# 4. Non-functional Requirements

Performance Constraints  
1. **Throughput**: The system must be able to analyze and withstand a minimum of 100 concurrent users without failing or decreasing its efficiency.

2. **Real-time:** The system will perform real tome analysis of the user’s recordings and will provide feedback during the coaching session.

3. **Speed:** The system should handle every action the user making (registration, login, logout etc.) in a minimum of 5 seconds.

4. **CPU Usage:** The system should take no more than 20% of the device CPU

5. **Memory:** Since the system will be installed on the user phones the app should be no more than 5MB.

Reliability & Stability:  
1. **Fault Tolerance:** The system should recover gracefully from unexpected failures (no internet connection, dead battery etc.).

2. **Data Integrity:** The system should handle the data in the most accurate way without damaging the recordings.

3. **Error handling:** The system must provide informative error messages and logs to assist in trouble shooting and debugging (informative logs = happy developers).

4. **Back-Up:** Once a day the system should perform data-base backup.

5. **User-History:** The system should keep a log to backtrace any user’s action.  
  
Safety & Security:  
1. **Discrete:** The system should prevent the original user recording to be published or any other individual beside the recording’s user to hold the recording.

2. **User authenticator:** The system should authenticate the user identity every time he is logged in or performing profile actions (change password, change email, etc.)

3. **Encryption:** Sensitive information like user’s email, address etc. must be ancryped using SHA-512  
4. **Access Control:** Different user roles (e.g. administrators, regular users) should have distinct levels of access to system functionalities  
  
Portability:  
1. **Browser:** The system should be compatible with commonly used web browsers (Chrome, edge, safary, mozilla)

2. **OS:** The system must be compatible with popular OS systems for both pc and cellphone devices (android, iOS and Microsoft)

3. **Multilingual Support:** The system should support text in English and Hebrew, utilizing Unicode for character representation.

Usability:  
1. **Accessibility:** The system will adhere to accessibility standards to ensure usability for users with disabilities.

2. **User Training:** The system must be easy to use, self-explanatory and to aid those who struggling with the user interface (provide detailed icons, etc)

Availability  
1. The system must be available to the user 99% of the time (1% for scheduled maintenance).

Platform Constraints  
1.**Dev tools:** The system development utilizes Unity for the Front-End and Python for the Back-End along with MongoDB database and docker.

2. **Libraries:** The system will use (**TODO:** what libraries)

3. **Audio:** The system will be able to process wave and mp3 audio files.

SE Project constraints  
**TODO**

Special restrictions & limitations  
1.**Hebrew Support:** unfortunately, there are no good speech to text modules to support word fixing in the program feedback.

2. **Scalability:** The system must be as generic as possible so it will e extendable to more languages as tools like nlp and speech to text will catch the gap between them and English.