Beach Worm Catch Game

ISCG6420 IWD Assignment 2, Group Project

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Index

1.Overview & Requirements

2.Game Design

3.Data Modelling

4.UI Interface

5.User Flow

1. Overview & Requirements

The Beach Worm Catch Game is an interactive game where players catch worms on a beach. It is implemented using HTML, CSS, and JavaScript, allowing users to control the character with keyboard inputs and catch worms. The game provides features to toggle game time and sound settings, making it adaptable to various user environments.

Functional Requirements		Non-Functional Requirements	
Objects Moving	Players should be able to move the character and catch moving worms using keyboard inputs.	Web Compatibility	The game should be playable in a web browser.
Adjusting	The game should allow users to toggle game time and sound settings.	Development Platform	Development should be done using HTML, CSS, and JavaScript.
Status Mgt.	The game should manage states such as start, end, and pause	Responsive Design	The design should be responsive to work well on different screen sizes.

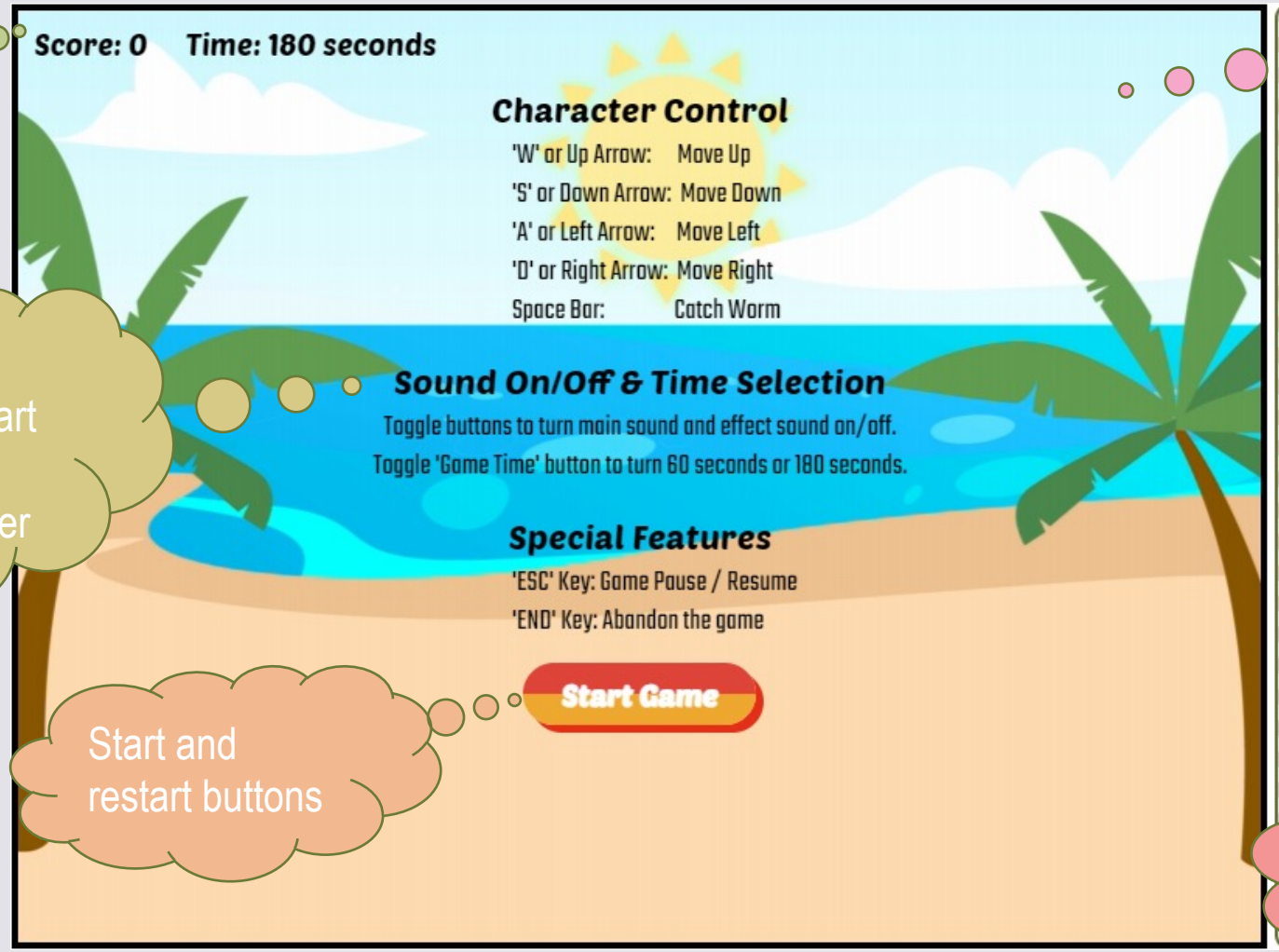
2. System Design

HTML (elements)		CSS (styles)		JavaScript (functions)	
Audio	Play game sound and effects	Global	Set styles for the entire page	Initialization	Initialize game state and variables
Video	Display background video	Game container	Layout for the game area	Character update	Update character position and state
Canvas	Render game graphics	Canvas	Styles for the canvas element	Worm creation and update	Create and update worm states
Settings	Toggle sound and game time settings	Settings and control frame	Layout for settings and control areas	Collision detection	Detect collisions between the character and worms
Control	Display score and time			Timer update	Update game time
Buttons	Start and restart game buttons			Game state mgt.	Manage game start, pause, restart, and end

3. Data Modelling

Game State		Character		Worm	
score	Current score	x & y	Character's location	x & y	Worm's location
time	Remaining time	width, height, & scale	Character size	radius	Worm's radius
gameRunning	Whether the game is running	speed & direction	Character's movement	lifeStage & lifeCycleCounter	Worm's life stage & stage counter
gamePaused	Whether the game is paused	frameIndex, frameCount, & frameInterval	animation control variables	speed & direction	Worm's movement
mainSoundOn	Whether the main sound is on			color originalColor colorToggle	Worm's color & Whether the worm color is toggled
worms	Array of worm objects				

4. UI Interface



Score and time display

Instructions
- Before Start
- Pause
- Game Over

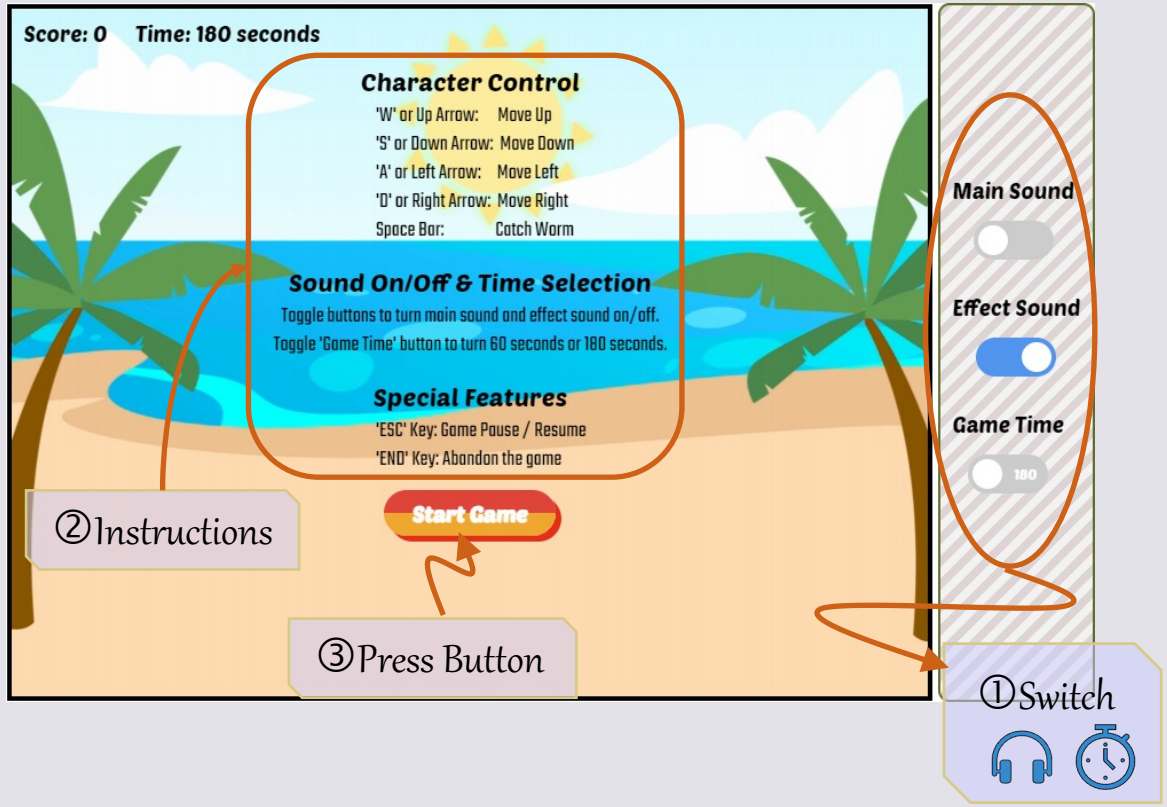
Start and restart buttons

Background moving vedeo

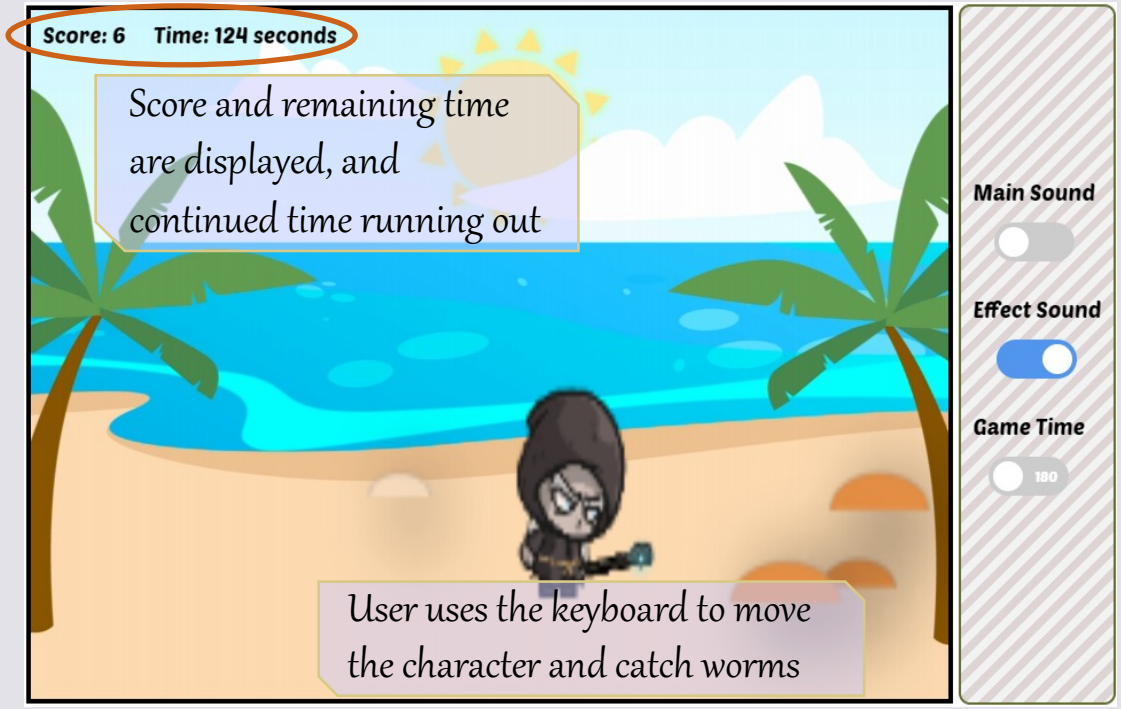
Main & Effect Sound Toggle
Game time Toggle

5. User Flow

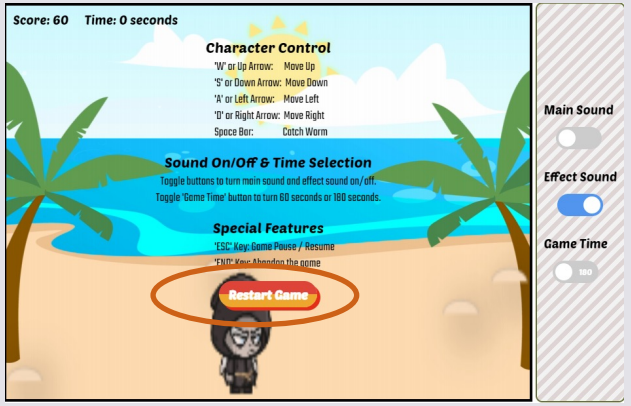
1. Game Start



2. Game Play



5. User Flow (continued)

3. Game Over

4. Restart & Pause