SimCraft: Time Racers

Project Phase 3 - Project Report

St. Augustine Campus, University of the West Indies

COMP 3609 - Game Programming (Semester I – 2024/2025)

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Overview

Game Concept

In "Professor Punctual!", players take on the role of "Mr. Ali", a university professor with one goal: to reach his classroom before the bell rings!

The game features a time-based race through various locations filled with obstacles/distractions in the form of NPCs (non-player characters), including regular students, lecturers, and yappers (talkative individuals). As the player navigates through the level, they must strategically avoid NPC interactions, each of which drains time from the clock and lowers their final score. The game features a unique alternate level where players can engage in a puzzle challenge to gain extra time.

Can Mr. Ali beat the clock and make it to class on time? Or will the distractions and the pressure get the best of him? Find out next time on Dragon Ball Z!!! ;-)

Implemented Concepts

- Visual Effects:
    - Horizontal swipe transition from welcome screen to gameplay screen.
    - Sprite flash when Ali collides with an NPC
- Sound clips
    - Background music
    - Collision with NPCs
- Input
    - Mouse and keyboard
- Double buffering
- Single threading
- Images
    - Moving background
    - Entity sprites
- Animations
    - Entity animations

Gameplay Style:

- The game is played from a top-down perspective.
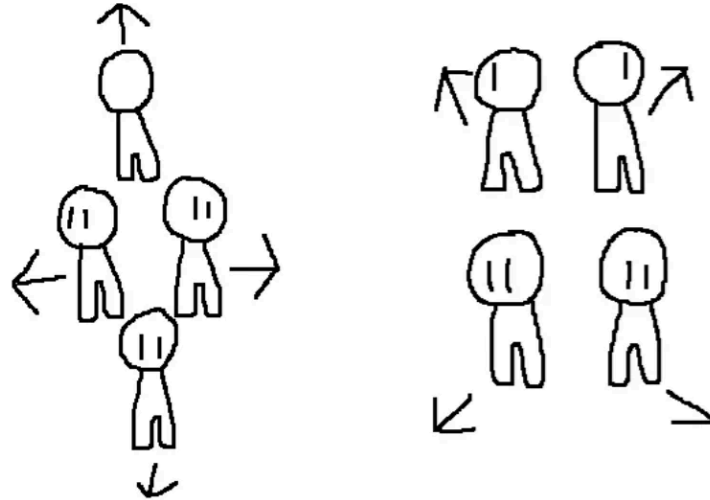
JustMe_Alex_, (*Unnamed sketch showing a top-down view of a character facing in various directions.*)

- Movement is controlled via arrow keys.
- NPCs move randomly and slow down Mr. Ali upon collision or interaction.
    - Some NPCs (Yappers) actively seek out Mr. Ali, forcing the player to dodge or strategize movement.

Features & Flow

Win Condition:

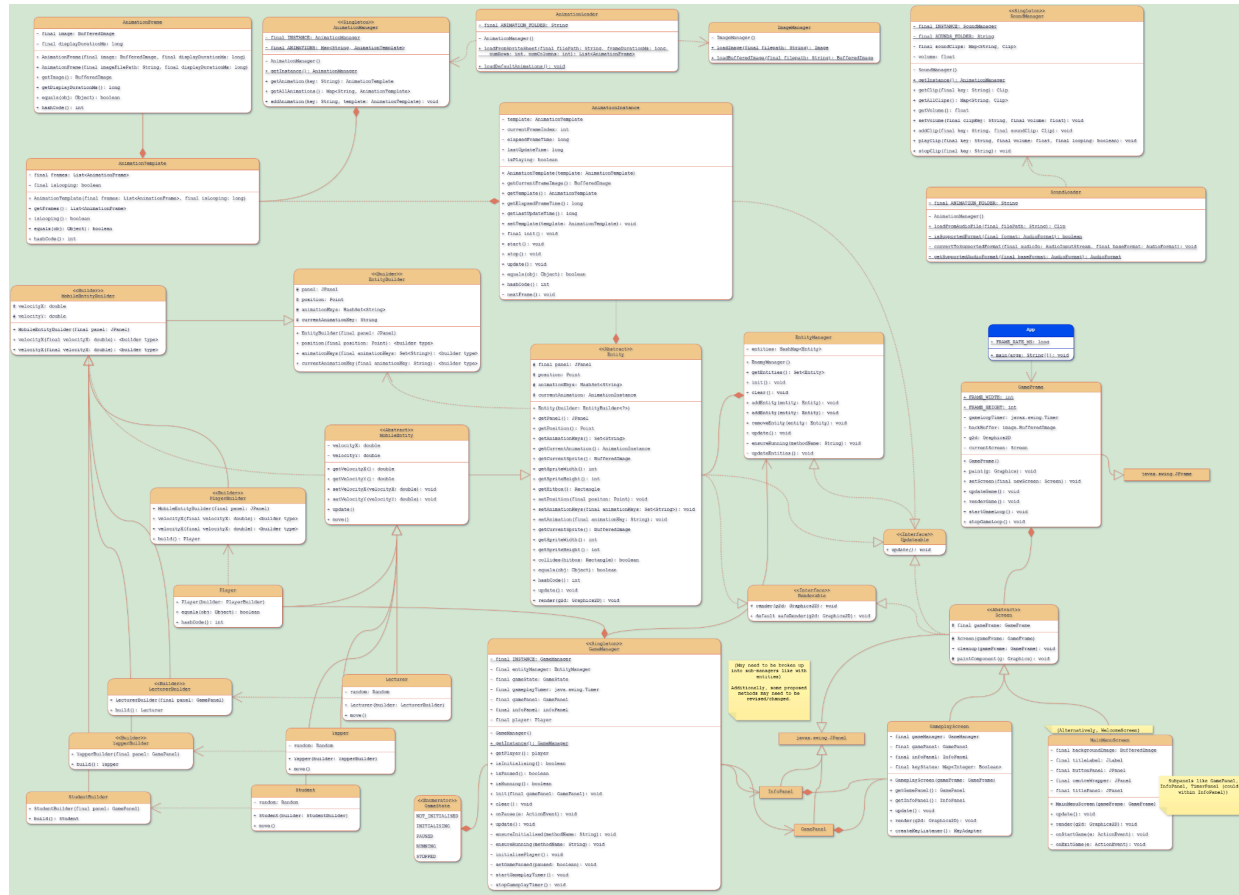- Reach the end of the level before time runs out.

Lose Condition:

- Fail to reach the end of the level before time runs out.

Challenges: NPC avoidance, disguise mechanics(?), optional alternate level with a puzzle.

AlwaysGrateful, *Leave the office on time.*

Class Diagram:

(No time to update, so reusing the diagram from phase 2.) 😓

Core Mechanics

- **Time Management:** The player must efficiently navigate through campus while managing time lost from NPC interactions. 🏃🏽 ⏱️

- **Dynamic NPCs (partially implemented):** All NPCs (currently) move randomly and steal various amounts of time upon collision with the player.
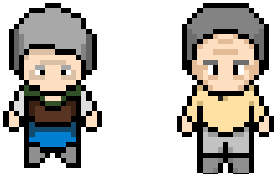
Entities

Player Character (PC)

- **Mr. Ali:** The not-so-punctual professor trying to defy fate, one time-sucking NPC at a time.
- **Appearance:** Well-dressed professor ~~with a briefcase~~.
- **Abilities:** Move in four directions, dodge obstacles~~, collect items~~.

Non-Player Characters (NPCs)

Currently, **all** NPCs act like regular students.

NPC Type	Description	Sprites
🟢 **Regular Students**	Move randomly and create minor delays when bumped into.	
🔴 **Yapper (Overly passionate Student):**	~~Actively engage Mr. Ali in conversation, forcing a dialogue interaction that wastes time.~~ Move randomly and create minor delays when bumped into.	
🟡 **Lecturers:**	~~May initiate academic discussions, requiring quick responses to avoid major delays.~~ Move randomly and create minor delays when bumped into.	

Environment & Items

- **Background:** A bustling university campus with various sections (hallways, courtyards, libraries, etc.).
- **Pages (Final Level)** - Increases final score. Press E to collect.
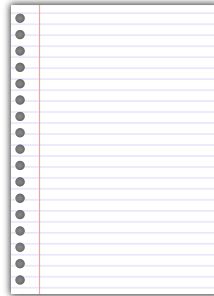
Levels

Level 1: Parking Lot Dash

- **Setting:** The university parking lot, filled with NPC students and faculty.
- **Objective:** Avoid NPCs and reach the hallway entrance.
- **Mechanics:**
  - NPCs move randomly, obstructing paths.
  - **Intended, but not implemented:**

- ■ Players can find **sunglasses** to temporarily disguise Mr. Ali, making him invisible to NPCs.
- ■ If caught without disguise, Mr. Ali loses time.

Level 2: Hallway Rush

- ● **Setting:** A long hallway leading to the classroom.
- ● **Objective:** Dodge NPCs and optionally enter the alternate level.
- ● **Mechanics:**
  - ○ If Mr. Ali reaches the end of the hallway, he enters the classroom.
  - ○ **Intended, but not implemented:**
    - ■ If he enters the **alternate level door**, he is teleported to the puzzle challenge.

Level 3: Classroom Paper Scramble

- **Setting:** The classroom where students left scattered papers.

- **Objective:** Collect as many papers as possible before time runs out.

- **Mechanics:**
  - Papers are randomly placed.
  - More papers collected = higher score**.**

How to Play

User input:

- **Mouse:** Navigate the menu
- **Buttons:**
    - WASD - Control Mr. Ali's movement during gameplay.

    - **Intended, but not implemented**
        - E - Pick up items
        - SPACE - Use picked-up items.
        - SHIFT - Enter doorways

Score (intended but not implemented):

- Collect pages (i.e., lecture notes) to gain points.
- Colliding with enemies loses points.
- The remaining time upon reaching the end gets converted to extra points (like in Mario games).
- Scoring within given thresholds nets a specific grade at the end (e.g., S, A, B, C, D, E, F)

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Game Assets

(See CREDITS.md)

(LiCharacter Sprites

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