

# Bat kol

## Software Design Document

### Team:

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## **1. INTRODUCTION**

### **1.1 Purpose:**

This software design document describes the architecture and system design of BatKol.

This is an abstract SDD document since many of these are still not defined, and still might be changed over time.

### **1.2 Scope:**

- Understand what is the best approach to build a social network with a emphasis on Voice navigation on the app (Speech to text) And vice versa – mobile app or website, In terms of security, implementation, time, and design.
- Learn Voice based modern algorithms to create efficient software.

### **1.3 Overview:**

- Prepare the building blocks for the infrastructure of a social network that will later be fully implemented by the project.
- integrate our system with existing third-party systems that will already has a speech services implementation, we will test which one will best suit our requirements.
- Learn how to implement a navigation on our software by voice

### **1.4 Reference Material:**

might be in future .

## **2. SYSTEM OVERVIEW**

Sound-based social network app and that has an Interface that will allow to navigate the app based on sound (accessible for the visually impaired, and disabled)

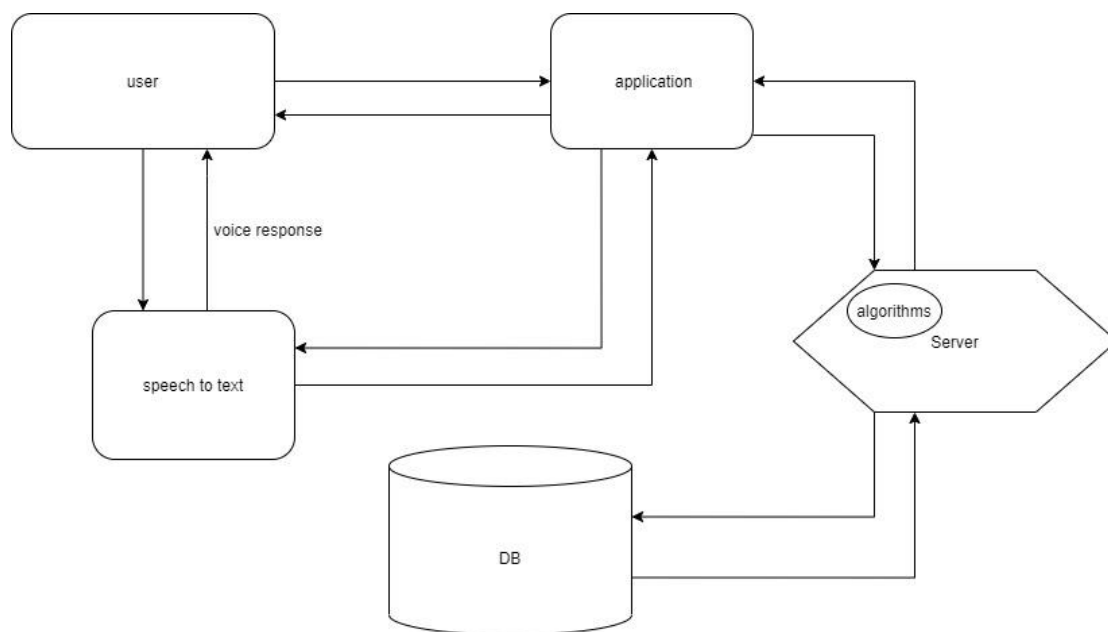
Using efficient algorithm that we will built during this project such as

- Recording search algorithm.
- Algorithm for identifying high recording volume and marking it to alert the user

- An algorithm for identifying dead times in recordings (for preferences only)
- Cocktail party effect for effective noise filtering.

### 3. SYSTEM ARCHITECTURE

#### 3.1 Architectural Design



#### 3.2 Decomposition Description

- **Application** - connects the users to the server and integrate with them
- **Server** – Read/Write from DB in user requests, check authentications and validation of input, mostly actions that require a lot of calculations(algorithms).
- **Database** – save our app data
- **Speech To Text** – system or a voice recognition system that capable of deciphering human speech. The input to the system comes from a microphone to which the user is speaking

### 3.3 Design Rationale

Our app flow is user will be asked in the start if he want a voice recognition/assistant.

If yes - our Speech To Text component will navigate our application by user commands

Else – use it like in “normal” social network user interact and render him

Application (Frontend) speak with the server (backend).

### 4.1 Data Description

use an noSQL DB – we currently aiming for mongoDB or firebase

A Document based Json Database.

We will store there:

- User details and connections (network of friend/likes and more..)
- links of users voice record
- post model
- comments per post
- models will expand over time

we will also use Storage:

Files of voice records.

Voice effects.

### 4.2 Data Dictionary

User – the user speaking to the STT(components).

STT – Speech To Text : component that translate the voice to command on the application we will use Google-STT in cloud.

Application – process the command and talk to the Server and wait to response. On response show or talk (speech) to the user the response from the server.

Server – process the data from the App and active on the data algorithm's like recognize loud voice, Identify dead times, Reduce momentary noise and speech to text for search prepose. After the process it send it the DB.

DB – receive and save the data from the server.

## 5.0 Component design:

We don't Know it yet. We are still trying to figure-out what is the best way to implement our software as we describe in 1.2.

## 6.0 Human Interface Design:

The user interact with our service by voice commands. That we let him navigate/use our app.

Another option to interact the app is with regular I/O (touch or keyboard and screen)

### 6.1 Overview of User Interface:

The user will see recordings in a picturesque way.

But the main thing is in the voice.

### 6.3 Screen Objects and Actions:

The app will be tik-tok like( one post per time ) but work on voice.

Thank You.

BaT-Kol.

