Milestone 1

Title: Gameplay Prototype

Short Description: The gameplay prototype will include a demonstration of putting mechanics and ball physics in a bounded world. The player will control the angle and strength of a hit, and the ball will bounce off walls.

Due Date: 3/2/2020

Production Dates: Modifying lab 4 code and basic game board (2/25), Ball movement and collisions (2/28), Mouse-controlled putting and UI (2/28), Concept art complete (2/28), Debugging (3/1), Class Presentation (3/2)

Presenters: Klaben, Qin, Selin

Deliverables: We will have working code for fundamental ball interactions - aiming, powering, and colliding - in addition to basic UI to indicate the ball's power and direction. Designers will produce concept art for the characters, objects and environment.

Test for acceptance: A third party should be able to reach the goal area without the game crashing or unintuitive physics effects occurring. Physics counts as unintuitive if the third party expresses confusion or discontent with it.

Risk Assessment: As this is our first group code project, organizing the team workflow efficiently could be a challenge. Outside obligations the week of the due date may also make it more difficult to meet deadlines.

Contributors:
Lucien Eckert - Create concept art for objects
Kevin Klaben - Implement putting UI for the ball
Courtney Manbeck - Create concept art for level environments
Tony Qin - Implement mouse-controlled putting mechanics
Isabel Selin - Create concept art for characters
Betsy Vasquez Valerio - Implement ball collision with walls
Barry Wang - Implement ball movement with friction
Yuxiang Yu - Modify lab 4 and code basic gameboard

Milestone 2

Title: Technical Prototype

Short Description: The technical prototype will hone ball mechanics, and implement guard AI and alarms. Mouse interaction and UI will have improved since the previous iteration. All assets will have preliminary animations and placeholder art.

Due Date: 3/17/2020

Production Dates: Concept art updated from feedback (3/5), Guard movement and AI (3/10), Guard pathfinding and ball detection, alarms (3/12), Basic guard animations completed (3/13), Basic tiles and objects completed (3/13), Debugging (3/14), Music and sound effects imported to game (3/15), Playtesting (3/15)

Presenters: Manbeck, Vasquez Valerio, Wang

Deliverables: We will have a playable game with refined ball mechanics, guard interactions with the ball, and guard AI. Guards will patrol on set routes, chase the player's ball and investigate alarms. Detection will be affected by obstacles. Designers will create preliminary animations for guard and ball interactions, and essential assets will be integrated into the game.

Test for acceptance: A third party will be able to operate the ball and interact with the guard properly without the game crashing. Proper interactions include attracting the guards when seen, triggering the alarm, and losing the game if touching the guard.

Risk Assessment: This milestone includes some of our largest code challenges: guard AI, pathfinding and detection. With a large portion of the team having external obligations during this sprint, keeping to the production schedule may be especially difficult.

Contributors:
Lucien Eckert - Create tilesets and object assets; begin composition of music and sound effects
Kevin Klaben - Implement line of sight based detection for guards
Courtney Manbeck - Create tilesets and object assets; begin level design
Tony Qin - Implement guard movement and AI
Isabel Selin - Animate guard movements and reactions
Betsy Vasquez Valerio - Implement alarms
Barry Wang - Implement guard movement and AI
Yuxiang Yu - Implement guard pathfinding

Milestone 3

Title: Alpha Release

Short Description: The Alpha release will include at least one completed level and a finished level editor. The majority of planned level elements will be implemented. Start screens, pause screens, and other UI will be implemented. Objects, tile assets, and sound effects will be close to finalized.

Due Date: 4/6/2020

Production Dates: Polished music and sound effects present in game (3/31), Level editor (3/31), One or more levels built using level editor (4/2), Screen transition and UI (4/2), Boxes (4/3), Debugging (4/5)

Presenters: Eckert, Klaben, Yu

Deliverables: We will have a playable game which can import and run levels from a completed level editor. We will have at least one refined and playable level. Additional UI elements, including start and pause screens, will be integrated into the game. Most sound and animation assets will be finished and implemented.

Test for acceptance: A member of the team who hasn't contributed to the level editor will be able to create a level and export it to our format for storing levels. A third party user will be able to complete our finalized level(s) without crashing the game. The user will also be able to pause the game and transition between the main menu and level(s).

Risk Assessment: The overlap of this sprint with spring break may lead to scheduling conflicts. Creating the level editor will involve learning, designing and coding with new programs. Its functionality is essential for all future deadlines.

Contributors:
Lucien Eckert - Finalize the game's main music and sound effects; continue level design
Kevin Klaben - Implement level editor
Courtney Manbeck - Create at least one level with level editor; design main menu screen
Tony Qin - Implement level editor
Isabel Selin - Design level selection and pause screen;, continue level design
Betsy Vasquez Valerio - Implement additional gameplay objects and UI
Barry Wang - Implement screen transitions and related UI
Yuxiang Yu - Implement additional gameplay objects and UI

Milestone 4

Title: Beta Release

Short Description: The Beta release will have at least three complete levels with progressive difficulty. All level elements will be implemented with polished assets and sound design.

Due Date: 4/20/2020

Production Dates: Other level elements (4/14), Three levels constructed (4/15), Height-based obstacles, lighting effects (4/17), Options screen (4/17), Debugging (4/19)

Presenters: Selin, Wang, Yu

Deliverables: We will have a playable game with at least three levels progressing in difficulty. All major assets will be included in the game.

Test for acceptance: A third party user will be able to play through the levels available. All elements that we plan to have in the final game will function. Sound feedback will be natural. All sound elements will be complete and in the game. All UI will be complete and all third party users can navigate them without questions.

Risk Assessment: Figuring out good level design and difficulty progression here will be pivotal for our game's engagement. Any earlier issues with the level editor will create difficulty for this milestone.

Contributors:
Lucien Eckert - Continue work on music as needed; continue level design
Kevin Klaben - Implement bumps, ramps, and height based obstacles
Courtney Manbeck - Continue level design; create further levels with the level editor
Tony Qin - Implement any remaining level elements
Isabel Selin - Finalize artwork and/or animation; design the options screen
Betsy Vasquez Valerio - Implement bumps, ramps, and height based obstacles
Barry Wang - Implement any remaining level elements
Yuxiang Yu - Implement lighting, including shadows and shading

Milestone 5

Title: Final Release

Short Description: The final game will include at least 7 polished levels with finalized art, animation and sound. Physics and UI will be polished for a smooth and intuitive feel.

Due Date: 5/4/2020

Production Dates: Fine-tuning game physics (4/27), Final UI improvements (4/27), All assets finalized and present in the game (4/31), Debugging (4/31), Credits screen (5/2)

Presenters: Eckert, Qin, Vasquez Valerio

Deliverables: We will have a polished, balanced, and playable game which has at least seven levels. Levels and mechanics will have been significantly playtested for both debugging and increased enjoyment. Game features and sounds should be smooth and coherent with each other. UI for all game states and mechanics will be intuitive.

Test for acceptance: Multiple third party users can complete and enjoy all levels. They can navigate through all menus and game states without questions. All observed bugs will be fixed.

Risk Assessment: At this point our game should be very close to being complete, so there should be final adjustments being made to make sure the game is fun and playable. However, since half the team has obligations near the due date, we need to make sure everyone can finish their assigned tasks.

Contributors:
Lucien Eckert - Develop remaining audio assets
Kevin Klaben - Playtest and debug
Courtney Manbeck - Design credits screen
Tony Qin - Complete final UI improvements
Isabel Selin - Design any remaining objects; finalize object colors
Betsy Vasquez Valerio - Playtest and debug
Barry Wang - Complete final UI improvements
Yuxiang Yu - Fine tune game physics

Milestone 6

Title: GDIAC Showcase

Short Description: The game is complete, engaging, functional on multiple computers, and has no bugs.

Due Date: 5/15/2020

Production Dates: Final three levels by 5/8, all remaining time dedicated to playtesting and debugging

Presenters: Manbeck, Selin, Yu

Deliverables: We will have a game that is playable polished and complete with at least 10 levels.

Test for acceptance: The majority of the audience enjoys the game and would want to continue playing after a few levels.

Risk Assessment: There should be little risk involved in this sprint. By this point, the game should already be polished and complete.

Contributors:
Lucien Eckert - Playtest and debug
Kevin Klaben - Fix bugs; optimize code
Courtney Manbeck - Clean up graphics; playtest
Tony Qin - Fix bugs and optimize code
Isabel Selin - Clean up graphics; playtest
Betsy Vasquez Valerio - Fix bugs and optimize code
Barry Wang - Playtest and debug
Yuxiang Yu - Playtest and debug