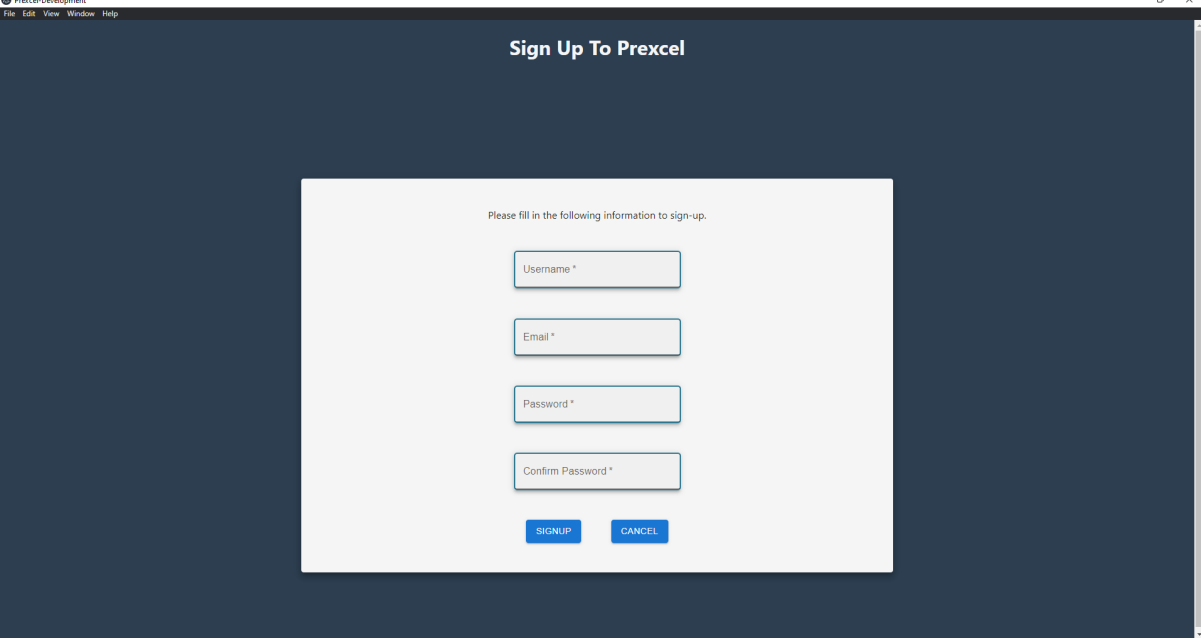
### 2.1 Log-in



*Figure 1. Login Page*

This is the initial screen of Prexcel. Here, the user can log-in to the application by entering their username and password. After that, the user will be directed to the main page if their credentials are correct. If the user wishes to create a new account, they can use the "Sign Up" button.

## 2.2 Sign-Up



The screenshot shows a web browser window titled "Prexcel-Development" with a menu bar containing "File", "Edit", "View", "Window", and "Help". The main content area has a dark blue background with the title "Sign Up To Prexcel" in white. Below the title, a white rectangular form is centered. Inside the form, the text "Please fill in the following information to sign-up." is displayed. Below this text are four input fields, each with a blue border and a blue asterisk indicating a required field: "Username \*", "Email \*", "Password \*", and "Confirm Password \*". At the bottom of the form are two blue buttons: "SIGNUP" and "CANCEL".

*Figure 2. Sign-up Page*

The users can create a new account on Prexcel by entering their username, e-mail address, and password. After that, the user will be directed to the log-in page to log into the application.

## 2.3 Main Menu

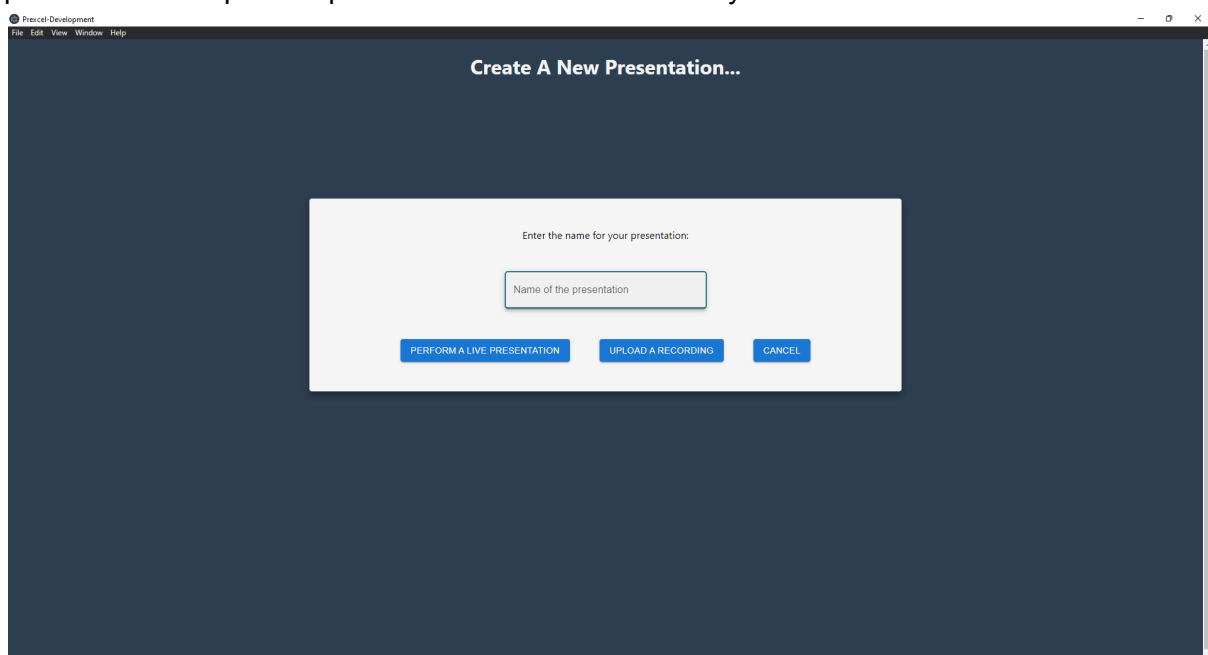


Figure 3. Main Menu Page

A main menu page where the user can navigate to the other pages which contain the basic functionalities of Prexcel. The user can also log out of their accounts by clicking on the “Log-Out” button.

## 2.4 Create a Presentation

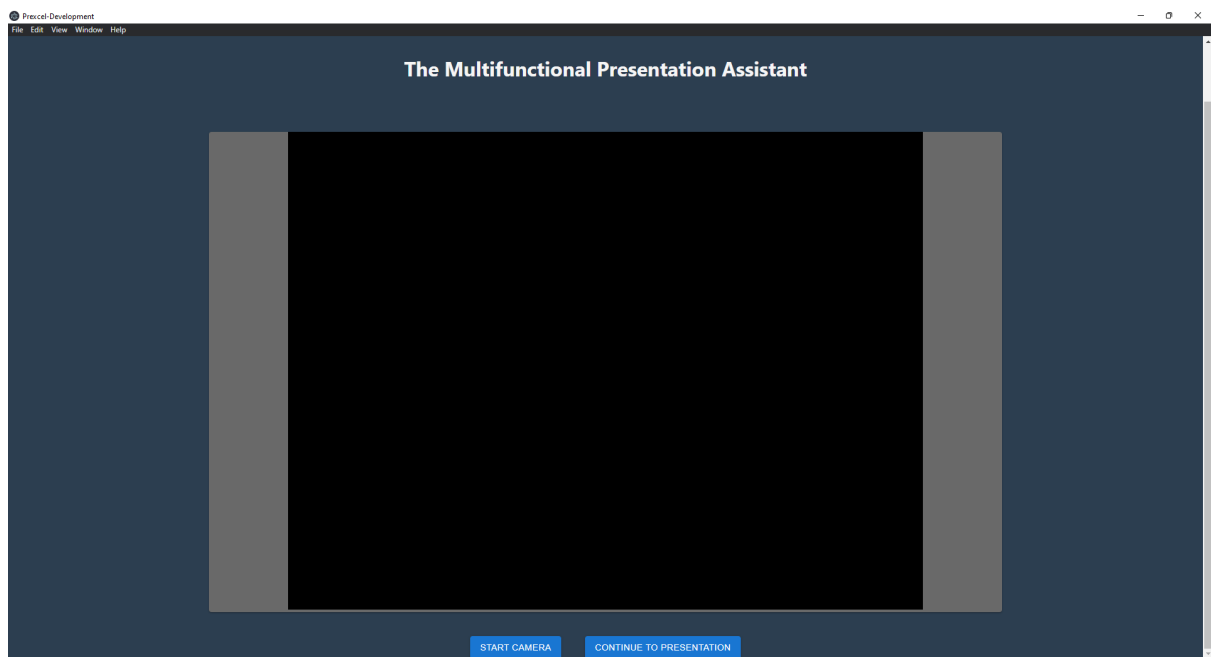
After clicking on the “Start a Presentation” on the main menu, this screen appears. On this screen, the user enters a name for their presentation and chooses either to record a live presentation or upload a presentation from their directory.



*Figure 4. Create A New Presentation Page*

## 2.5 Perform a Live Presentation

### 2.5.1 Check Camera

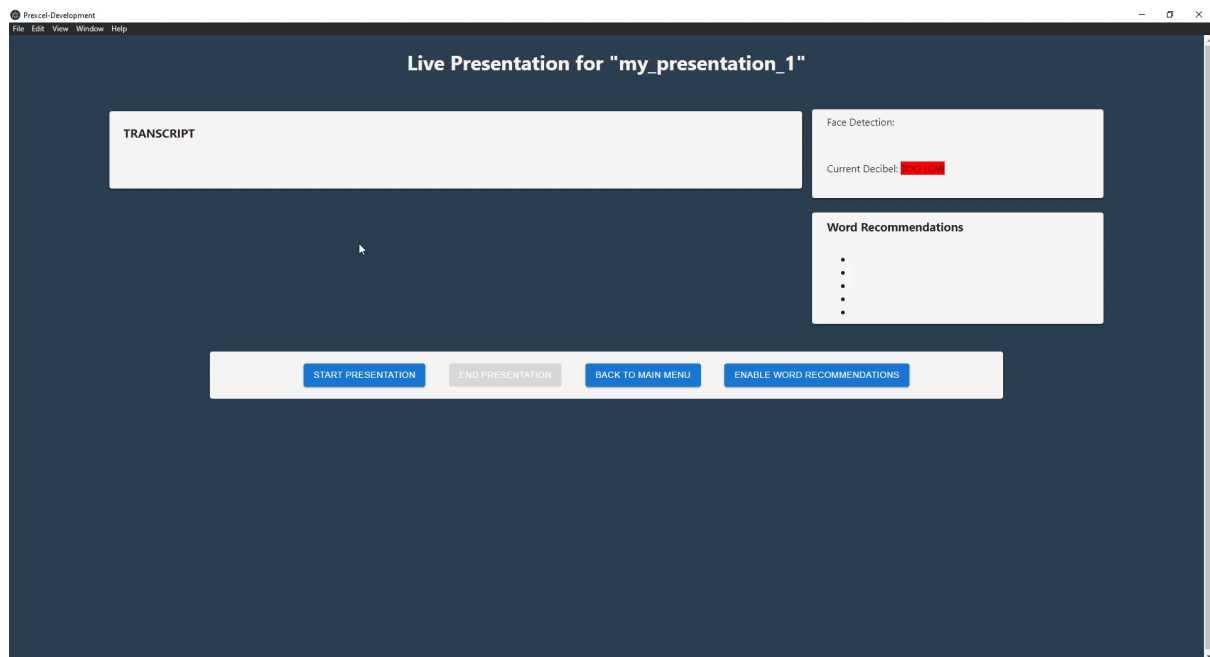


*Figure 5. Check Camera Page*

When the user clicks on “Perform a Live Presentation”, this intermediary page is shown where the user can check their web camera position before they start the presentation. Here, the user can turn on/off their cameras and then continue to the presentation.



## 2.5.2 Live Presentation Screen



*Figure 6. Live Presentation Page (Initial)*

Live Presentation Page is where the user can record a new presentation. After the presentation starts, they can see the text transcript of their speech, a face detection flag indicating whether the face is looking towards the camera, a decibel flag that indicates whether the volume is too high or low, and also the word recommendations generated by the machine learning model. The word recommendations can be disabled and enabled by clicking on the "Enable Word Recommendation" button.

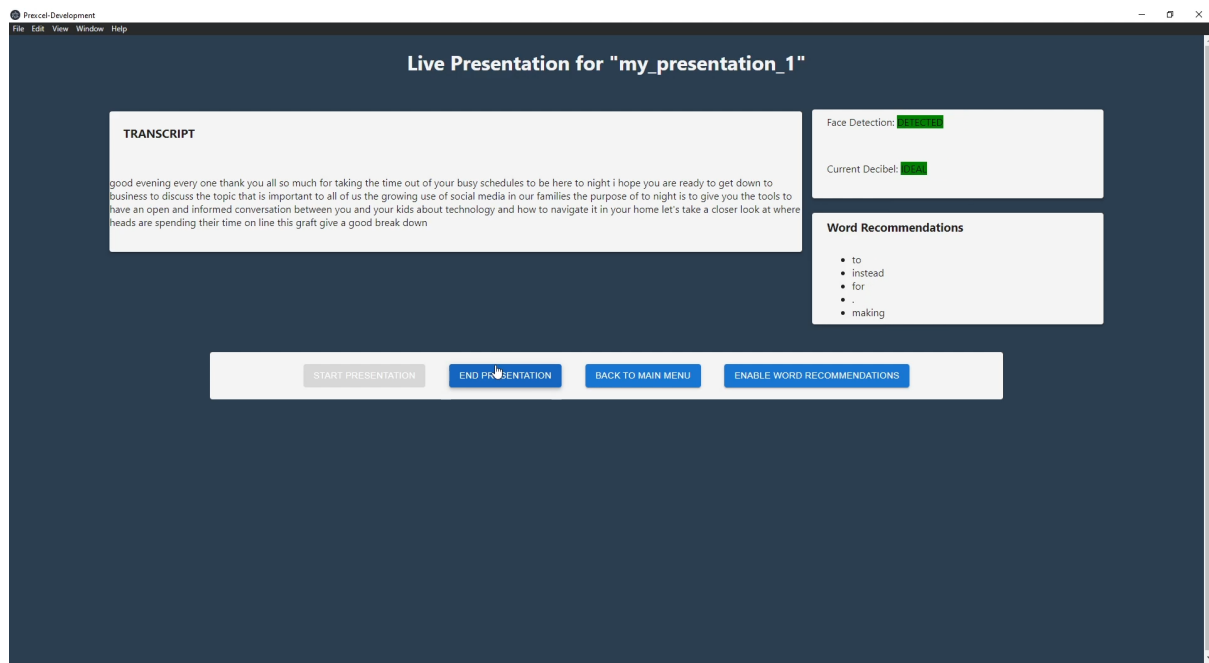


Figure 7. Live Presentation Page (while presenting)

After presenting, the user can end their presentation. After that, the presentation will be saved to the database.

## 2.6 Upload presentation

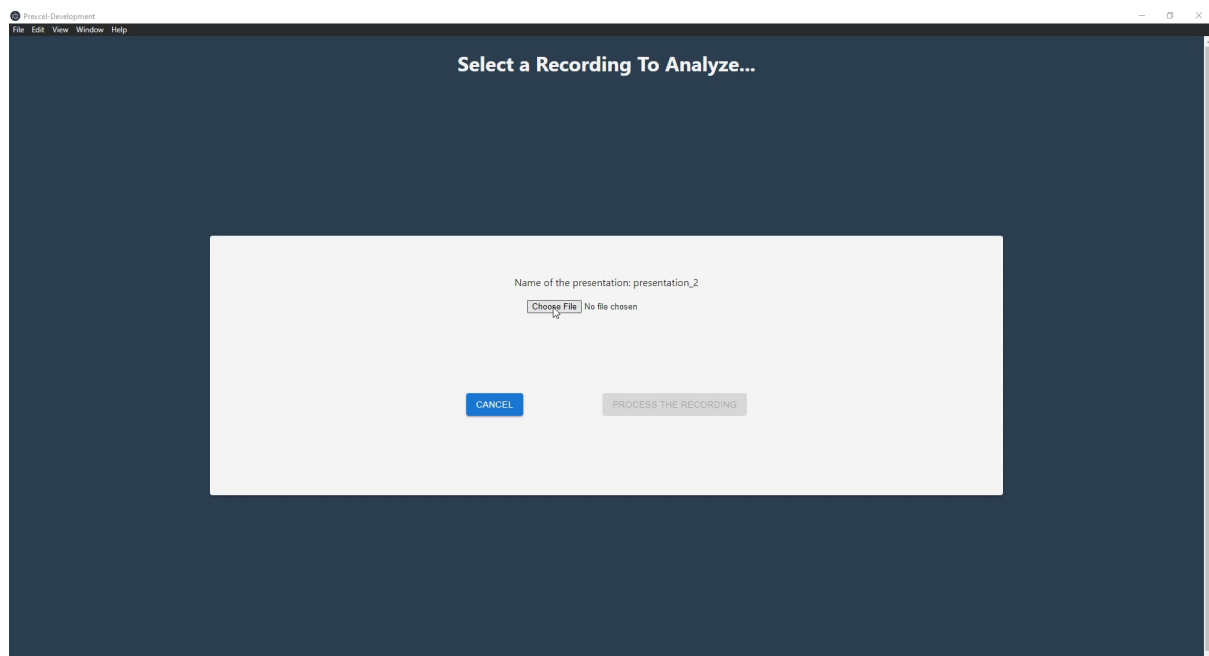


Figure 8. Upload Presentation Page

This is the Upload Presentation Page where the user can upload a presentation file to be processed. For video files, .mp4 format is allowed and for audio files, .wav file format is allowed.

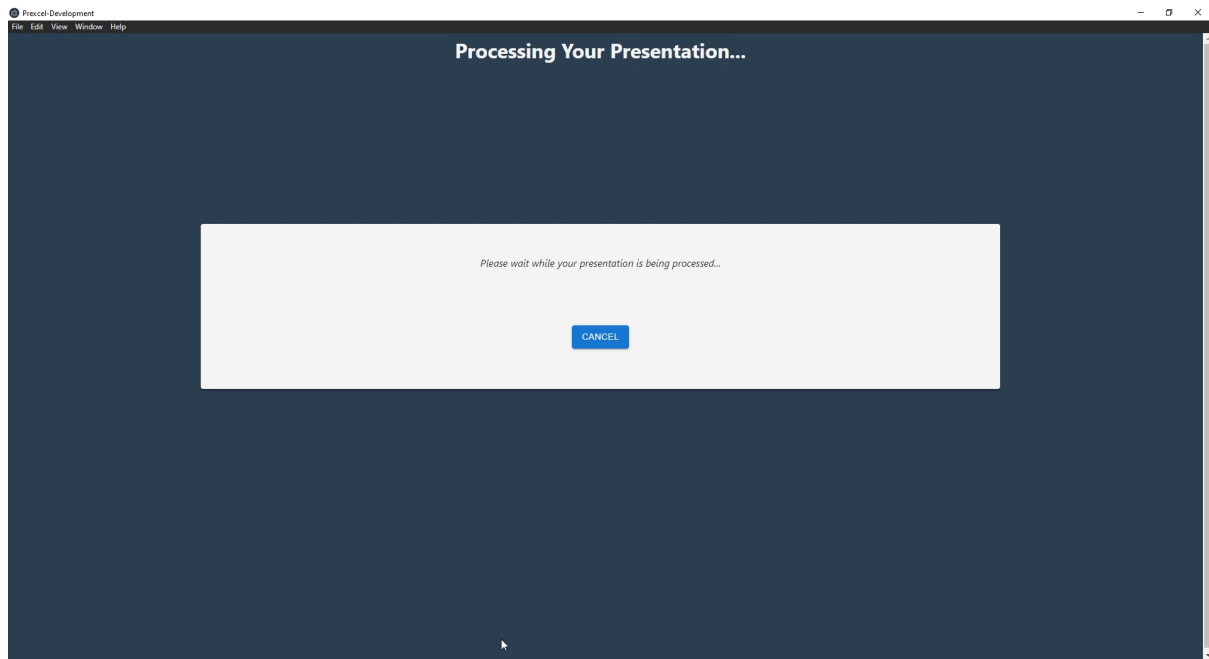


Figure 9. Upload Presentation Page (Presentation is being processed)

## 2.7 My Presentations

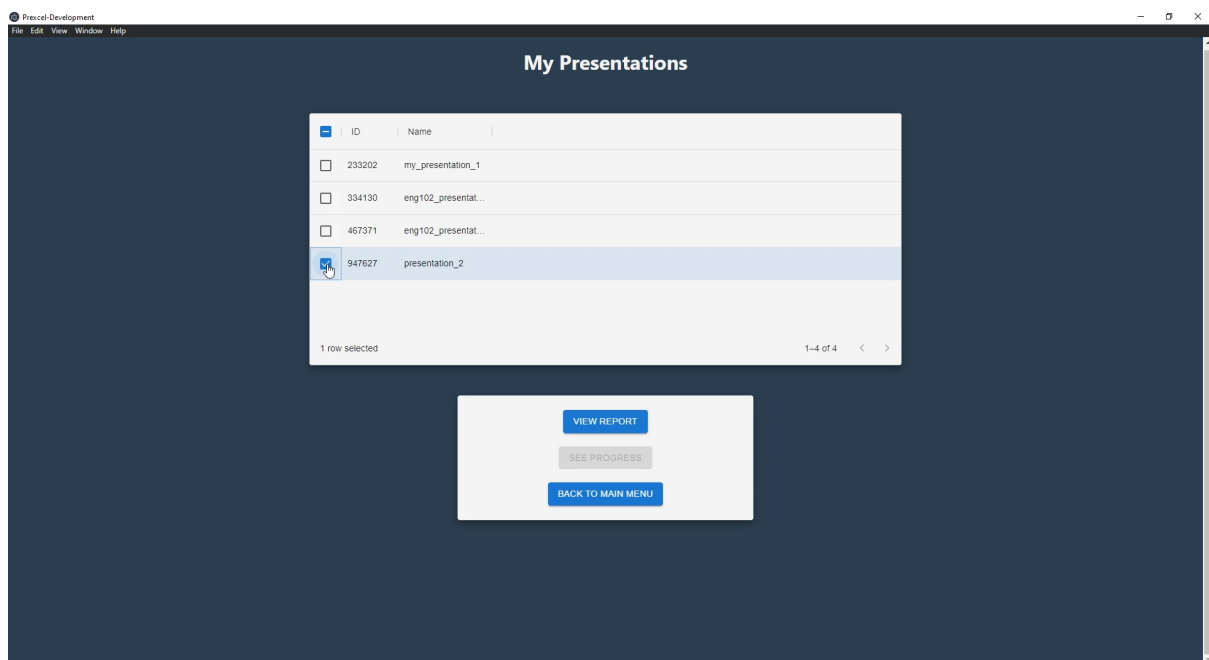


Figure 10. My Presentations Page

This page is where the user can select from their presentations and view their analysis reports. It is also possible to select more than one presentation and view the progress graph containing the scores of all selected presentations.

## 2.7 Report and Transcript Viewing

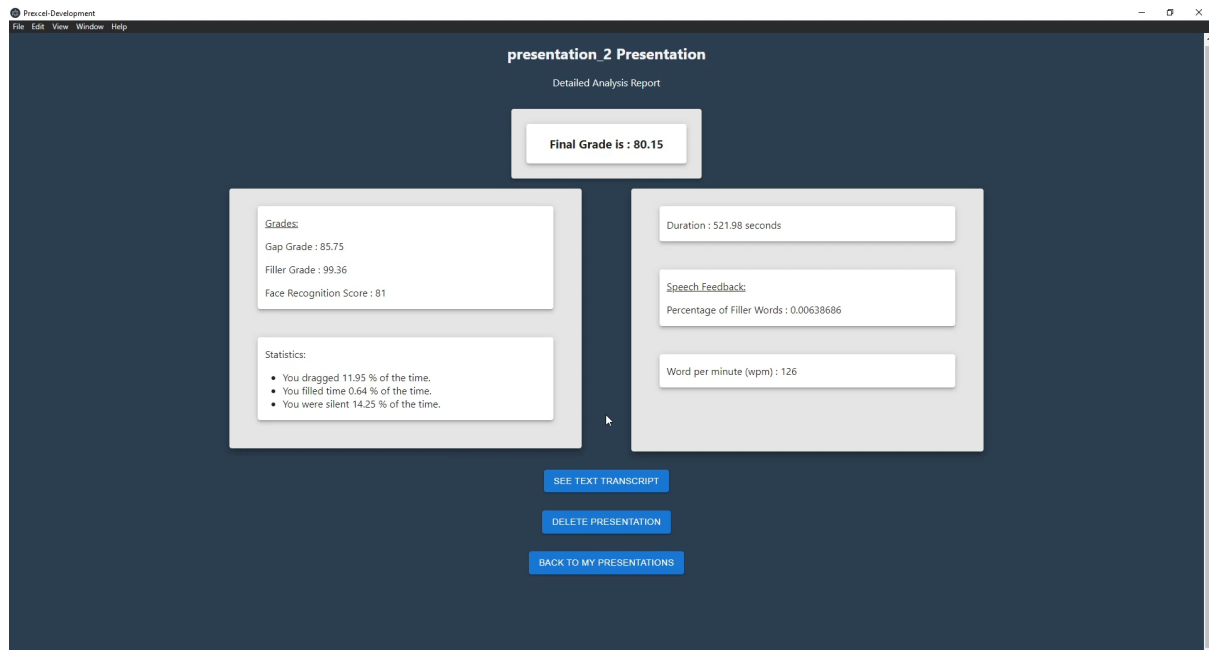


Figure 11. Detailed Analysis Report Page

After clicking on “View Report” for a particular presentation, the user is directed to this page. This page shows the presentation scores and various statistics about the presentation. It is also possible to view the transcript of the presentation or delete the presentation.

On the transcript screen, the user can observe different aspects of their presentations to improve them. Different categories are marked with different colors (For example, the red marks indicate a gap in that part). Furthermore, the ratios of those tags (For example, the ratio of filler words) are presented on this screen.

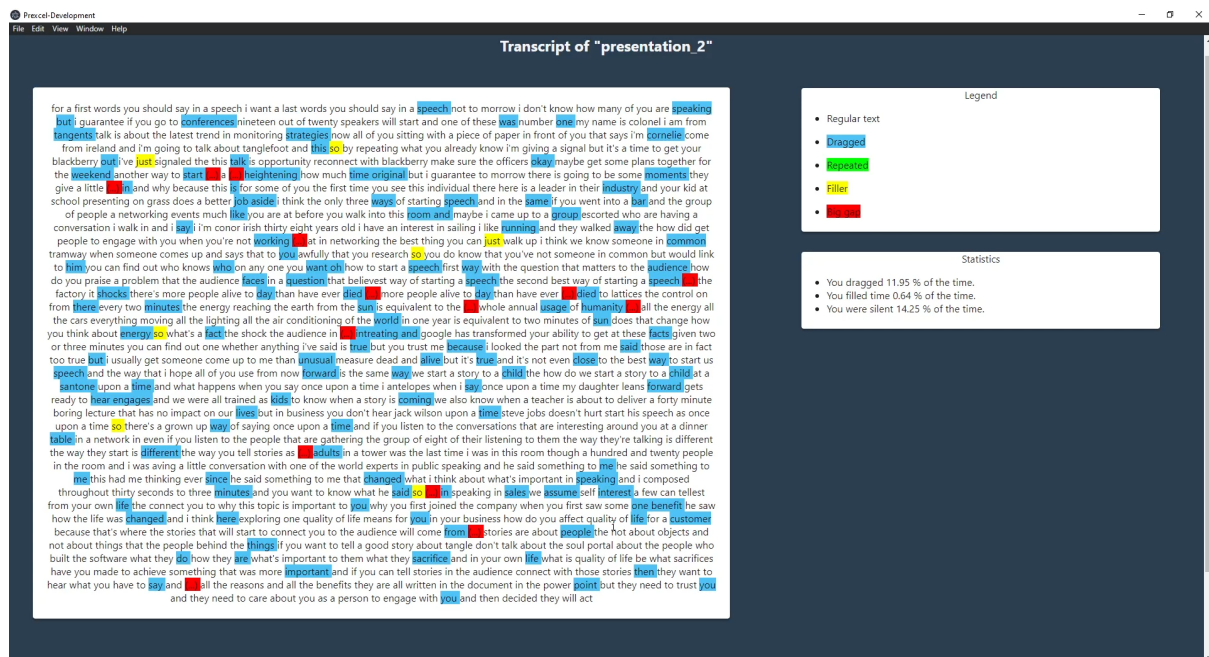


Figure 12. Transcript Details Page

The Transcript Details Page where the users can see the marked/analyzed texts painted on the screen according to different metrics such as dragged, repeated, filler, big gap words.

## 2.8 Progress Tracking

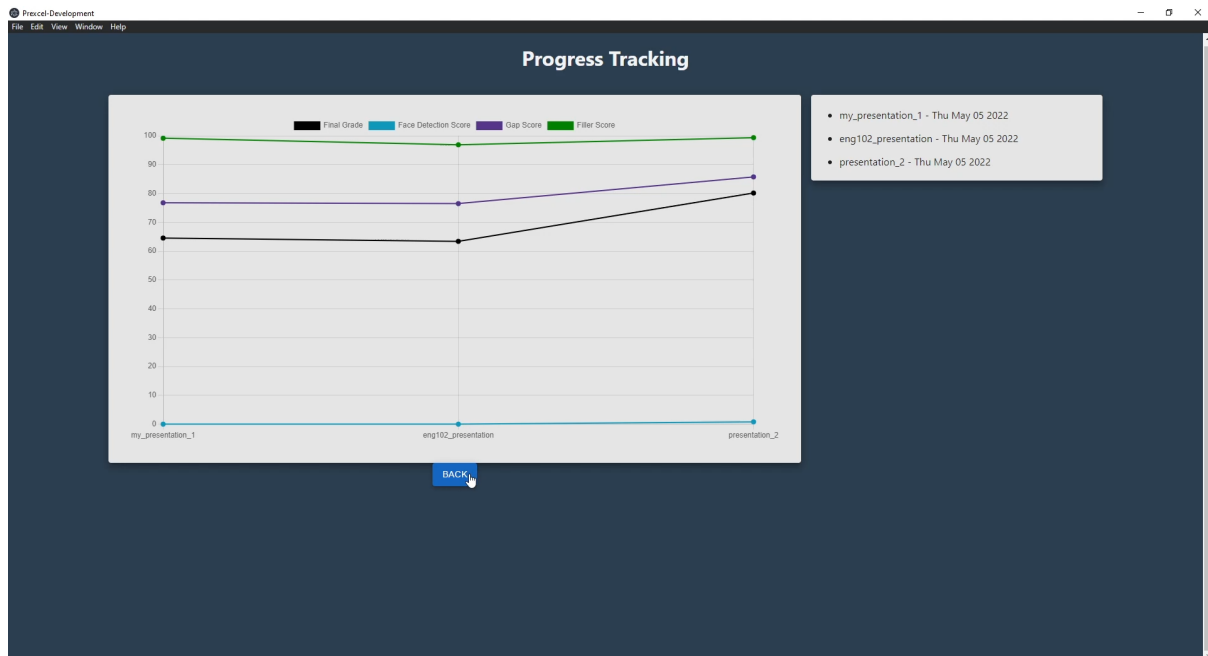
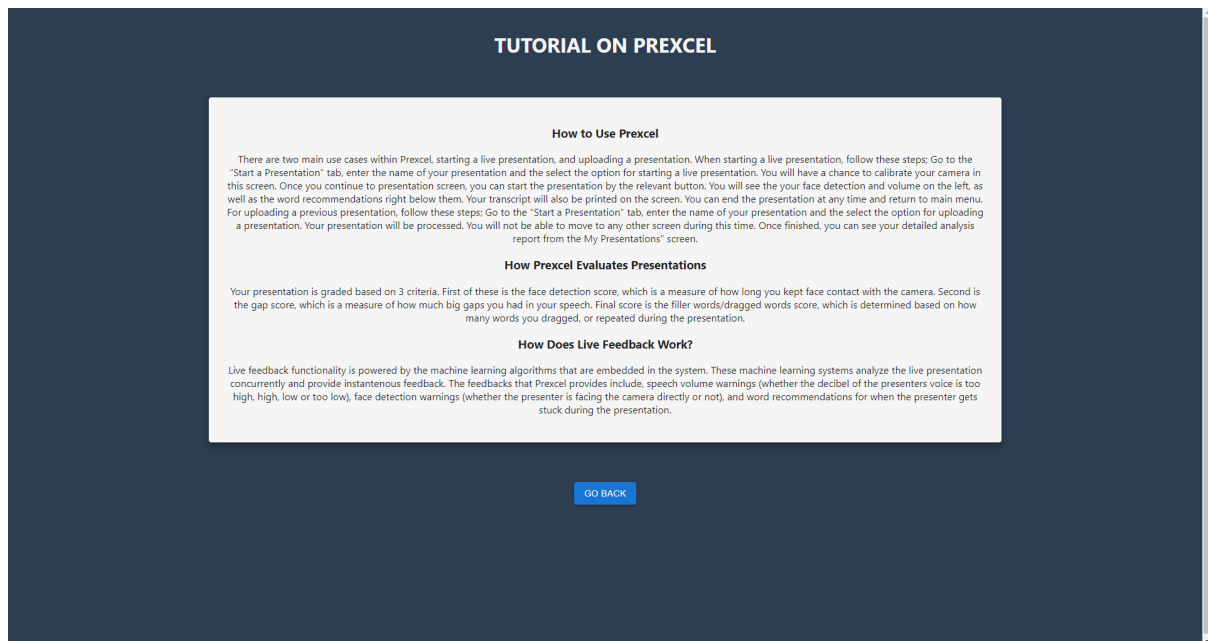


Figure 13. Progress Tracking Page

Progress Tracking page is where the users can track their progress over the selected presentations. The final grade and some other grades (Such as face detection grade) are presented to the user for each selected presentation. Users can click the colored grade boxes at the top in order to enable or disable that grade on the graph.

## 2.9 Tutorials

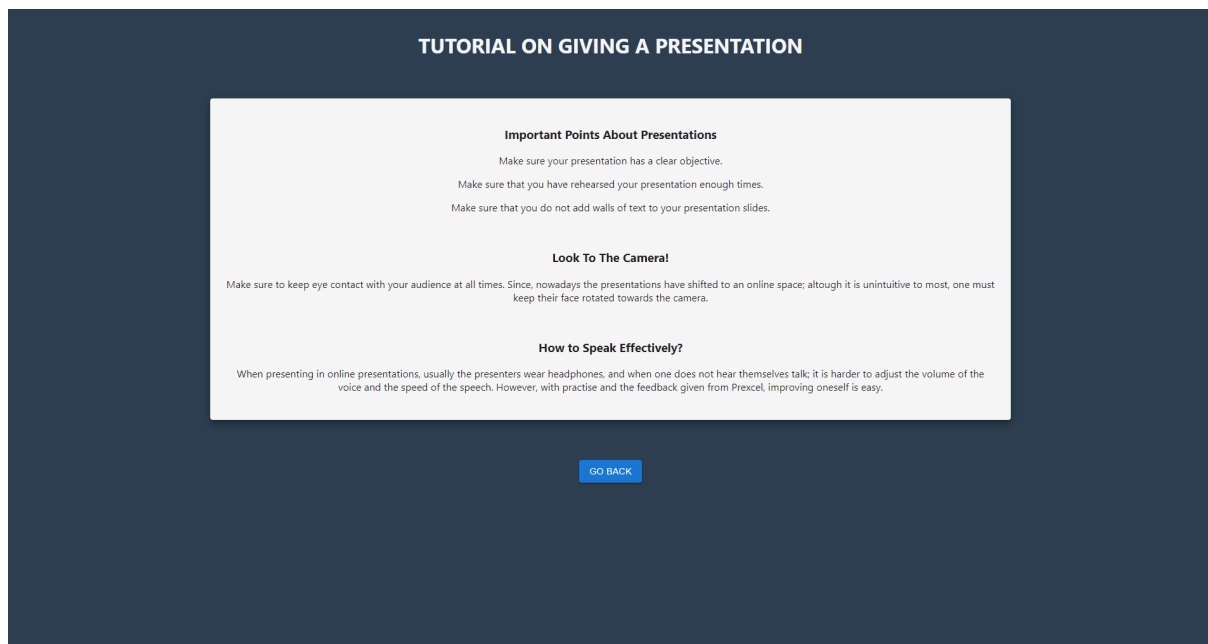
### 2.9.1 Tutorial on Prexcel



*Figure 14. Tutorial on Prexcel Page*

This page contains useful information about Prexcel. This information includes how to use Prexcel and how Prexcel evaluates its users' presentations.

### 2.9.2 Tutorial on Presentations



*Figure 15. Tutorial on Presentations Page*

This page contains general information on how to make an effective presentation

## 2.10 Account Details

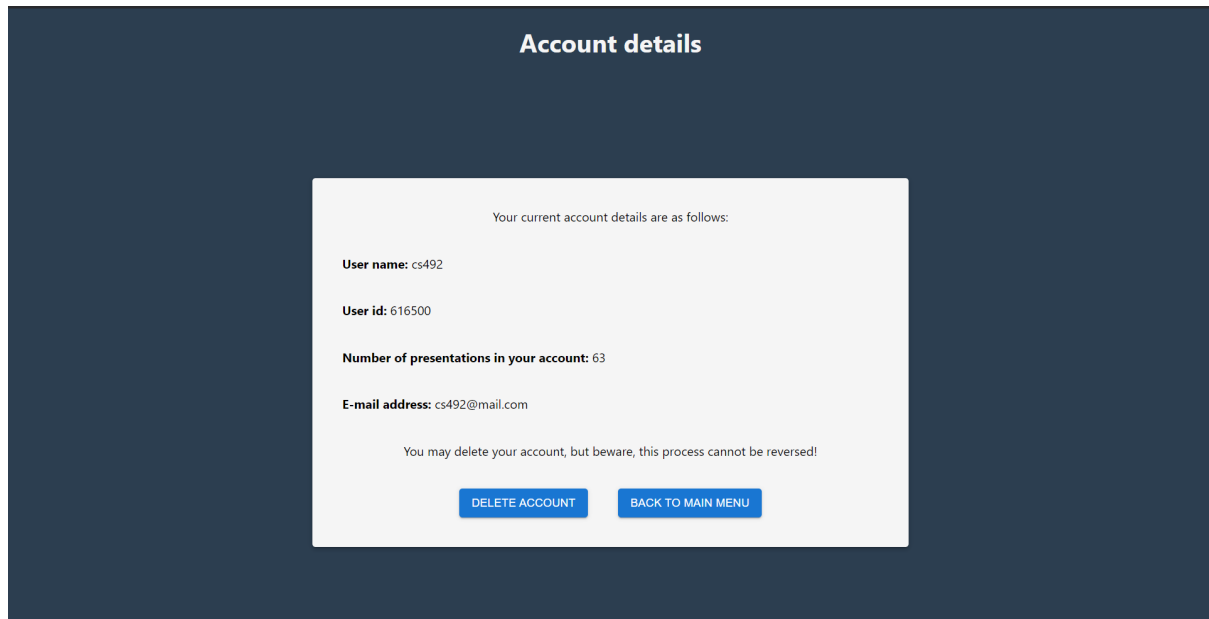


Figure 16. Account Details Page

This page shows the account details of the user. The account can also be deleted using the “Delete Account” button. However, this process cannot be reversed.

## 2.11 Chat Bot



Figure 17. Interactive ChatBot Page

An interactive Chat Bot Page where users can ask specific questions about Prexcel. They can ask frequently asked questions via this interactive ChatBot feature. FAQs are numbered as 1, 2, 3, etc. Users can access the related answer by sending the question number.