

# Product Design

## Team

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## Introduction

The purpose of the product design document is to provide a comprehensive guide for the development of the software system that will enable TheAtom's CMS team to create personalized meditation audio clips. The document includes a system overview, which describes the general functionality of the software system and some potential real-life scenarios of people using the product.

The design overview provides a high-level overview of how the system was partitioned into subsystems and how these subsystems collaborate with each other to achieve the desired functionality. It also identifies the roles and responsibilities assigned to each high-level subsystem. This section of the document helps gain a general understanding of how and why the system was decomposed, and how the individual parts work together.

The user interface section describes how users will be able to use the system to complete all expected features. This includes a description of how the software will enable the CMS team to produce high-quality audio clips by selecting templates and individual snippets, choosing the appropriate duration of silence, and customizing various options.

The model and sequence diagram sections provide more detailed technical information on the system's architecture and operation, and the design rationale section explains the reasoning behind key design decisions.

Overall, the product design document serves as a roadmap for the software development process and helps ensure that the final product meets the requirements and goals of TheAtom's personalized meditation audio clip platform.

## **System Overview**

The software system that we are designing for TheAtom aims to revolutionize the meditation experience by providing personalized meditation audio clips to users. The system's key function is to enable TheAtom's CMS team to easily and efficiently create a vast array of personalized meditation audio clips that cater to the unique preferences of each user.

In real-life scenarios, users could access TheAtom's software system through a web or mobile application. They would be able to choose from a variety of meditation categories and subcategories, such as stress relief, anxiety reduction, or improved sleep. After selecting a category, users would then be presented with a list of audio clip options, each personalized to their individual preferences.

The software system solves the problem of a lack of personalized meditation options available to users. Traditional meditation audio clips are often generic and not tailored to individual preferences or needs. TheAtom's software system provides a vast array of options that cater to the user's unique preferences and can be personalized to create a more meaningful meditation experience.

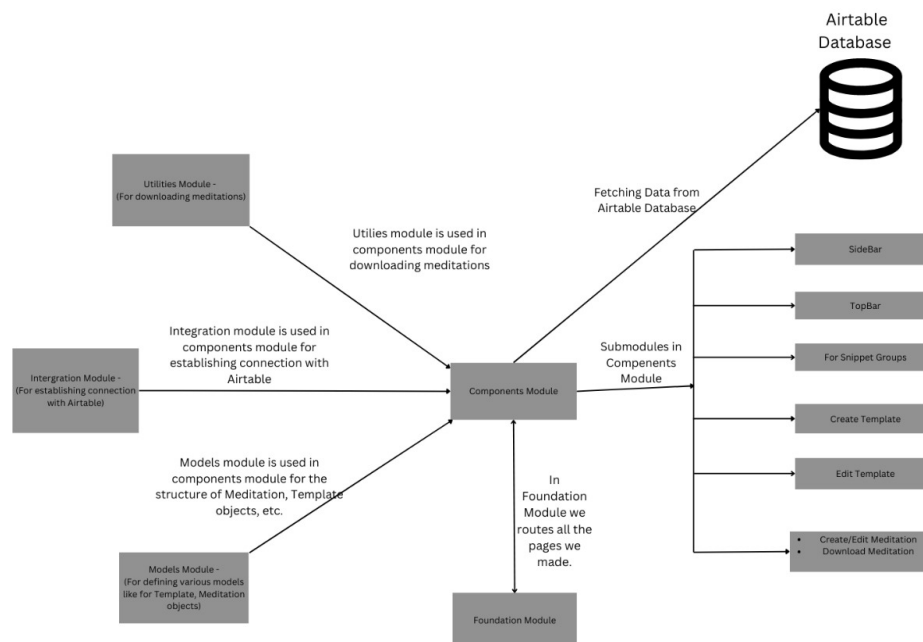
## **Design Overview**

### **Architectural design**

- The following key modules make up the codebase we created to assist TheAtom startup's CMS team in developing custom templates and meditations for their end users:

- **Foundation Module** -> This module majorly consists of index.html, App.tsx and other supporting files. This component uses the other modules(components) that we constructed and routes them to their appropriate routes.
- **Utilities Module** -> This module contains of helper.js which is used by us to download the individualized meditation that the CMS team generated. This module is reused when we want to download the meditation after creating it, for example in the create/edit meditation submodule.
- **Integration Module** -> The Airtable api connection is made using this module. We utilize Airtable as a database to hold a variety of items, including template data, meditation data, snippet group data, etc. Every time we wish to do a CRUD operation on the Airtable, we reuse this module.
- **Models Module** -> This module defines models for a variety of items, including Snippet Group, Template, Sub-Templates, and Meditation. Wherever we use these objects, for instance when using the components module, we can reuse the models made in this module.
- **Components Module** -> This is the largest module in our codebase and it is made up of several smaller modules, such as those for Sidebar, Topbar, For Snippet groups, etc., which are commonly utilized throughout the website as they serve as UI building blocks. It also includes a number of submodules, such as those for generating templates, editing templates, and making meditations. The submodules in this section employ the modules that were previously discussed to build the final interface that the CMS team may use to create and edit templates and meditations.
- Overall, the system decomposition process went as follows:
  - Since we knew we wanted to create a tool that would allow the Atom startup's CMS team to create personalized meditation, we began by creating the components module, which included substructures such as creating templates, which would then be used to create personalized meditation using the create meditation substructure.
  - Separate substructures were also created for editing templates and meditation. Next, we created substructures for the Sidebar, Top-bar, and snippet groups because they will be used throughout the UI and comprised the basic skeleton of the UI.

- The models module was created in accordance with the structure that the meditation and templates will follow before we began storing data to Airtable's backend.
- Finally, we created the Integration and utilities module to interface the frontend with Airtable.
- We finally combined the entire construction in the foundation module after finishing all the pieces, giving each component the proper route.
- Diagram (with relationships)



## System interfaces

### User Interface

The user will be able to use TheAtom's software system through a web or mobile application to complete all the expected features. The expected features include choosing a meditation category and subcategory, selecting an audio clip, customizing the audio clip duration, level of silence, and randomizing the selection process.

Upon accessing the system, the user will be presented with a variety of meditation categories and subcategories to choose from, such as stress relief, anxiety reduction, or improved sleep. The user will then be able to select a subcategory that best suits their needs, such as deep breathing or visualization.

After selecting the subcategory, the user will be presented with a list of personalized audio clip options. The user can then select an audio clip that best suits their preferences, such as the type of ambient noise or music included in the clip.

To customize the audio clip duration, the user can adjust the start and end times of the clip or choose a pre-defined clip length. The level of silence can also be customized, such as adjusting the duration of silence between snippets of the audio clip.

In addition, the user can choose to randomize the selection process, which will randomly generate a personalized audio clip based on their selected preferences.

Overall, the user can easily use TheAtom's software system through a web or mobile application to complete all the expected features, including choosing a meditation category and subcategory, selecting an audio clip, customizing the audio clip duration, level of silence, and randomizing the selection process. The system is designed to be user-friendly and intuitive, providing a personalized meditation experience tailored to the individual's needs and preferences.

## APIs

Our system makes use of the Airtable API to retrieve data from the templates, meditations, and snippet groups that we have saved in the Airtable database. These templates and snippet groups may then be utilized to construct meditations that users(TheAtom's CMS team) can download.

## Model

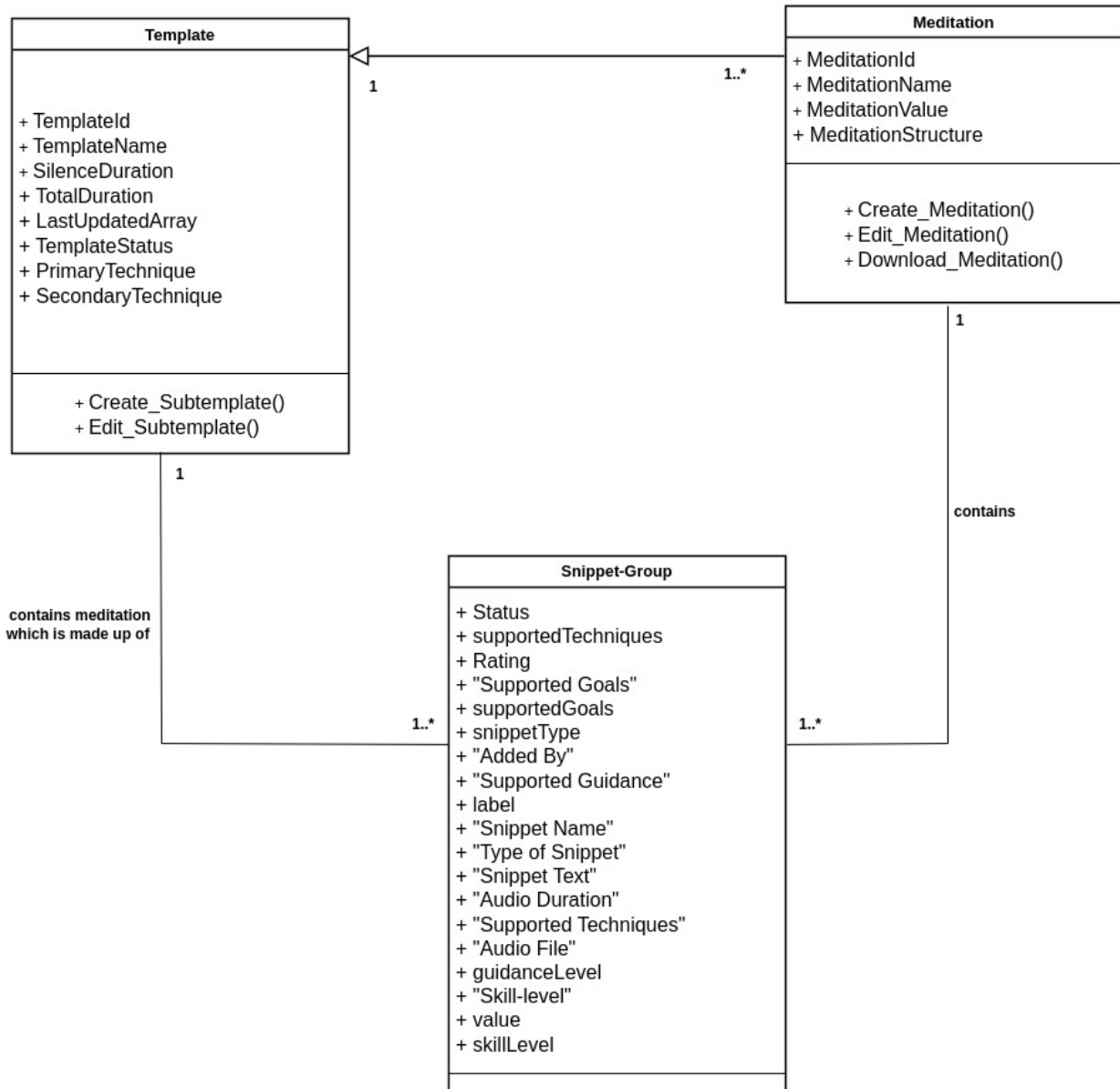
### Template Class

The template class is responsible to maintain the following quantities: `TemplateId` , `TemplateName` , `SilenceDuration` , `TotalDuration` , `LastUpdatedArray` , `TemplateStatus` , `PrimaryTechnique` , `SecondaryTechnique` The template class has the following methods: • `Create_Subtemplate()` : For a selected `SilenceDuration` and `TotalDuration` , this class will take the input of the

	<p>template structure for that sub-template. • <b>Edit_Subtemplate()</b> : For a selected <b>SilenceDuration</b> and <b>TotalDuration</b>, this class can add/delete snippet groups or silence to edit that sub-template. Calling these methods for various values of <b>TotalDuration</b> and <b>SilenceDuration</b> will allow the user to create the complete template.</p>
<b>Meditation Class</b>	<p>The meditation class is responsible to maintain the following quantities: <b>MeditationId</b>, <b>MeditationName</b>, <b>MeditationValue</b>, <b>MeditationStructure</b> The meditation class has the following methods: • <b>Create_Meditation()</b> : For a selected Template, <b>SilenceDuration</b> and <b>TotalDuration</b>, this class will follow the Template structure as it's <b>MeditationStructure</b> and take's the input of Meditation value for that Meditation Strucure. • <b>Edit_Meditation()</b> : Here, the meditation will again take the input of Template, <b>SilenceDuration</b>, <b>TotalDuration</b> which will decide the value of <b>MeditationStructure</b>. This method will also have the option to add snippet group and silene duration to customize the <b>MeditationStructure</b>. Then the input of <b>MeditationValue</b> is taken for the corresponding <b>MeditationStructure</b>. • <b>Download_Meditation</b> : Once the meditation is created using the <b>MeditationStructure</b> and <b>MeditationValue</b> this method can download that meditation.</p>
<b>Snippet-Group Class</b>	<p>This class is used to store all the available snippet groups and it maintains the following quantities: <b>Status</b>, <b>supportedTechniques</b>, <b>Rating</b>, <b>"Supported Goals"</b>, <b>supportedGoals</b>, <b>snippetType</b>, <b>"Added By"</b>, <b>"Supported Guidance"</b>, <b>label</b>, <b>"Snippet Name"</b>, <b>"Type of Snippet"</b>, <b>"Snippet Text"</b>, <b>"Audio Duration"</b>, <b>"Supported Techniques"</b>, <b>"Audio File"</b>, <b>guidanceLevel</b>, <b>"Skill-level"</b>, <b>value</b>, <b>skillLevel</b> Currently, this class does not have any significant method, since it can be edited only by theAtom's team, i.e. creating or deleting or editing of the Snippet-groups in airtable is done only by theAtom's team. Instead in our codebase this class is used at places where we used the snippet-groups for example in create/edit templates and meditation.</p>

The corresponding class diagram is as follows:

## CLASS DIAGRAM

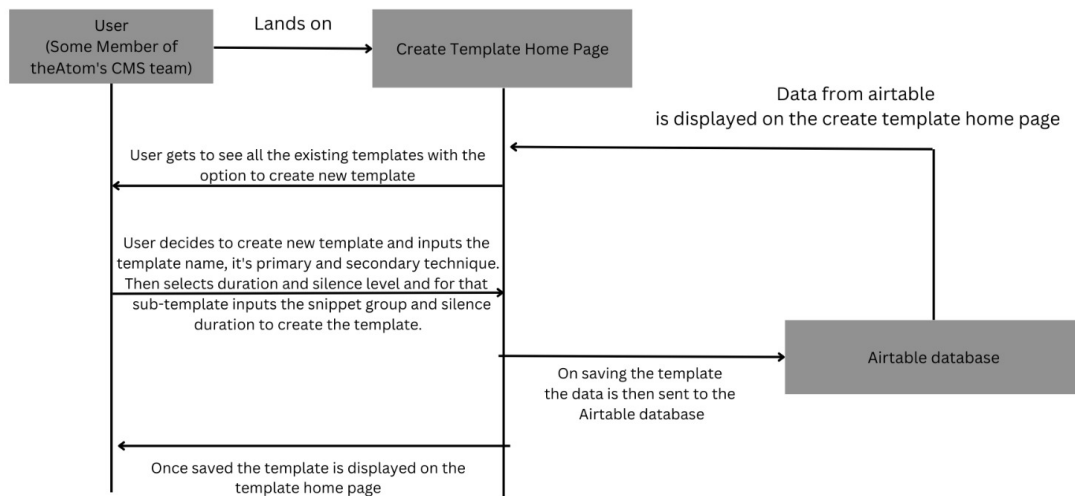


## Sequence Diagram(s)

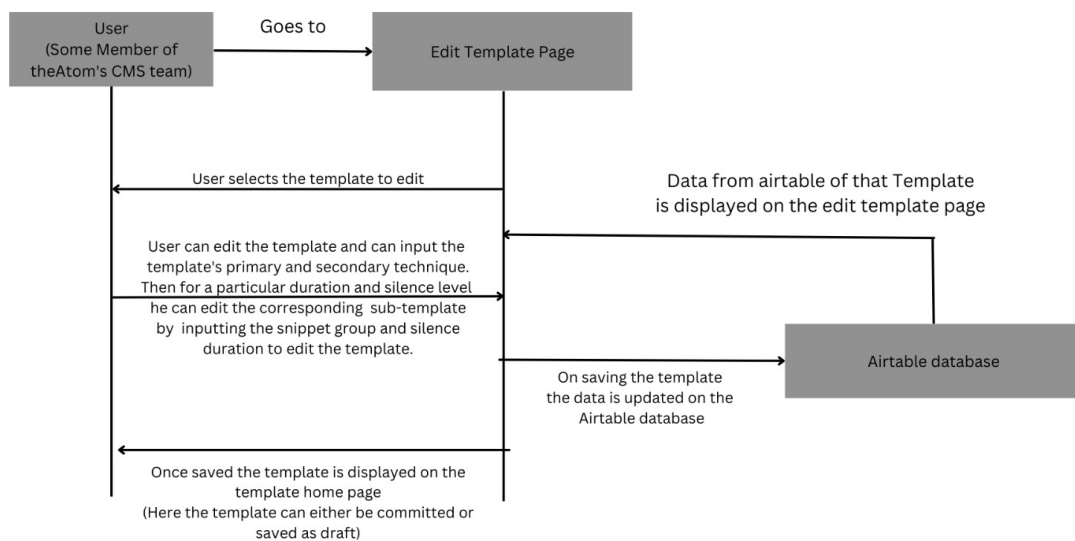
- The 4 major use cases include :
  - Create Template
  - Edit Template
  - Create Meditation

- Edit Meditation

- Create Template

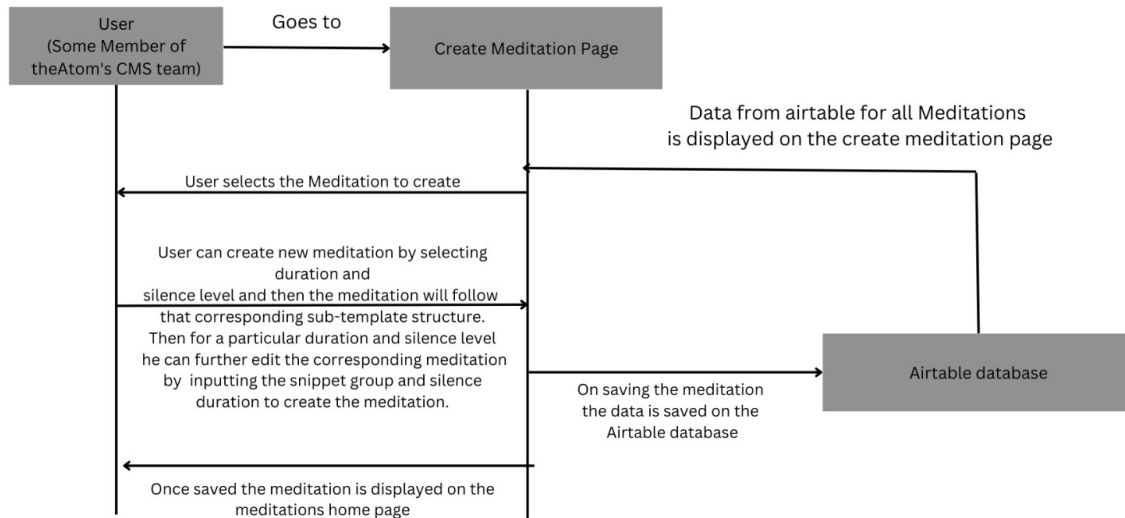


- Edit Template

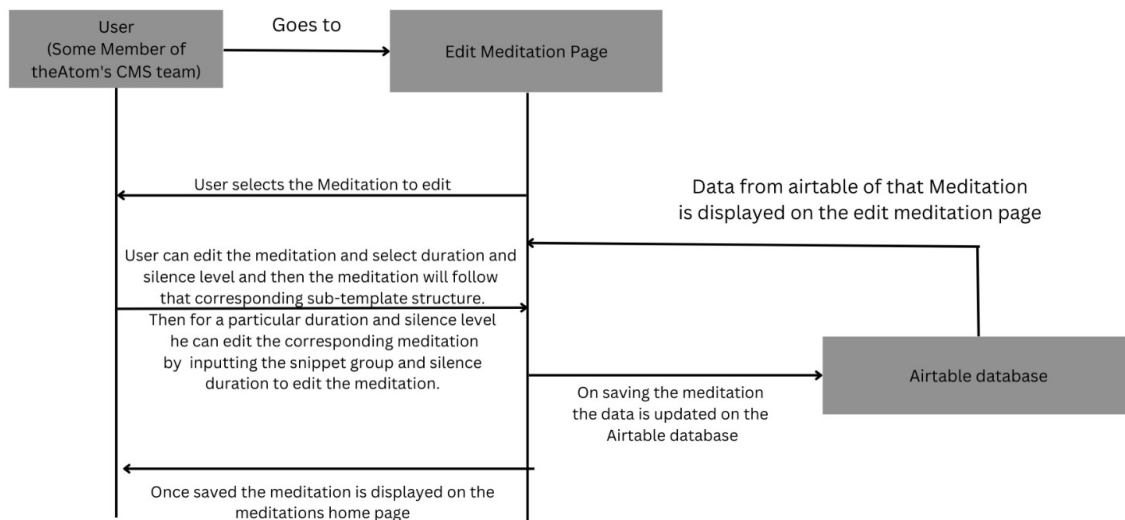




## • Create Meditation



## • Edit Meditation



# Design Rationale

- Our first design included only the meditation page, where after making a meditation, we could simply download it, with no option to save the meditation.
  - There were also only a handful saved templates that could be utilised to create a meditation.
- With the second design, instead of using pre-existing templates, we provided the option of generating a template, which is saved in the Airtable database.
  - We also provided the edit template functionality. We also provided a feature to temporarily draft the template when we wish to edit it.
  - The meditation page now included the templates that we designed.
- After that, we realized in the third design that we had no choice to save the meditations till the second design. The user can download it but has no way to save it.
  - As a result, we designed another page for meditation creation, where the user can create a meditation, save it in the airtable database, and then edit /download option for meditation whenever they want.
- Now, in the most recent edition, in addition to all of the above-mentioned design considerations, we displayed %silence level, %Duration to make the meditations even more tailored for different types of users. Duration field in meditations helps the creator better understand the type of meditation he created.