

**Lou's Adventure**

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**Technical Field**

The technical field for this innovation project is Game Design with supplemental support from programming, audio, art and animation.

**Background Information**

This SIP idea stems from experiences shared with a former colleague who works as a care-giver for children and adults with mental delays. A large portion of his clients love video games but in his words, “they mindlessly just push buttons while playing games with no goal because game content is too complex for them to cognitively understand what is going on.” These people love games and they deserve a relevant and understandable game for them.

**Prior Art**

This SIP uses the following public domain art as Prior Art from the Stencyl Forge (store):

* "Jump" sound file by "Stencyl, LLC"
* "Stomp" sound file by "Stencyl, LLC"
* "Title Theme Adventure" sound file by "Metal Renard"
* "Happy Theme" sound file by "Metal Renard"
* "Stencyl Book Paused Banner" art file by "Innes"
* "Stencyl Book Start Button" art file by "Innes"
* "Stencyl Book Success" art file by "Innes"

As well as the following public domain behaviors (scripts) as Prior Art from the Stencyl Forge:

* "Always Simulate" behavior by "Supso"
* "Animation Manager" behavior by "ammoniteA"
* "Camera Follow Player" behavior by "Rockguy 91"
* "Die in Pit" behavior by "valente"
* "Falling" behavior by "LewCorp"
* "Health" behavior by "System4Studios"
* "Jumping" behavior by "ammoniteA"
* "On Ground" behavior by "ammoniteA"
* "Slowdown" behavior by "LewCorp"
* "Stomp on Enemies" behavior by "tooch"
* "Walking" behavior by "ammoniteA"
* "Pickup Coin" behavior by "ammoniteA"
* "Inflicts Damage" behavior by "System4Studios"
* "Stompable" behavior by "Stompable"
* "Background Music Manager" behavior by "Stencyl, LLC"
* "Intro Title" behavior by "Stencyl, LLC"
* "Items Remaining" behavior by "Stencyl, LLC"
* "Pause" behavior by "dalreed987"
* "Switch Scene on Enter Region" behavior by "Stencyl, LLC"
* "Reload" behavior by "ammoniteA"

**Project Description**

The goal of this project is to create video game gameplay mechanics that accommodate people with cognitive delays more than traditional mechanics do. The team will accomplish this by creating a user experience (UX) and user interface (UI) that actively assists the player in completing objectives and gives real-time feedback based on player performance. The project will be implemented into an original 2D Platforming game. An example of this mechanic includes: User Interface displaying translucent controls and glowing intractable at all times in order to assist the player. During times of actions, the appropriate action to accomplish the task will glow on the displayed control scheme. To further accommodate player's skill, they will be given in-game feedback based on their performance to encourage positive gameplay and deter from negative gameplay.

**Innovation Claim**

The innovation for this project comes from using gameplay mechanics as a form of assistive technology to make gaming more accommodating for people with cognitive delays.

**Usage Scenario**

This mechanic can be used in any game where a person would benefit from assistive technology that teaches the player how to play the game; as well as, real-time feedback based on their performance.

**Evaluation Criteria**

The following questions will determine the successful completion of this project:

1: Have all parts of the Technical Design Document been completed?

2: Have all art assets been created?

3: Has the UX been designed?

4: Has the UI been designed?

5: Have all assets been coded together?

6: Do all aspects of the project meet the project goal?

7: Do the mechanics work?

8: Are the mechanics beneficial to people with cognitive delays?

9: Are the mechanics beneficial to people without cognitive delays?

**Objectives and Tasks Associated with the Project**

1. Create Technical Design Document

* Create and document the development scope for the project
* Create and document definitions, acronyms, and abbreviations for use in the project
* Create and document an overview of the project and mechanics specific to the project's innovation
* Create and document the system's characteristics, architecture, and infrastructure services
* Create and document the design method and standards
* Create and document documentation standards
* Create and document naming conventions
* Create and document programming standards
* Create and document the software development tools for creating the project

2. Create Game Design Document

* Create and document the gaming platform used for the project
* Create and document the file and coding naming conventions for Stencyl
* Create and document User Interface conventions including fonts and graphic user interface components and configurations
* Create and document the project's description
  + Summary
  + Genre
  + Target Audience/Usage Group
  + Flow and Pacing
  + Artistic Design
  + Development Scope
* Create and document key features of the project
  + Controls
  + Assistive Mechanics
  + Color Coding
* Create and document a background for the project
  + Plot outline
  + World environments
  + Character bios
    - Lou
    - Rory
    - Janet
    - Lou's Dad
    - Lou's Mom
    - Agatha the Doll
    - Shirt Snake
    - Toy Soldiers
    - Dust bunnies
    - Ragdolls
    - Soap Monster
* Create and document game progression within the project
* Create and document the mission structure including
  + Puzzles
  + Objectives
  + Challenges
  + Game Flow
* Create and document list of art assets needed
  + - Lou
    - Rory
    - Janet
    - Lou's Dad
    - Lou's Mom
    - Agatha the Doll
    - Shirt Snake
    - Toy Soldiers
    - Dust bunnies
    - Ragdolls
    - Soap Monster
    - Lou's Bedroom background and environment tiles
    - Janet's Bedroom background and environment tiles
    - Living Room background and environment tiles
    - Rory's House background and environment tiles
    - Assistive Dialogue
    - Level Collectables unique to each level
    - Level door end objective
    - Health "bar"
    - Assistive pathing
    - Assistive visual hints
    - Assistive keyboard HUD
* Create and document list of audio assets needed
  + Public domain audio for sound effects and level ambient sounds
* Create and document appendices used

3. Create project assets

* Lou Sprites
* Rory Sprites
* Janet's Dialogue
* Lou's Dad Dialogue
* Lou's Mom Dialogue
* Agatha the Doll Sprites
* Shirt Snake Sprites
* Toy Soldiers Sprites
* Dust bunnies Sprites
* Ragdolls Sprites
* Soap Monster Sprites
* Lou's Bedroom background and environment tiles
* Janet's Bedroom background and environment tiles
* Living Room background and environment tiles
* Rory's House background and environment tiles
* Assistive Dialogue
* Level Collectables unique to each level
* Level door end objective
* Health "bar"
* Assistive pathing
* Assistive visual hints
* Assistive keyboard HUD

4. Refine and implement functional prototype into a game/level

* Use Stencyl to create level 1 - Lou's Room scene
  + incorporate project assets (applicable for Lou's Bedroom)
    - Lou's Bedroom background and environment tiles
    - Health "bar"
    - Assistive visual hints
    - Assistive keyboard HUD
    - Shirt Snake Sprites

5. Complete functional prototype

* Use Stencyl to create a home screen scene
* Use Stencyl to create level 1 - Lou's Room scene
  + incorporate project assets (applicable for Lou's Bedroom)
    - Lou's Bedroom background and environment tiles
    - Level door end objective
    - Health "bar"
    - Assistive pathing
    - Assistive visual hints
    - Assistive keyboard HUD
    - Shirt Snake Sprites
    - Dust bunnies Sprites
* Use Stencyl to create a win screen scene

6. Finalize project and project for presentation

* Polish current level and ensure all elements either work correctly or cut from presentation

**Description of Design Prototype**

The prototype implementation that will be used for this project, Lou's Adventure, is a Game Concept Document. This document will detail and outline all the necessary features needed for the project which can then be used as guidelines for completing and implementing the project.

**Evaluation Plan**

In order to answer and demonstrate that all Evaluation Criteria were met, documentation, assets, and a functional prototype were all created. To further test the completion of these project, several play test sessions were conducted where project team members without cognitive delays played the prototype, as well as, non-team members with cognitive-delays (target audience selected from individuals who receive personal care from the Lou Corporation). The Technical Design Document was completed so that any team member could read and fully understand the technical requirements for this project on an independent level. In order to track and manage the completion of all art assets, UI, and UX design, a Game Design Document was created and updated as needed throughout the project pipeline. All immediately required art was completed fully and incorporated into the one-level prototype. The prototype is completely functional and meets the standards for assisting those with, and without, cognitive delays through visual cues and hints throughout the level.

**Project Completion Assessment**

Considering the team composition (one designer and four artists) and experience of all team members on this SIP, the completed components function extremely well. The intended purpose of this SIP is to make gaming more natural and intuitive. The principals behind the assistive mechanics, along with the cartoonish and fun atmosphere of Lou’s Adventure, definitely accomplish this goal. While the mechanics help gamers of all types accomplish gaming goals more efficiently, the backdrop of Lou’s imaginary dreamscape brings mundane every day tasks like cleaning one’s room into a fun experience. This kind of gaming atmosphere was created to also reinforce daily life skills for the target audience, people with mental delays, in addition to its core gaming intentions.

However, given the time frame and the team composition, there have been several roadblocks in the development of this SIP. The first roadblock was assembling the current team. The artists for the project were not found until the last semester of the project development cycle. While the project would not have been completed without their contribution, the project was not completed to an extremely high level of polish as the artists had other obligations other than this SIP. Additionally, the absence of programmers for the project severely limited the engine choice the team had for the final product. Despite these shortcomings, every team member involved in the SIP completed a professional level of work and the product could not have been completed without the contribution from every team member.

Since beginning this Student Innovation Project, several facets of the project’s innovation have been utilized in several games that have been released in the 2013/2014 release windows. However, the innovation within Lou's Adventure is still unique because the assistive mechanics play a more constant role as opposed to similar mechanics in other games only being present during tutorial sections and as quick-time button presses being displayed on screen to give the player an indication when they can perform specific actions. Furthermore, when analyzing "Indie" games, they are often completely devoid of said assistive mechanics altogether which only highlights the goal of this project as innovative.

**Appendices**

Appendix A: Game Concept Document – Sine\_LousAdventureGDD.docx

Appendix B: Technical Design Document – Sine\_LousAdventureTDD.docx