You managed to enter to a closed supermarket to steal some stuff that you really want. The more stuff you manage to steal the better. You can’t take everything you want in one go, so you would have to go back to the entrance several times to leave the stuff you have stolen. You will be able to use some of the shopping carts to carry more objects in your way. In order to get the stuff you will have to shake it for a few seconds until you see what is in there. There is limit time until the stores open again, so you will have to be faster. If you don’t manage to escape in time you will loose everything.

The supermarket is full of guards that are patrolling. The moment they see you they will chase you and if they catch you, you loose all the stuff you have stolen. You can use the stuff that you are carrying to throw it to the guards to slow them or to move faster.

The game is divided in two stages:

- **Stealth Stage** → This stage is when the player hasn’t been detected yet by the guards. You will move through the store to find the stuff that you want to steal. The more stuff you carry the more noise you will make, thus the guards will detect you more easily. Also you will move slower. You can grab a shopping cart to carry more things and move a little bit faster. You can find some red-bulls that will increase you stamina for the running stage. In order to get the stuff you will have to shake it for a few seconds until you see what there is inside. This will also make some noise.

- **Running Stage** → The moment the player is detected by a guard the running stage begins. In this part, the player will move faster but his movement will be limited by the stamina. The moment the stamina goes off, the player will move slower for a few seconds until it charges again. The player will be able to use the red-bulls found in the stealth stage to instantly increase the stamina. On the other hand, the player can throw the stuff that he is carrying to the guards in order to slow them down and to move faster.

**Paper Prototype**

**Description / Rules**

- Movement is Turn-Based. Every time the player makes one move, enemy/enemies also move.

- Limit amount of Objects you can carry: 5 (+ 5 If the player grabs the shopping cart)

- Shaking in order to find stuff takes two turns.

- Stamina is limited to 10 movements in the running part. If you run out of stamina you cannot move for one turn. If the player doesn’t move for one turn it resets all the stamina/Half the stamina. The energy drink allows the player to not use stamina for one turn / to be able to move two cells for one movement.

- If you have objects you can throw it to the enemies.

- Limit Time: 10 minutes. Every movement is 5 seconds

- Full Bag = 2 movement per turn in Running part

Small Map

- Limit time: 5 minutes (Each turn is 5 seconds). When time is <125 seconds an extra enemy appear.

- Max Objects : 3 (+3 Shopping cart).

- Full Bag = 2 movement per turn (Running part)

- You can throw objects towards enemies to slow them down or just drop objects to move faster.

- Shaking a box in order to search for an object takes 2 turns.

- Stamina limited to 10 movements. If you rest (no movement one turn) you recharge half of your stamina.

- Energy drink → Two movements for 1 turn in the Running part

**- Try a small map first, trying different distributions etc.**

**Target Experience**

A funny game that doesn’t give the sensation to be serious. Instead give the sensation to be funny.

**Questions to Answer**

What type of movement should be implemented?

* Non stop movement?
* Rough movement?

Is the running part fun? How can I make it more fun?

* Should movement be a little bit slippery In the running part? So It is a little bit more complicated to control and gives the feeling of being a little bit more funny to play.
* Obstacles in the map. Player can fall on it, but the enemies too. Like a puddle where player/enemies can slide (stunned for a few seconds).
* Could the addition of some sounds effects make it more funny? Or give at least the sensation of being more funny.

Is it too difficult? Or too easy?

* Energy Drink add two movements? Or just not spend stamina in this turn?
  + In the paper prototype the two movements per turn feels more useful than not spending stamina for one turn. But in the game it will make more sense to just not spend stamina for a few seconds.
* **Movement + throw object**? Or Choose between Movement / Throwing object
* How many enemies should I put?
  + 1 enemy at the beginning and when the time is about to end an extra enemy appears in the map. This feels okay, maybe a little bit easier at the beginning with only one enemy, but this can be change by putting two enemies at the start. However, the extra enemy when the time is closer to end gives the sensation that the store is about to open so there is going to be more people inside.

Which amount of time is the best?

* Not too much time to don’t let the player feel relaxed but not to short to not strees the player to much. In the end is a funny game.
* 5 minutes → Each turn is 5 seconds.
  + First try wasn’t to much time. Also when the running part started, sometimes it felt like you didn’t have much time. So the solution can be either adding more time or just disable the timer when the player is in the running part. Which I think is the best option.

Should all enemies follow you when you are being discovered?

* If they all follow you is it too difficult?
  + In the paper prototype, when all enemies follow the player, the player seldom manages to escape.
  + This can be solved by just following you by one enemy or by adding extra mechanisms during the runnign part that allow the player to have more options : Throw objects, lead enemies into obstacles, use booster of speed etc.
* Being followed by one guard ends up being to easy.

**Prototyping Unreal Engine**

**RED CODE → Dont touch this code**

**YELLO CODE → Example code**

**Pink Folder**

* Shouldn’t be touched. Is base coded for functionality (just for some exceptions should be modified).
* Here are the base classes for the NPC and character. So you should inherit from this base classes.
* In order to create an object that inherit from these base classes → New Blueprint → Search bar → BP\_Base…. → And you will create a blueprint with the base class as a parent.
* BP\_Game\_Object → It has a mesh we can change. It provides basic player feedback. Some functions to change color etc. You inherit from this class to create an object for the game that you interact or do whatever you want. Not player or NPC
* BP\_GameMode → Function to respawn the player when it dies.
* BP\_GameInstance → Persistent across levels. If there is any data that we want to store we can do it here.

**Code → Saving**

* Here we can store data that want to be saved every time that we saved. Right now it only stores the position of the player, so every time you save and load you respawn there.
* BP\_CheckPoint → Is a checkpoint for respawn the player at that position when the player goes through it. When player cross it, it dissapears. On the BP\_Player there is variable to control if all the level reset or not when the player respawn.

**AI**

* In the main menu, if you select the NPC and go into details and put AI you can see that there is some behaviour that can be modified like patrolling between some nodes, running away from the variable from “move\_to” etc.
* In the folder DATA → Maps → DecShowcaseAI there is a map inside here where you can see all the behaviors of the AI.
  + Clicking one of the enemies (Patrol one for example) we can move the nodes where it patrols or we can just add a new targetPoint.
  + Here we can modify all the parametes that we want for the AI.
* In the BP\_NPC there is some example code to see how to change behaviour or to act depending the behaviour.
* In the Base Class for AI there is a component called AI Perception that gives your NPC senses. This useful for stealth games that reacts when they see you. You can change all of these.
* Project Settings → Gameplay Debugger → To show stuff related with the AI → Pathfinding, senses ranges etc

**Particle Effects**

* You can edit all of these in a new Editor (Color, framerate scale etc)
* You can also code these particle effects so it appears when you click or at the position from the player etc.
* Spawn Emitter Attach function allows you to put the particle at one game object or Actor.

**Sounds**

* You can edit the sounds → Mixed them, extend them etc. So you can create new sounds from the one that they give you. Right Click → Create Cue (This open the editor to create combo sounds or new sounds).
* There a two different types of sound playing:
  + Play sound at Location → Just sound at a location.
  + Play sound 2D → You hear it in all the level.

**Textures**

* In order to use the textures you have to create a Bilboard in the object you want the texture. This way it will show in the top or next to the object.
* It is hidden in game by default. Dissable this in order to see it when you run.
* If you want to print the icon into existing objects of the world. You just create a material and add the texture.

**UI**

* You need to create a Widget Blueprint to show stuff on the screen. You can create a variable like the energy and display it.
* Inside here you can create text, buttons etc and you can easily display it on the screen.
* You can Bind these objects to values that the player can have like energy, health etc.
* After we have put our stuff inside the Widget Blueprint, we go to the BP\_TopGameMode in the pink folder, and we create there the WBP HUD Widget when the game is created.
* We select the Class that we want to display and the player controller. This way it will show all the stuff that we created in the Widget Blueprint into the player screen.

**Mechanics**

**2 Game Modes → Stealth and Running.**

**General**

* Global Timer indicating the remaining time for the player.
* The closer the time is to finish the more difficult the game becomes (More enemies appear).
* When running part the timer dissapears.

**Map**

* A starting point where the players starts. This starting points allows the player to leave his stuff that has stolen and to finish the game in case he wants.
* There are water puddles distributed on the map. This difficult the player movement if he steps on it in the Stealth Mode.
* Objects that the player can grab are always in the same position but they randomly change every time a new game starts
* ( Optional )
  + There are elements distributed in the map that makes noise if the player step on it in the Running Mode.
  + Map is a little bit darker so it makes difficult to see the objects
  + Objects are randomly positioned in the map every time a new game starts. There are some spots where the objects can be placed but not all of them will be filled with objects when the game starts. So it is random.

**Player**

* Movement in the direction of the mouse.
* Stealth Mode
  + Movement is not constraint to energy.
  + Can pick up a limit amount of objects. This limit amount can be increased if he grabs a shopping cart.
  + Picking up an object takes some time (Shaking effect). If player doesn’t finish the process of picking up an object (stop doing it) he continue where he left it (progress is not lost).
  + Red Bull objects give a bonus of speed to the player in the Running part. Bar doesn’t decrement for a few seconds.
  + The player can go to the initial point to leave the objects he is carrying in order to be able to pick up more. He can also choose to leave the store already with everything he has grab until then.
  + Optional
    - The more objects the player carries the more noise he makes , thus is easier to get caught
* Running Mode
  + Movement speed is incremented
  + Movement is constraint to an energy bar. When the bar reaches 0, the player movement is reduced until it is full again. Player can stop running to charge this bar before reaching 0.
  + Red Bulls give a bonus of speed. Energy doesn’t decrement for a few seconds.
  + If the player carries objects (not red bull) he can throw them to the enemies to slow them down / increment velocity of the player
  + The more objects the player carry the slower he will move in the running part.
  + If the enemies reach the player → Game Over
  + If player reaches the starting point he leaves the store with the stuff he has managed to stole.
  + There are water puddles in the ground that difficult the player movement if he steps on it.

**Enemies**

* When the timer reaches certain time a new Enemy appears.
* Stealth Mode
  + Enemies are patrolling in the map.
  + If they hear some noise they go to source of the noise. They stay there for a few seconds and if they don’t see the player the go back to his patrolling.
  + If one of the enemies see the player, all of the enemies start chasing him.
* Running Mode
  + They chase the player through the map
  + If they step on a water puddle their movement is reduced for a few seconds.
  + If they are hit by an object thrown by the player their movement is reduced.