# Detailed Design Document: ZenFlow

## 1. Introduction

### 1.1 Purpose

The purpose of this document is to provide a detailed overview of the design and architecture of the ZenFlow, outlining its features, functionality, and technical specifications.

### 1.2 Scope

The website aims to offer users a platform to create, edit, organize, and search for notes efficiently.

### 1.3 Objectives

* Provide a user-friendly interface for creating and managing notes.
* Implement robust security measures to protect user data.
* Ensure scalability to accommodate future growth.
* Facilitate collaboration for users who wish to share and work on notes together.

## 2. System Overview

### 2.1 System Architecture

The system will follow a client-server architecture with a responsive web-based front end and a back-end server.

### 2.2 Key Features

* User registration and authentication
* Note creation, editing, and deletion
* Organization and categorization of notes
* Search functionality

### 2.3 User Roles

* Guest
* Registered User

### 2.4 Technologies Used

* Front-end: HTML, CSS, JavaScript (React)
* Back-end: Node.js
* Database: MongoDB
* Authentication: JWT
* Additional tools/libraries as needed.

## 3. Database Design

### 3.1 Entity-Relationship Diagram

* User Entity:
  + UserID (Primary Key): Unique identifier for each user.
  + Username: User's username for identification.
  + Email: User's email address for communication.
  + Password: Securely stored password for authentication.
* Note Entity:
  + NoteID (Primary Key): Unique identifier for each note.
  + Title: Title of the note.
  + Content: Main content of the note.
  + CreatedAt: Timestamp when the note was created.
  + UpdatedAt: Timestamp when the note was last updated.
  + Relationships:
    - UserID (Foreign Key): Relates each note to the user who created it.
    - CategoryID (Foreign Key): Relates each note to a category (if categorized).
* Category Entity:
  + CategoryID (Primary Key): Unique identifier for each category.
  + Name: Name of the category.