

BELONGING™

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Game Development

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Executive Summary

Bachelor of Innovation

The University of Colorado Colorado Springs offers a unique, one-of-a-kind program called the Bachelor of Innovation (BI). The BI offers a total of 24 degrees including Game Design & Development, Digital Media, and Electrical Engineering. Throughout the program, students innovate on multidisciplinary teams to transform ideas into impact. BI teams work all year round to successfully meet the current business needs of clients within the community.

Client Introduction

The clients responsible for the Belonging project are Dennis Lynclaire and Bodil Larsen-Ledet, Directors in The Mereon Legacy CIC, an organization dedicated to researching the connection between the geometric pattern called the “Mereon Matrix” and the various systems people find throughout their lives. *Belonging* is an application of the Mereon Matrix as a type of decision-making process and as an organizational structure for social systems.

Project Background

The Belonging project was created with the purpose of developing an online video game that provides a sense of inclusivity to children between ages 7-11. The game was conceptualized by the client as a way to combat the feeling of isolation that has formed in children as a result of being unable to share a physical space due to the COVID-19 quarantines and social distancing. The game is designed to utilize the principles of *Belonging* to inspire creativity and create the feeling of being heard and the feeling of interconnectedness.

Project Objectives

The overarching objective of the Belonging project is to ultimately create a fun and safe environment where children can share their stories and feel heard and accepted. Hence, the team and the clients agreed upon producing a set of concept and design materials to serve as a strong starting point for future development teams. The project team and the client agreed on four specific objectives, which are as follows: a concept document for future developers to reference, a storyboard to illustrate the idea of the game, and an interactive prototype to get a feel for what the actual game will be like.

Project Accomplishments

All project objectives were accomplished. A concept document for future developers to reference was created and sent to the clients while a storyboard to illustrate the idea of the game was revised and finalized. In addition, an interactive prototype was produced in order for the clients to better communicate their vision to future teams. All project objectives were successfully met by delegating sections of each task to each member of the team. Once all team members had completed their part, they came together to finish the task as a whole. With these materials in hand, the clients can now skip a portion of pre-production and jump right into developing the MyStory game.

The team has completed a concept document, storyboard, and point-and-click game prototype for the clients. These documents will aid the clients in continuing their progress on the MyStory experience. Should the clients choose, they can apply for a new team in the fall semester of 2021 to work on developing the full game as detailed in the concept document and storyboard. The

completed project accomplishments will allow the clients to continue expanding their vision for the MyStory Experience in the years to come.

Statement of Accomplishments

The team's primary objective was to generate concrete documentation and concept documents from the client's original idea for the game. The team utilized a variety of methods to create a clear picture of what the client's game would look, feel and play like. The various methods can be found in the objectives the team has accomplished over the course of the project.

The most basic objective of the project was to generate a detailed game concept document. After receiving the client's basic outline for the purpose and objective of the game, the team generated several concept documents, each of which outlined a different concept for the game. The concept documents included a variety of information such as the target audience, the release platform, major design features and game mechanics, potential market competition, financial strategies, and art style.

Another objective and strategy the team employed was to create a game storyboard, a collection of images meant to illustrate scenes found in the game. The scenes included descriptions of gameplay features and serve as basic illustrations of what the game would look like.

The most advanced objective that the team had was to create a basic prototype of the game. The prototype functions as a more immersive alternative to the game storyboard by forgoing feature descriptions in favor of interactive UI utilizing a basic prototyping website, *Invisionapp.com*.

An objective which was moved out of scope due to technical limitations was the minigame prototype, a fully functional "unit" of gameplay which would serve as a playable, demonstration of one of the game's features. Additionally, the prototype would have served as a metric of quality for future developers who work on the project.

Recommendations and Innovation Discussion

The team worked with the clients, Bodil Larsen-Ledet and Lynnclaire Dennis, to begin the planning process of a game based on the vision of the clients. Four main objectives were successfully completed. If Ms. Larsen-Ledet and Ms. Dennis would like to continue to work with the BI program, the Spring 2021 project team recommends that they apply for another BI team. The Spring 2021 team recommends the following actions for future teams. Future teams should be ready to focus on the implementation and creation of the game based on the documents the team has provided. In addition to these documents, the leads from BELONGING should be consulted during the process to make sure the game is being made according to their specifications. It is suggested that future teams should have experience in game design, programming, and animation as these will all be necessary for the game's development. Finally, we recommend that future teams research the licenses, patents, etc. required for the game to be released in different countries and have its contents be protected under the laws of those countries.

For Bodil Larsen-Ledet and Lynnclaire Dennis, the team recommends them to research video games to familiarize themselves with common game design terminology and common game design practices. Researching similar games to the one they are trying to make would be ideal because doing so would allow them to reference other titles when providing feedback and they will be familiarized with quality of life features which will increase the quality of the game. This will also assist in the client's ability to communicate with game designers. Finally, the team recommends regular testing of the game, by having subjects play the game over the course of its development. This process is known as playtesting and it will help the clients find design mistakes within the game that can then be fixed. The mistakes could be technical in nature, such

as a programming error, or they could be a design mistake, such as prompting the wrong emotions in the users as they play. Therefore, Bodil Larsen-Ledet and Lynnclaire Dennis should have groups of testers during the development of MyStory and prior to MyStory's release.

Conclusion and Discussion

The purpose of the Belonging Project was to envision a safe, interactive online experience that will enable children to explore deeper interpersonal connections and understandings between themselves and others, connections that may have been weakened or lost entirely during the Covid-19 pandemic. With this idea, the team constructed the basis of a game that would enable children to connect with others and grow their confidence by creating and sharing stories. This vision created the MyStory Experience. The team presented the clients with a concept document, storyboard and interactive prototype to display the foundations of the MyStory experience in varying degrees of development. With the assets created by the team, the clients will be able to hand off the MyStory Experience to another team to continue building upon the vision they had shared with this team.

The team is honored to have collaborated with Bodil Larsen-Ledet and Lynnclaire Dennis on the MyStory and Belonging experience. Although not all of the project objectives as defined in the Project Charter were completed, the team is confident that the objectives that were completed will aid in the future development of the MyStory Experience. The team recommends the clients apply for another team in the Fall 2021 semester to begin constructing the actual game as described in the concept document. The team believes that a future BI team will be able to move the clients' vision for the Belonging project forward.

Supporting Materials

Appendix A: Project Charter

The Belonging BI Team Project Charter*

Name of the Project: The online BELONGING experience.

Name of the Sponsor: Bodil Larsen-Ledet and Lynnclaire Dennis

Purpose of the Project:

The current social isolation created by the COVID pandemic has inspired the client to create a videogame that will allow now isolated children to interact and express themselves with other people their age. This will allow children everywhere to experience a sense of belonging and togetherness that will alleviate the isolation that the COVID pandemic has created.

High-level Project Description and Boundaries:

The overall goal of the project is to design and finalize the vision of an online game aimed at children 7-11 years old which will allow them to interact and socialize with each other in a constructive and inclusive way. The game must be planned to suit children's interests by allowing them to create their own virtual story while also simultaneously allowing them to engage with other children.

In scope items for the project are: create and deliver a completed game concept document, create a storyboard, create a basic interactive prototype of the client's game, and develop a game development document.

The game concept document will be a clear and descriptive outline of what the purpose of the game is as well as what it will consist of. The storyboard will include a sequence of visuals representing the basic look of the game. The basic interactive prototype will be a program that outlines the basic experience and engagement of the client's game. The game development document will allow future developers to easily understand the nature of the game, as well as, provide them with design specifications and requirements for future development.

Objectives and Success Criteria:

- Objective 1: Game Planning Process
 - Success Criteria: Deliver a completed game concept document and visual storyboard to the client
- Objective 2: Create a visual representation of the game planning process
 - Success Criteria: A basic interactive prototype of the client's game
- Objective 3: Develop one unit of gameplay
 - Success Criteria: Create and deliver detailed design documentation.

High-level requirements:

- The project will include a detailed game concept document and game storyboard which will include the basic and defining information about the game including, license, genre, unique gameplay features, target platform, game setting, and market competition.
- The project will include a basic prototype that will demonstrate the basic game-flow and demonstrate the basic artwork style expected in the full game
- The project will include development documentation that other groups may use to continue developing the game. The documentation will include design specifications on the story elements, programming, and art quality; and, an explanation of the desired game feel and the objectives that the game is designed to accomplish.

Assumptions:

- Two game design team members have the necessary experience and knowledge required to design and produce a simple, working prototype of one gameplay aspect to demonstrate the game's mechanics and flow within the Gamemaker Studio 2 engine.
- Three team members are familiar with and have access to artistic software such as Clip Studio and Krita, which will enable the team to develop the game's art style and atmosphere.
- The team has the necessary skills to write a detailed game concept document that can be given to the clients that will enable the clients to continue working on the project with a game development company of the clients' choosing.
- The BI team will have the resources and instructions necessary to effectively execute the needs of the client.

Constraints:

- The Belonging Team as a whole only has limited knowledge of animation and game development.
- Only a few members of the Belonging Team have passable proficiency at drawing.
- Due to the locations of each team member, meeting in person is not possible.

High-level Risks:

During its development and lifespan, the Belonging Game App will face a number of significant risks that may make or break its success depending on how they are handled.

- Risk 1 - Pitchability:
 - Whether or not materials and demos created on this project can serve as an effective game pitch that will attract developers/investors to this project. If the proof of concepts are not intriguing enough, then the clients may have difficulty finding a party interested in developing this game.
 - Probability: High
 - Impact: High
 - Mitigation Plan: Work this semester will focus heavily on visual proofs-of-concept to communicate game feel in an attractive and compelling way.
- Risk 2 - Accuracy:
 - How accurately proof-of-concept and other materials produced by the team portray the activities and desired atmosphere of the game. If the team cannot concisely and accurately represent the desired end product, then future developers may misunderstand the project and have difficulty executing the clients' vision.
 - Probability: Medium
 - Impact: High
 - Mitigation Plan: The team has decided to slow down and take smaller steps in order to both facilitate better communication with the clients and slow down the rate of project iteration. This will ensure the project does not stray from the clients' vision.
- Risk 3 - Programming
 - The team contains only two members with any prior coding and game design experience which will prove detrimental to the team's ability to produce fully operational prototypes. If the team cannot produce functional prototypes, then it will be more difficult to provide tangible examples of game feel.
 - Probability: High
Impact: High
 - Mitigation Plan: In order to mitigate this issue, the team will have to be extremely careful not to take on larger tasks than it can handle. Programming tasks will be estimated on a "worst-case scenario" basis.

Summary Milestone Schedule:

- Milestone 1 Game Concept Document
 - A clear and descriptive outline of what the purpose of the game is as well as what it will consist of.
 - March 11, 2021
- Milestone 2 Storyboard
 - A sequence of visuals representing the basic look of the game.
 - March 18, 2021

- Milestone 3 Prototype Click Adventure
 - A program that outlines the basic experience and engagement of the client's game.
 - April 1, 2021
- Milestone 4 Game design documentation
 - The game documentation will include design specifications about the game design.
 - May 5th, 2021

Stakeholder List:

Bodil Larsen-Ledet and Lynnclaire Dennis

- Ms. Larsen-Ledet and Ms. Dennis have ownership of the Belonging experience development process and are the clients of the Bachelor of Innovation team. Their consistent communication and continued commitment to the weekly meetings are crucial to the success of the project.

BI Team Members (Alondra Hernandez, Ryan Casement, Sean Ford, Kyle Torres, Aimee Branine)

- The project's success is dependent on the dedication of the team members.

BI Instructors (Dr. Jenifer Robertson & Carolyn Gery)

- The BI instructors will function as mentors to the BI team members. Instructors will provide different methods to effectively work as a team and accomplish the needs of the client. If there is an emergency within the project or with other stakeholders, the instructors may be asked to intervene.

Approvals: By signing below, the project team and client, agree to this project charter:

Bodil Larsen-Ledet

_____	<u>Bodil Larsen-Ledet</u>	<u>3/11/2021</u>
Client Signature	Print Name	Date

Lynnclaire Dennis

_____	<u>Lynnclaire Dennis</u>	<u>3/11/2021</u>
Client Signature	Print Name	Date

A. Hernandez

Team Co-Lead Signature

R. Casement

Alondra Hernandez 3/11/2021

Print Name Date

Team Co-Lead Signature

S. Ford

Ryan Casement 3/11/2021

Print Name Date

Team Member Signature

K. Torres

Sean Ford 3/11/2021

Print Name Date

Team Member Signature

A. Branine

Kyle Torres 3/11/2021

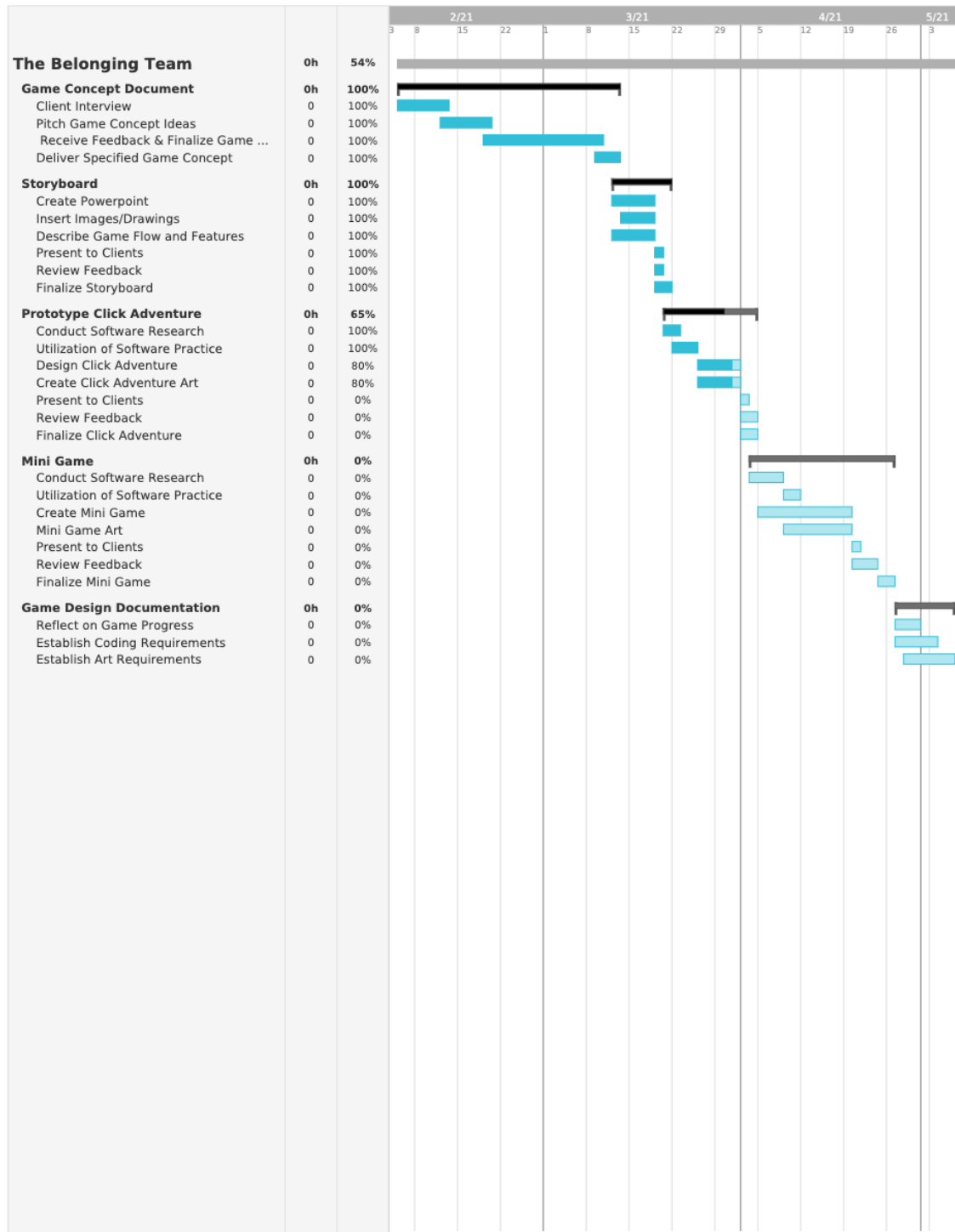
Print Name Date

Team Member Signature

Aimee Branine 3/11/2021

Print Name Date

Appendix B: Project Schedule



Appendix C: Storyboard

MYSTORY

THE ADVENTURE OF A LIFETIME

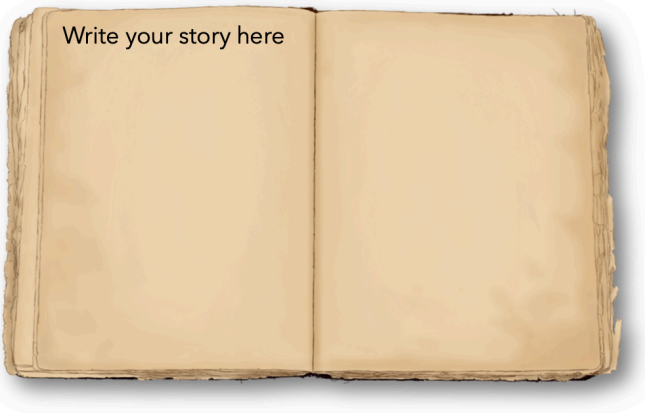
 OPPORTUNITY + EXPERIENCE

STORYBOARD

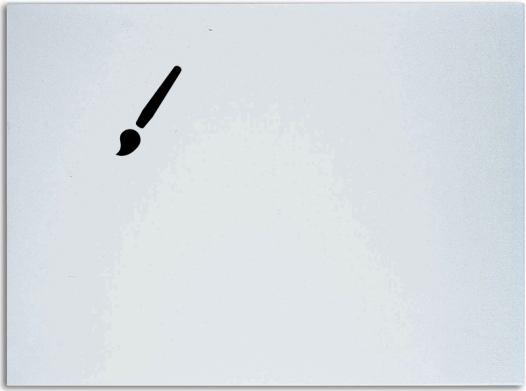
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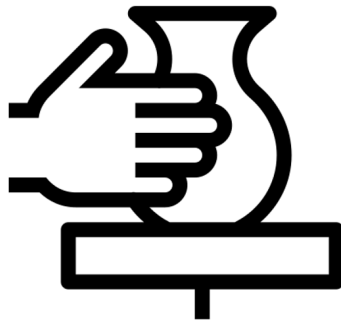
MYSTORY PAGE



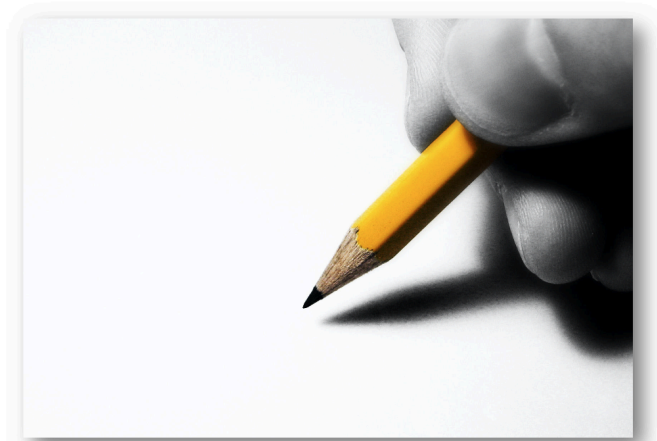
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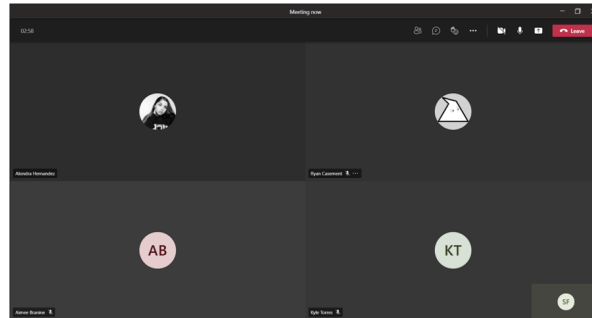
MYSTORY SCULPT



MYSTORY DRAWING



MYSTORY VIDEO



MYSTORY SHARING

File to Share:

FILE NAME: MyFirstPainting.png



MYSTORY BIN

Player 2: How was your day today?

Player 1: It was bad! I overslept so I was late to class, I left my homework on the kitchen table, and I lost my lunch money.

Player 1: I'm in a really, really bad mood. :(

Player 2: You should try throwing that in the bin. That always makes me feel better.

Player 1: Good idea!



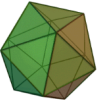


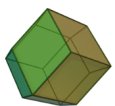
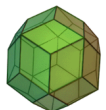



MYSTORY QUESTIONS

- What is the most important thing in your life today?
 - What are your favorite foods and drink?
- What do you love doing to help at your house?
 - Do you like to help cook or clean?
 - Do you like to work in a yard or garden?
 - Do you have a pet you help take care of?
- What was happening the last time you got the giggles?
- What was happening when the part of you who knows how to be mad showed up?
 - What is your favorite way to feel?
- What goes on inside when you get confused?
 - What makes you laugh?
 - What makes you sad?











MYSTORY ARCHETYPES

Possibilities	Physical	Emotional	Mental	Intuition	Time	Spirit	Potential
A seed	Plant the seed	Give it water	Let it reach for the sun	Give it space	Give it time	Let it grow	Blossoms
							



Question: What is your favorite way to feel?

	Possibilities:	How does that feeling expand your possibilities?
	Physical:	How does that feeling make you feel physically?
	Emotional:	How do you feel emotionally?
	Mental:	How do you feel mentally?
	Intuition:	Can it be prioritized?
	Time:	When do you feel this way?
	Spirit:	Is it related to your vision?
	Potential:	Does this feeling increase your potential?



Appendix D: Interactive Prototype

