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Software Requirements Specification (SRS) for Water Droplet Collection Game

1. Introduction

1.1 Purpose: This document aims to outline the specifications for the Water Droplet Collection Game, detailing the system's features and constraints to guide the development process.
1.2 Document Conventions: This document follows the standard SRS outline as recommended by IEEE SRS guidelines.
1.3 Intended Audience and Reading Suggestions: This document is intended for the development team, and professor. Readers should be familiar with software development terms and processes.
1.4 Project Scope: The project will encompass developing a user management system and enhancing an existing game to include additional gameplay mechanics and difficulty levels.

2. Overall Description

2.1 Product Perspective: The system is a standalone game application with user authentication and score tracking capabilities.
2.2 Product Features:
User authentication: Sign up, sign in, play as guest.
Game enhancement: Water droplet collection with varying speeds and difficulty levels. Sound effects and score tracking against global best scores.

3. System Features

3.1 User Authentication:
3.1.1 Description and Priority: High priority. Secure authentication system for user registration and login.
3.1.2 Functional Requirements:
The system shall allow users to sign up using first name, last name, DOB, profile picture, unique username, and password.
The system shall enforce password complexity requirements.
The system shall display user's name, profile picture, and current date post-login.
The system shall display birthday greetings if the login date is the user's birthday.

3.2 Game Functionality (Sprint 2):

3.2.1 Description and Priority: High priority. Enhancement of the water droplet collection game.

3.2.2 Functional Requirements:

The game shall start with a basic speed and increase exponentially after each milestone of 5 droplets collected without exceeding 16x speed.
The game shall terminate if a player misses 5 droplets.
The game shall offer three difficulty levels affecting the initial speed of droplets.
The game shall provide auditory feedback for collecting and missing droplets.
The game shall display a running total of points and droplets collected.

4. External Interface Requirements

4.1 User Interfaces: Clear and intuitive GUI for both game interface and user registration/login screens.

4.2 Hardware Interfaces: N/A

4.3 Software Interfaces: The game should interface with a database for storing user data and scores.

4.4 Communications Interfaces: N/A

5. Other Nonfunctional Requirements

5.1 Performance Requirements: The game and user interface must perform efficiently.

5.2 Security Requirements: Data handling and password storage must comply with modern security standards to protect user information.

5.3 Software Quality Attributes:

Reliability: The game should handle errors gracefully and maintain a stable state.
Usability: Interfaces should be user-friendly and accessible to diverse users.
Maintainability: The code should be modular and well-documented to facilitate future enhancements.