SignQuest

Complete User Guide

Contents

Hardware and software requirements

- Python 3.10.9
- Windows OS
- Webcam
- Installation of the required libraries using **"pip install -r requitements.txt"**

The main file to run is **app.py**

How to Start

1. **Choose a Lesson:**
   Begin by selecting a lesson that interests you. Each lesson contains a set of ASL words that you'll practice through various types of exercises.

2. **Exercise Types:**

   - **Repeat the Sign:**
     Watch a video of an ASL gesture and replicate it in front of your webcam. If performed correctly, you'll receive feedback and move on to the next exercise.
   - **Multiple Choice:**
     View a gesture video and choose the matching English word from a list. Your selection will be checked, and feedback will guide you to the next exercise.
   - **Type the Matching Word:**
     Watch an ASL gesture video and type the corresponding English word. Submit your answer to receive feedback and progress to the next exercise.
   - **Missing Word:**
     Complete a sentence by identifying the missing word and performing the matching ASL gesture in front of the camera.
   - **Sentence Exercise:**
     Perform a sequence of ASL gestures to match a given sentence. The required gestures will be listed, with the current gesture highlighted in blue.

3. **Complete the Lesson:**
   After finishing all exercises, your score will be calculated and displayed in the lesson summary. From there, you can return to the homepage and select your next lesson.

User Interface

In this part we will explain the functions of different screens in the user interface.

- **Homepage -** This is the main page that is shown to the user after logging in or starting the app. The homepage is displayed again whenever the user clicks on the SignQuest logo at the top-left corner. clicking on the button "Hello <username>" navigates to the "My Profile" screen. The "Admin Page" button is only visible to the admin and clicking it opens the admin module. The user can switch between light and dark mode with the button in the bottom-left corner of the screen. The user can logout by clicking on "Logout". In the navigation bar on the left side of the screen the user can browse through the list of the available lessons. completed lessons are marked with a V.
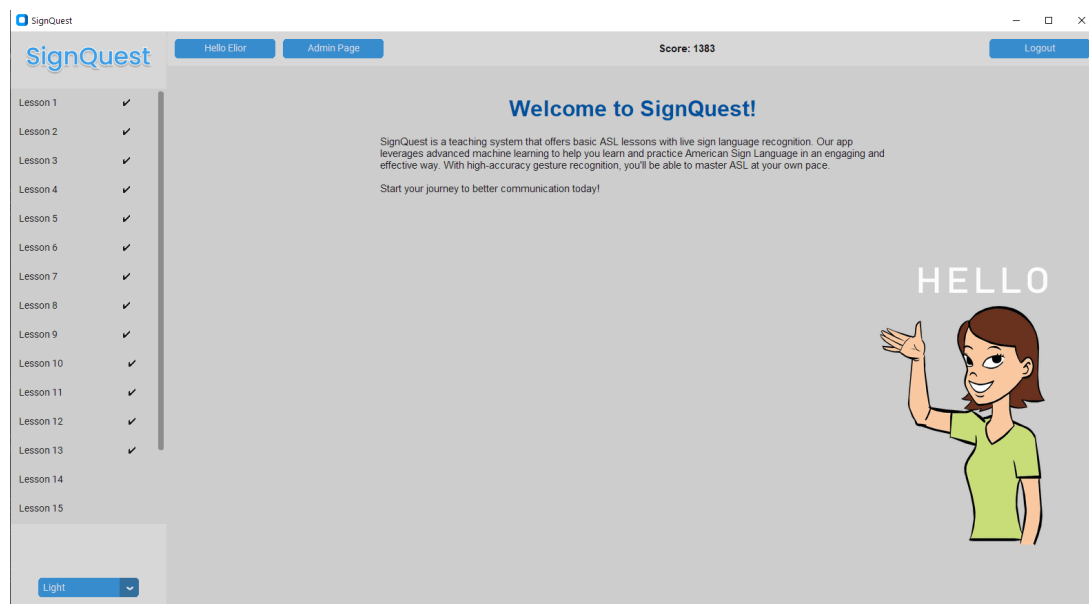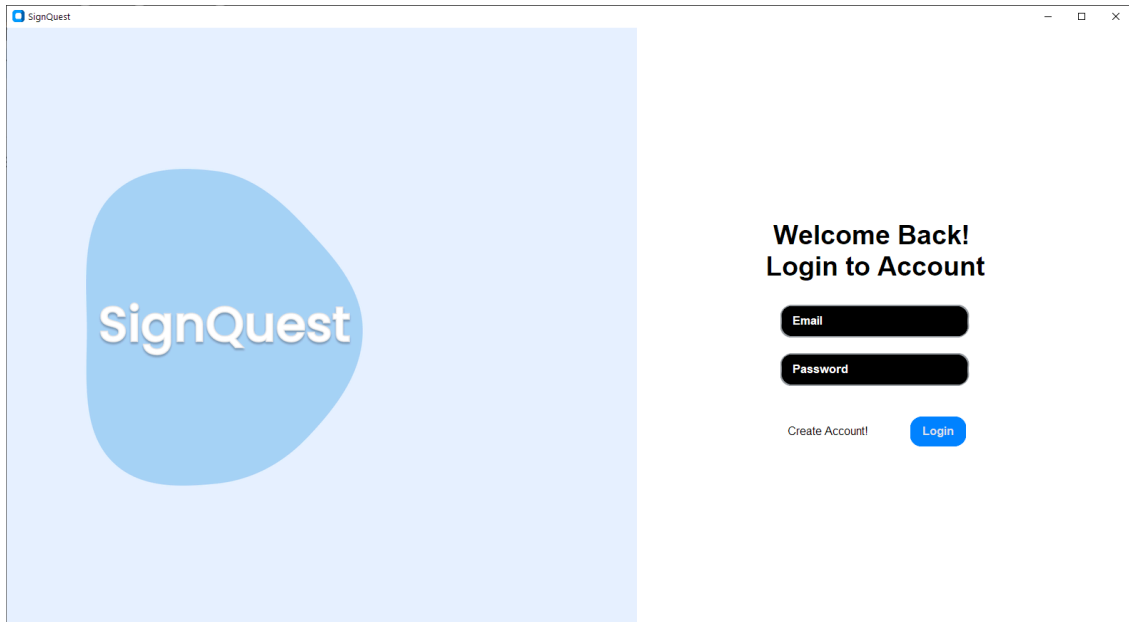

- **Start a lesson-** To start a lesson, the user can click on the lesson in the navigation bar and then click on the button "Start Lesson" that appears on the middle of the screen.
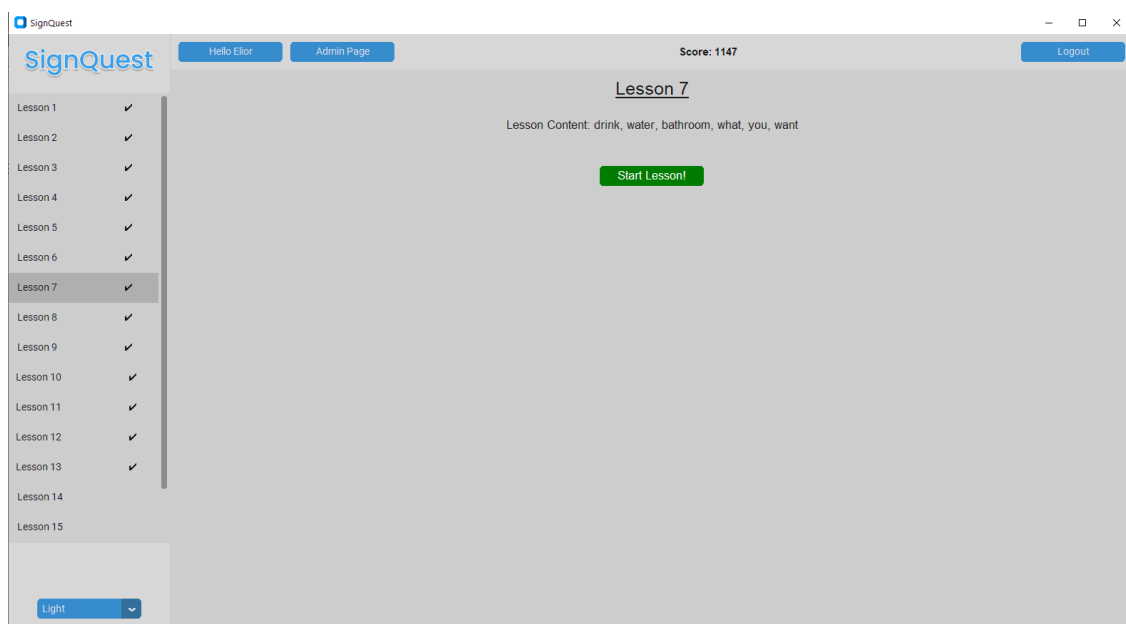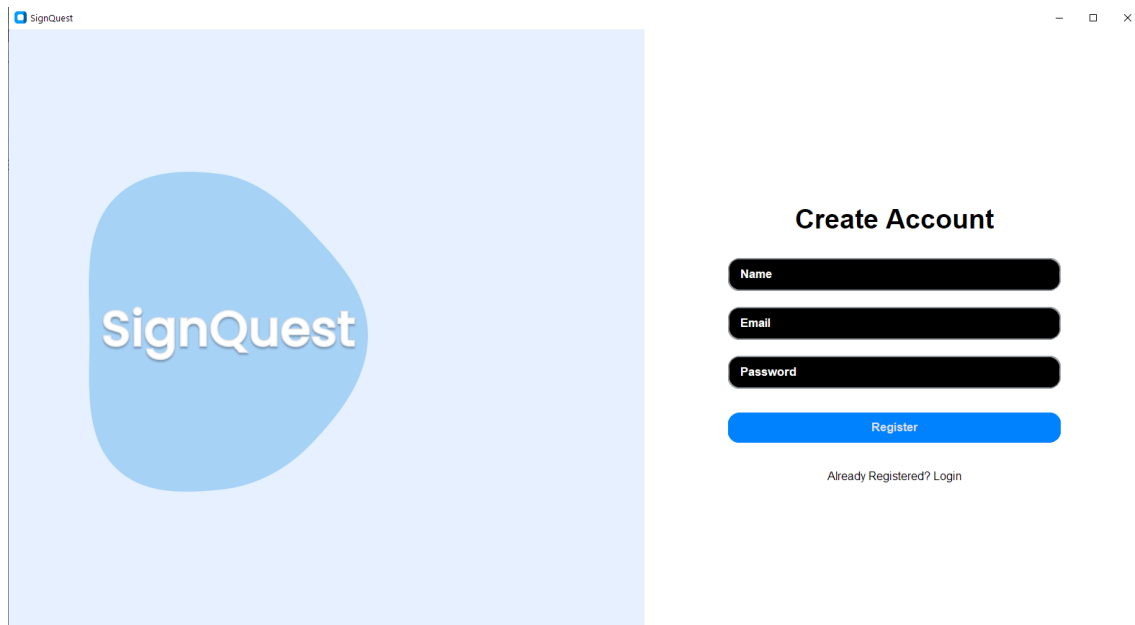
- **Login -** This is the first page of the application if you are not logged in. Login to the app requires email and password, if you don't have one you can click "Create account" and move to the registration.
  the admin credentials are: Email: elior676@gmail.com , password: 123

- **Register -** to register to the application you need to enter your name,email and password. After successful registration the user will be redirected to the login page.

- **My Profile-** In this screen, the user can see his display name, email, user ID and Total score. The user is also able to change the display name in this screen by typing a new name and clicking on "update".
  In addition, the user can change his password by typing his current password and a new password and clicking on "Change Password".

- **My Progress-** In this screen the user can see the percentage of the lessons he completed, the number of words he learned and the score he achieved in completed lessons.

- **Send Feedback**- In this screen the user can write a feedback on the overall user experience and give the system a rating between 1 and 5.


- **Repeat the sign exercise**-in this type of exercise the user is shown a video of a new asl gesture in the left square, and is asked to repeat it in front of a webcam.

  The matching English word for the gestures appears under the video and The camera video feed appears in the right square on the screen. After correctly performing the gesture, a feedback message will appear to the user and he will be moved to the next exercise.

  The user can see a progress bar at the top of the screen(in green) to track his progress in the whole lesson.
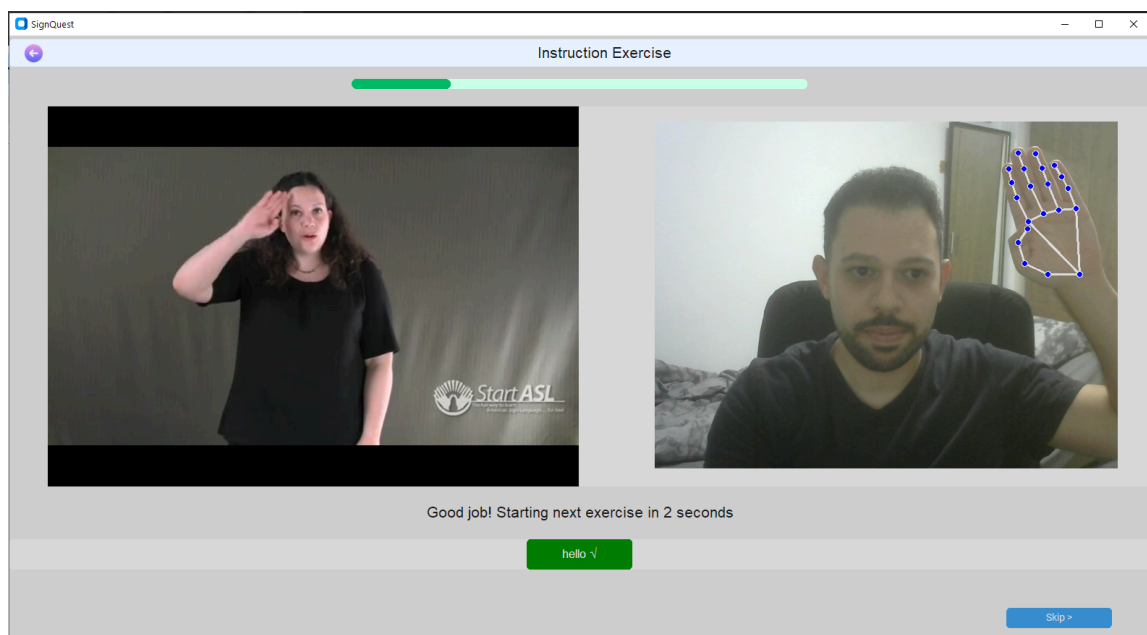
- **Multiple Choice Exercise**- In this type of exercise. The user is shown a video of a gesture and is asked to choose the matching English word by clicking on it.After clicking on one of the words, the user's answer is checked and he gets a feedback on his answer and is moved on to the next exercise.
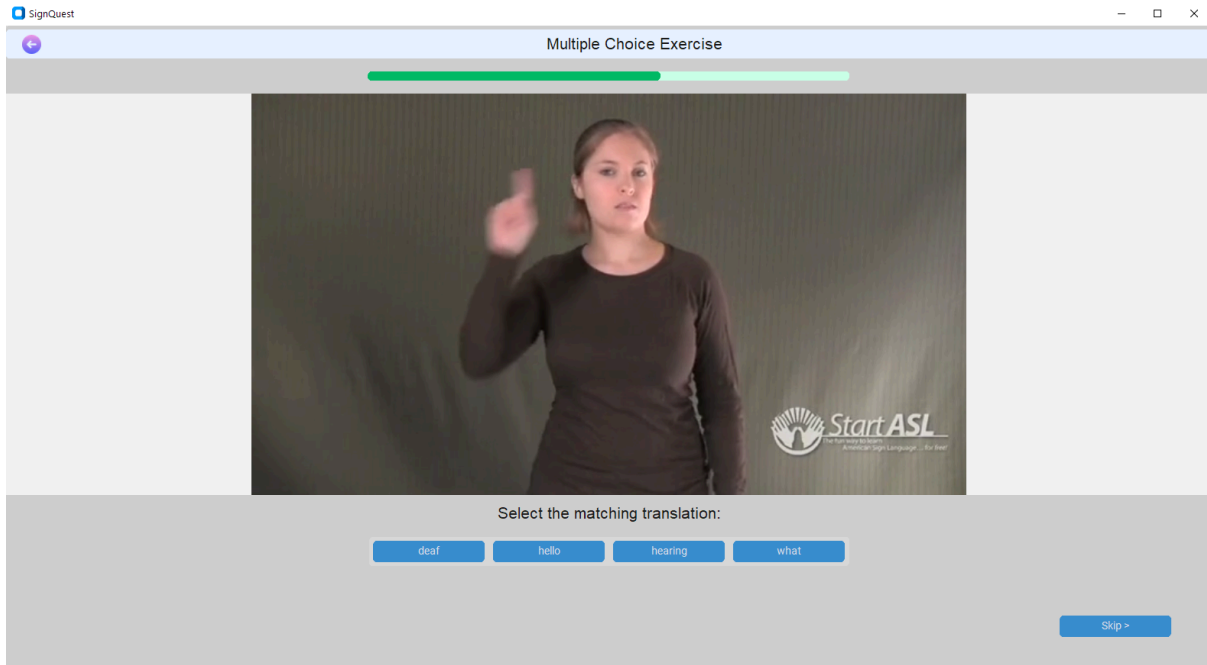


- **Type the matching word**- The user is asked to type the word that matches an ASL gesture video. After clicking on "Submit Answer" his answer is checked,he gets feedback on his answer and is moved to the next exercise
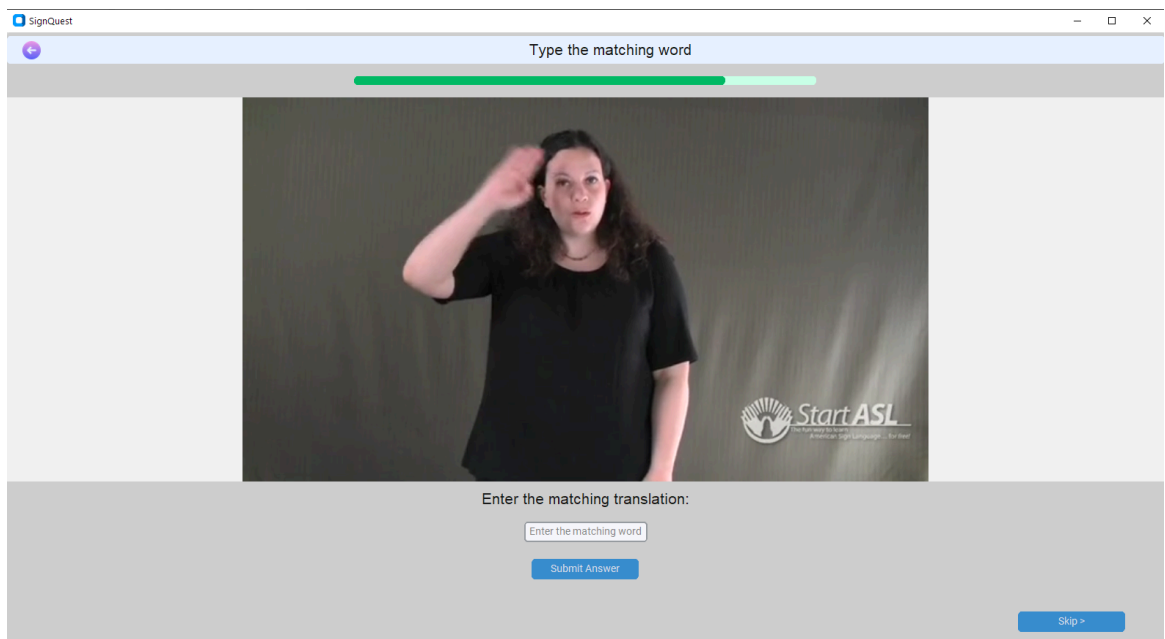
- **Missing Word Exercise-** The user is shown a sentence with a missing word.The user needs to understand what is the missing word and then perform the matching ASL gesture in front of a camera.
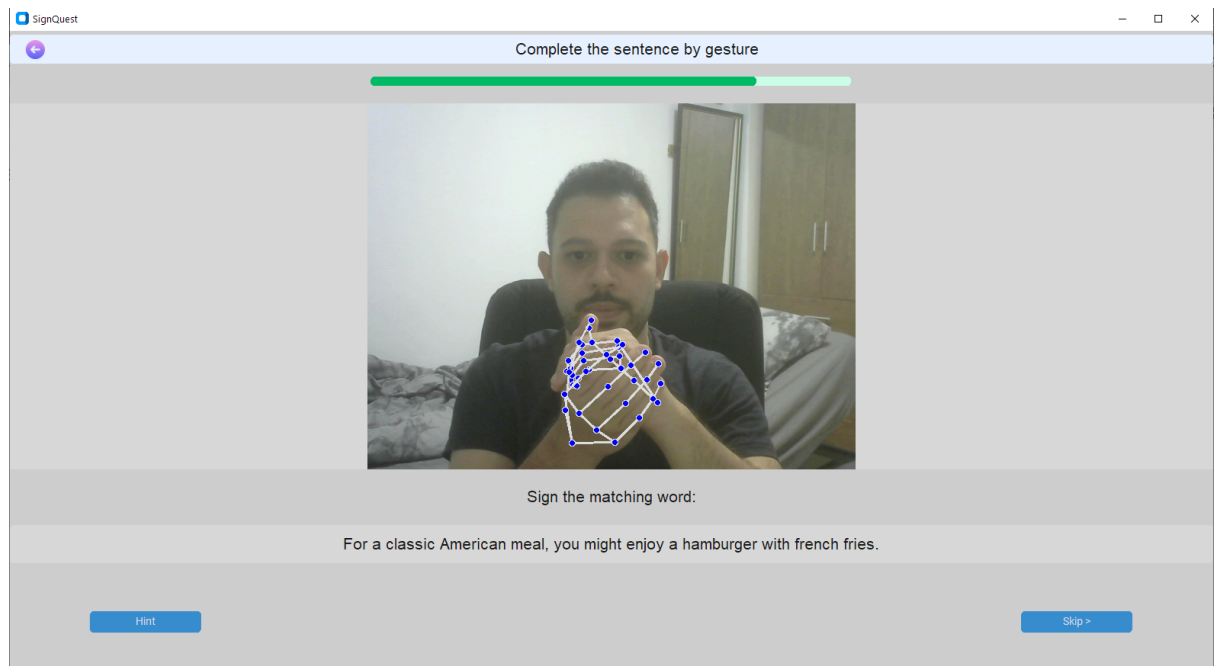
- **Sentence Exercise-** The user is shown a sentence and is asked to perform a number of ASL gestures that form the matching ASL sentence.The gestures that the user needs to perform are listed under the sentence. To help the user keep track of his progress in the exercise, the current gesture that the user needs to perform is marked in blue. The Order of words in the ASL Sentence might be different than in the English sentence and some words can be missing/altered due to the difference in the syntax between the languages(see the example below).
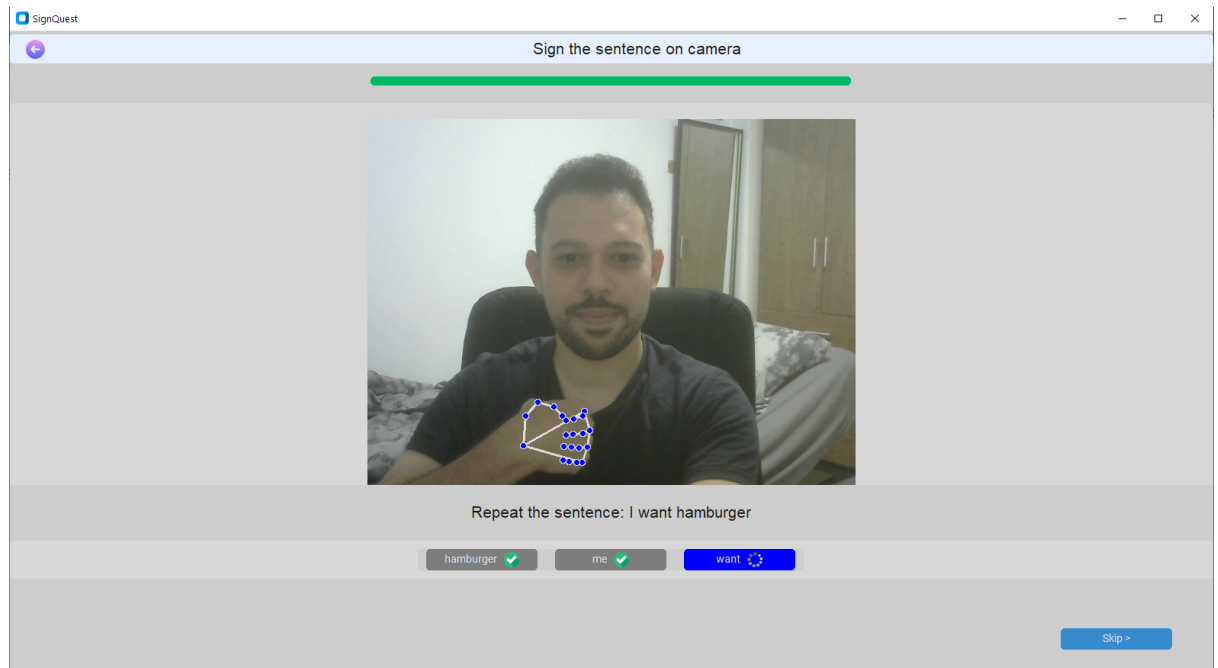
- **lesson summary-** after completing all the exercises in a lesson, the user's score in the lesson is calculated and displayed. the user can return to the homepage from this screen by clicking on the button at the bottom.
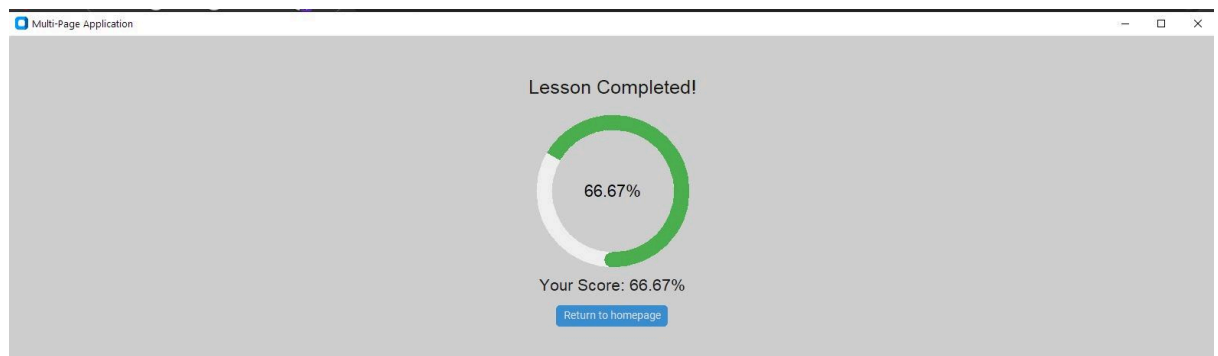
- **Admin's Manage Lessons-** in this screen, the admin can see a table of the lessons that are stored in the DB and their contents(list of words that are learned and practiced in the lesson).
  The user can edit the Lesson Content by clicking on Edit in the row of the lesson in the table.
  The admin can navigate between the exercises pages with the next and prev buttons, or by typing a page number in the field "jump to page" and clicking on "Go"..
  In addition, the admin can create a new lesson and add it to the DB by entering the lesson content, the list of words that will appear in the lesson in the "ADD a new lesson" section at the bottom of the screen. Clicking on "Submit" will save the lesson in the database.

- **Admin's Manage Exercises-** In this screen the admin can view a table of the exercises that are stored on the DB, including their IDs, the IDs of the lessons they belong to and their types.
 The admin can navigate between the exercises pages with next and prev or buttons or by typing a page number in the field "jump to page" and clicking on "Go".
  The admin can also Delete an exercise by clicking on the "Delete" button in the exercise's row.
  In addition, the Admin can edit an exercise by clicking on "Edit".
  The "Edit" button will open an exercise edit screen.

  The admin can create a new exercise by clicking on "Add a new Exercise" at the top of the screen, which will open the adding an exercise screen.
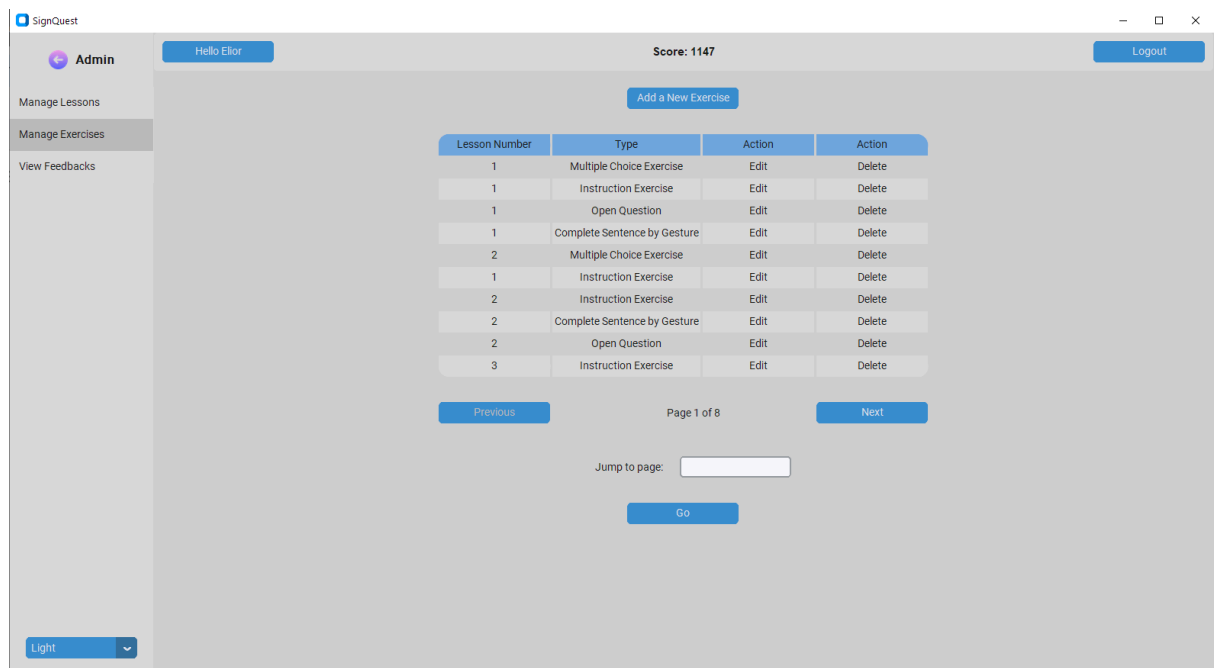
- **Admin's Edit Exercise -** After the admin chooses an exercise to edit in the "Manage Exercises" screen, the exercise editing screen is opened and an editing form is shown to the user according to the exercise's type.

  Below there is an example of the editing form for a multiple choice exercise. In the form the admin can edit the lesson id of the exercise, the exercise number(within the lesson order), the url of the video that is shown in the exercise, the list of possible answers and the correct answer. To save the changes the admin can click on "Submit".

- **Adding a new exercise** - In this screen the admin can add an exercise to the DB. in the toolbar at the top of the screen the admin can choose the type of the exercise he wants to add. After clicking on the exercise type, a form for entering the details of the exercise will appear. In the example below you can see the form for creating an instruction exercise (repeat the sign) where the admin needs to enter the lesson id, exercise number, an asl gesture video url and the gestures' matching English word ("Correct Answer").

- **Admin's view feedbacks** - In this screen the admin can view the feedbacks sent by users, including the IDs of the users that sent the feedbacks, the feedbacks, the rating each user gave the app and the dates the feedbacks were submitted