Smart Sound Switch - Architecture Specification

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# Document Owners

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# Overview

Smart Sound Switch is a mobile application which facilitates users on sound mode management. It smartly switches sound modes based on user’s current location and time. This facility is also extended for events that are stored in Google/Outlook calendar. In addition to that, alert notifications are also provided by analyzing the event details, user location and the time required to reach the event location based on the current traffic status.

Layers:

1)Data Layer

2)Application Layer

3)Presentation Layer

# Data store

## Overview

Pinned Locations, action mode, dates, timings, information from the outlook or google calendar are stored. The platform for data storage is SQLite.

## Schema

Category:

|  |  |
| --- | --- |
| Category\_id | Int(PK) |
| Category\_name | Char(10) |

Sub\_Category:

|  |  |
| --- | --- |
| Sub\_category\_id | Int(PK) |
| Sub\_category\_name | Char(10) |

Scenario\_data:

|  |  |
| --- | --- |
| Category\_id | Int (PK)( FK) |
| Sub\_category\_id | Int(PK)( FK) |
| Action\_id | Int(PK)( FK) |
| Category\_status | Int |
| Sub\_category\_status | Int |
| Location name | Varchar(50) |
| Location\_coords | Varchar(50) |
| Start\_time | time(7) |
| End\_time | time(7) |

Action:

|  |  |
| --- | --- |
| Action\_id | Int(PK) |
| Action\_type | Char(10) |

Days\_Repeat:

|  |  |
| --- | --- |
| Category\_id | Int (PK)( FK) |
| Sub\_category\_id | Int(PK)( FK) |
| Day\_Sun | bit |
| Day\_Mon | bit |
| Day\_Tue | bit |
| Day\_Wed | bit |
| Day\_Thu | bit |
| Day\_Fri | bit |
| Day\_Sat | bit |

# 

# Data Layer

## Overview

Executes the data commands which changes the mode of mobile according

to the user scenario. It stores the location categories, specific POIs along with preferences like start time, end time, days to be repeated, action to be performed.

## Component 1: Category selection -

Input: Hospitals, temples, churches, mosques, educational institutions.

Type: Varchar(30)

Output: The selected location categories are stored.

## Component 2: Specific POI selection -

Input: Specific POIs Lat - Long coordinates.

Type: char(10)

Output: Selected POIs stored.

## Component 3: Date / Start and End time settings -

Input: Time and date

Type: Timestamp

Output: Date / Start and End time stored.

## Component 4: Action -

Input: Normal, Mute, Mute with vibration

Type: int

Output: Status of action stored accordingly.

# Application Layer

## Overview

Performs the intended actions - switching modes based on user’s location and selected preferences.

## Component 1: Category selection -

Input: Chosen categories of locations from the presentation layer.

Output: Sound modes switched accordingly when user is at the selected category of location**.**

## Component 2: Specific POI selection -

Input: Specific POIs and preferences (start time, end time, days to be repeated, action to be performed) selected by the user from the presentation layer.

Output: Sound modes switched accordingly**.**

## Component 3: Calendar integration -

Input: Event details from preferred calendar (Google/ Outlook)

Output: Sound modes switched according to the details taken. Alert notifications providing the estimated time to attend the event based on the user’s current location and traffic status given.

# Presentation Layer

## Overview

User makes location selections based on different categories. Specific POIs can be added along with related preferences.

## Component 1: Category selection -

This component takes the different category of locations.

Input: ospitals, temples, churches, mosques, educational institutions.

Output: User selections stored accordingly.

## Component 2: Specific POI selection -

This component takes the specific POIs added by the user along with preferences such as start time, end time, days to be repeated and action to be performed.

Input: Specific POI selection from map and preferences which include - start time, end time, days to be repeated and action to be performed.

Output: User selections stored accordingly.

## Component 3: Calendar Integration –

This component takes the user’s choice of calendar selection.

Input: Options for selecting preferred calendar.

Contains either Google or Outlook calendar.

Output: Preferred choice of selection stored and action performed accordingly.