

Choice of topic: (1) Collision Detection/Hit Detection and (2) Game Development					
-> Research Hit Detection in order to implement the fighting mechanic to fend flower from enemies.					
-> Prevent the player from phasing through tiles like water, trees and walls.					
T <sub>T</sub> ID	T <sub>T</sub> Name	🕒 Priority	🕒 Progress	T <sub>T</sub> How to Demo	Choice of topic
FR01	Game window opens	High	Completed	The player runs the program. Then, a fixed-size Swing window opens.	Collision Detection
FR02	Player movement	High	Completed	When the game starts, the player uses the WASD keys to move the player-controlled character (up, down, right, left), which triggers the character's walking animation. The player can also use SHIFT to sprint, SPACE to dodge, LMB to attack and RMB to interact with the flower.	
FR03	Enemy spawning	High	Completed	As soon as player water the flower for the first time, enemies appear in waves at random locations on the map. They are spawned on a timer, so after each wave there is a small window of time before the next wave of enemies appear.	
FR04	Attacking entities	High	Completed	Player presses LMB to attack. A shovel swing occurs (represented as a box/arc in front of the player). If an enemy is inside that attack area, it loses hp and dies. If no enemy is in range, nothing happens. The enemies can also attack the player.	Hit Detection
FR05	Enemy movement	Intermediate	Completed	After an enemy spawns, they follow a path leading to the closest friendly in the game (plant, player, chicken).	Hit Detection
FR06	Garden sensor tile	Intermediate	Discarded	Allow one enemy to reach the unique "Garden" tile (different sprite?). As soon as the enemy collider overlaps this tile, the game ends immediately (and a "Game Over" banner is displayed). <b>Decided to not add this tile mechanic for deciding if the game ends, instead added the mechanic that if the flower dies the player dies, the player survives 10 waves and makes it to daytime and wins or the player manages to open the chest and wins.</b>	
FR07	Win state	Intermediate	Completed	(Win): The player opens a chest, then a pop-up appears: "You win!". After clicking OK, the game window closes. Similarly, if the player survives 10 waves, a pop-up appears saying "Secret ending: Ghost Hunter!" and can exit after clicking OK.	
FR08	End state	Intermediate	Completed	(Lose): The player fails killing all enemies and enemy kills the flower or the player. Immediately, a "Game Over" banner appears, ending the game. Press OK to quit.	Hit Detection

**Choice of topic: (1) Collision Detection/Hit Detection and (2) Game Development**

-> Research Hit Detection in order to implement the fighting mechanic to fend flower from enemies.

-> Prevent the player from phasing through tiles like water, trees and walls.

T <sub>T</sub> ID	T <sub>T</sub> Name	🔍 Priority	🔍 Progress	T <sub>T</sub> How to Demo	Choice of topic
FR09	Day/Night cycle mechanic	Intermediate	Completed	After the plant is watered for the first time, night time begins with a simple dark overlay.	
F16	Healthbar for entities	Intermediate	ADDED	Player can attack enemies with the shovel. Each enemy displays a small red health bar above its sprite that decreases as it takes damage. When the bar empties, the enemy dies, drops coins, and plays a sound effect. In the same way, player and flower also have a healthbar that can be depleted by attacks from the enemy and die.	Hit Detection
F17	Healing Player	Intermediate	ADDED	Player collects enough water to fill watercan and interacts with the flower. The flower drops hearts and increases the current hp of the player. Healthbar reflects this.	
FR10	HUD + Banners	Low	Completed	While playing, there are tutorial HUD elements at the bottom of the screen explaining that WASD is to move, SPACE is to dodge and MOUSE is to attack.	Game Development
FR11	Watering plant mechanic	Low	Completed	When the player is collecting water, a watercan at the top right of the screen will fill up with water. Once overflowing, the player can press the RMB to interact with the flower and water it. The watercan will hover above the flower for a bit before disappearing.	Game Development
FR12	Multiple nights cycle	Low	Discarded	Complete Night 1 → Day 2 begins. Repeat cycle: collect water → Night 2 starts. Enemies spawn according to scaling configuration. Survive → Day 3. After Night 3 → win screen. <b>Discarded as to favor a single night time mechanic.</b>	
FR13	Plant growth sprites	Low	Discarded	At the start of game, the plant has a Beginner sprite (sapling). At the start of Day 2, plant sprite changes from sapling → intermediate. At start of Day 3, sprite changes to large. After surviving Night 3, sprite becomes fully grown. "Your plant is fully grown – You win!" appears. <b>Discarded for simplicity in order to allow the flower to stay as a constant and only heal player, be attacked and heal player.</b>	

<b>Choice of topic: (1) Collision Detection/Hit Detection and (2) Game Development</b>					
-> Research Hit Detection in order to implement the fighting mechanic to fend flower from enemies.					
-> Prevent the player from phasing through tiles like water, trees and walls.					
Tt ID	Tt Name	Priority	Progress	How to Demo	Choice of topic
FR14	Sprites and SFX	Low	Completed	Player is shown as sprite instead of rectangle. Entities such as chickens, wizard, player, etc all have sprites. Specifically, the ghosts have a floating sprite and the player has walking animation sprites. (Enemies attacking give a sound, as well and background music, etc.) Map is decorated in an autumn aesthetic.	Game Development
F18	Collect drops	Low	ADDED	The player can pick up items like water bottles and coins.	Game Development
F19	Collect objects	Low	ADDED	The player can go around the map and collect objects like keys and coffee. The player should also be able to open doors only after collecting the relevant keys and open the end chest.	Game Development
FR15	Enemy difficulty scaling	Low	Completed	After each new wave begins, progressively spawn more enemies for each night. This way, player feels that each wave gets harder.	Game Development