

Game Name

*„Tagline / Slogan“*

TEASER

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Nicolas Huart – Game Designer + Level Designer + Menu Designer

Alexander – Game Designer + Physics Programmer + Procedural Content

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Xingze – Game Designer + Audio Engineer + Graphics Programmer

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Chapter 1. Formal Project Proposal

* 1. Game Description
     1. Overview (V2)

XXX is a competitive local multiplayer game for 2 or 4 players in which two teams of thieves try to rob the same bank at the same time. The goal of the game is to collect the most money before the round ends or the getaway base/vehicle is destroyed. Each player in the game controls a vehicle and can collect money by opening vaults, cracking crates or collecting valuables present on the map. Players can also steal their opponent’s loot by attacking them or their base. The game is set inside Credit Suisse and features a wide array of power-ups. The more money a player collects before bringing it to its base, the riskier the play becomes, as vehicles move slower and have impaired attack when loaded. This provides a fun layer of quick and dirty action on top of a more strategic game in which several tactics can bring to victory.

The game is developed by (our 5 names) as a project for the Game Programming Laboratory offered at ETH Zürich in the Spring Semester of 2018 under the supervision of Prof. Robert Sumner.

* + 1. Guiding Principles

We have three principles we want to base our game around: these are, that our game should be

* fun
* simple
* beautiful

We believe that to have a compelling game that can be enjoyed by players as soon as they jump in, we need to have a simple game with an intuitive control scheme as well as interface. We also need a strong fun component, that provides a layer of strategy underneath the frenetic action-packed gameplay. The game rules should be easy to learn yet provide emergent gameplay to keep the game fresh. All of this should be wrapped in a game and a user interface that is both beautiful and attractive, as well as polished.

The game should be nice to look at, easy enough to let players jump right in and fun enough to keep them coming back, yet have some layers of depth and strategy to keep the player engaged even after playing a few rounds.

* + 1. Background Story

Two teams of robbers want to steal money from Credit Suisse and Escher tries to prevent this from happening. Due to bad organization, the robbers have dropped money in the bank and must be the first to collect it and bring it to the getaway vehicle. Escher wants to collect the money and bring it back to the safe while the robbers want to get out of the bank with it.

* + 1. Design Decisions

***Time and Score***

The goal of each player is to maximize his profit by bringing money back to his base. The game ends either when a player reaches a specific score, when the time limit is reached or when one of the player manages to destroy his opponent’s base. Players can combine different winning strategies for a common goal: collecting the most coins.

***Characters***

Each player in the game controls a vehicle with specific life, speed and capacity and starts at his own base. Whenever a player goes through a place with a coin, he collects if it is possible. A player cannot collect more coins than the capacity of his vehicle allows. If he manages to go back to his base, his total score gets increased by the number of coins he just collected. If on the way, he loses all his life, he has to restart from his base and all his collected coins are lost, which will be scattered around the place where he died.

Players can also attack each other by performing a dash. When one player is hit by the other, with a certain probability he will become stunned and lose some of his money and life. During this time the other player can either collect the money and run away, or stick around for more action. When players have their whole life depleted, they lose all the coins they were carrying and respawn in their base.

***Control***

Each player can move around the map and interact with some parts of it, such as vaults and crates. He cannot go through the obstacles but some of them can be damaged using a bomb (power up). If the damages are enough, the obstacle will get destroyed and this may reveal new coins or power ups. (Some obstacles might also be moved with enough force to pass to a new part of the map).

In addition, a player can also attack another, reduce his life and steal some of his coins. The attack is the same for each player.

*@Note: Move Objects?*

*@Note: Attack base?*

***Visual***

The objects and model are 3D but the player can only move in 2D (no jump).

The screen is split into the number of players, each part showing a player’s view (one camera for each player). There is also a small global map, where each player can see where the coins, the obstacles and the power ups are.

The coins are initially randomly placed over the map and if chosen so, a new coin will appear each time a player brings a coin back to his base.

***Power ups***

Power ups change the property of each character and can be either temporary (e.g. speed boost) or permanent (e.g. capacity boost, life potion). There is also a special power up (bombs) that can be used to damage obstacles, or keys that allow players to get inside the vault. Other power ups might be used to improve the defense level of the base.

***Tunnels***

On the maps different tunnels are placed, which might be a shortcut to another place on the map. A further idea is to connect the different maps with these tunnels. If there are different maps, the base of each player will still remain on the first map. Otherwise it might happen that each player is on a different map, resulting in no interaction with the players.

***Vaults***

We will implement sections of the map in which the players can break in after performing some action. This will be a very risky action that a player can choose to undertake, but the potential payoff will also be great as vaults will be filled with money and valuables.

* 1. ‚Big Idea‘ Bullseye

* *Collect coins on the map and by fighting your opponent*
* *Procedural generation and different strategies*
  1. Technical Achievement

***Procedural generation of the map:***

We plan on implementing a procedural generation algorithm that will take care of placing coins, power-ups and obstacles. Doing so the map will always be different and thus it should be more fun and variated to play. Things to be procedurally generated include the position of the coins and the power ups and some of the obstacles.

*@Note: More details ?*

***Rigid Body Simulation:***

The attack of the players will be modeled as a rigid body simulation. We plan to use our 2d physics simulation to move characters around and prevent them to go inside obstacles. We will have the dash attack use physics (such as air hockey) to control players when hit, and will strive to keep an arcade feel to our game controls overall.

* 1. Team

In this section, we present the responsibilities that each member of our team will take upon himself.

* + 1. Simone

Simone will take care of the game engine, as well as the organization of our software structure. He will mainly be involved in programming the gameplay features as well as simple modeling and graphic tasks. He will also make sure that the team is following the project schedule.

* + 1. Nicolas

Nicolas will be in charge of the design of the static part of the map (bases, obstacles, background etc.) as well as the menu design. He will also be involved in the character modelling and will be managing the library of assets.

* + 1. Alexander

Alexander is building with Andy the rigidbody simulation to handle the physics correctly and testing the game to make sure it’s fun to play. He is also in charge of the dynamic part of the map as placing special power ups, coins, tunnels or other dynamic obstacles in a procedural way.

* + 1. Andreas

Andreas will implement the rigidbody simulation as well as the collision detection part together with Alexander. This includes collisions, spinning wheels, …). Additionally, Andreas will be controlling visual effects such as shaders, lightning, particle effects, etc.

* + 1. Xingze

Xingze will be in charge of the sound effects and sound library. She will also take care of all the models, textures, light maps and other needed assets. In the final steps, she will be creating the trailer of the game and preparing slides with Alexander for the presentation.

* 1. Development Schedule

We will be following an agile schedule, that consists in small sprints of one week in which each team member has one well defined task to complete (or multiple smaller ones). We will have weekly meeting to discuss the current achievements and decide the tasks for the following sprint, as well as test the game, discuss new ideas and make sure we are on schedule.

* + 1. Layered Task Breakdown

Our high-level view for the layered task breakdown is as follows: in the functional minimum, we plan to work mostly on tools for the engine and gameplay. This should give us a basic playable game. In the following phase, we extend gameplay functionality and add most of the features we want to have in our finished game. At the end of this stage we plan to have a fully working game that although is very rough, allows us to play. In the next phase (desired goal) we plan to focus mostly on graphics and menu, making the game something pleasant to look at, as well as including all the graphic assets and required menus. We include all the polishing in the last phase, such as audio, game balancing, and effects.

* + - 1. Functional Minimum

Our goal for the functional minimum is to have a basic game in which the player can control his avatar, move around in the level while picking up money and bring it to his base, with an isometric camera smoothly following the player. We want to have a simple HUD showing statistics such as time remaining in the round and money collected so far. No physical simulation will be present yet, and the level will just be a simple plane. The goal of this phase is to get everybody accustomed to working in MonoGame and have something we can start experimenting with. We also plan to start experimenting with technical stuff such as physics and rendering, producing a simple 2D rigidbody controller. We plan to be able to deploy this build to the Xbox already to make sure we don’t run into technical issues later.

* + - 1. Low Target

Our low target includes extending the game by allowing a second player to compete. This includes the addition of split screen functionality, ability to perform attacks and cause damage and money loss, respawn. We plan to implement a basic primitive level in which collisions work and to improve our player control to work with rigidbodies. We plan to expand the gameplay with almost all of the features, as well as expanding the HUD and start balancing the game to increase the fun factor.

* + - 1. Desired Target

In this phase we start focusing on graphics and menus. We plan to have a working game already, now it’s time to have a level with all graphics assets, menu that allows to select a starting avatar, add advanced gameplay functionalities such as power-ups, crates and vaults. We start distinguishing players by vehicle type with different stats such as speed and capacity. We will have some basic procedural money generation that makes the gameplay more unpredictable and thus fun. We will start having a small library of sounds we want to add as well as implementing most of them in the game.

* + - 1. High Target

For the high target we will mainly focusing in improving the existing game. The game’s graphics will be enhanced with additional work on the visual effects, such as shaders and particle effects (e.g. for dust). To improve the replayability of the game, other levels will be added.

* + - 1. Extras

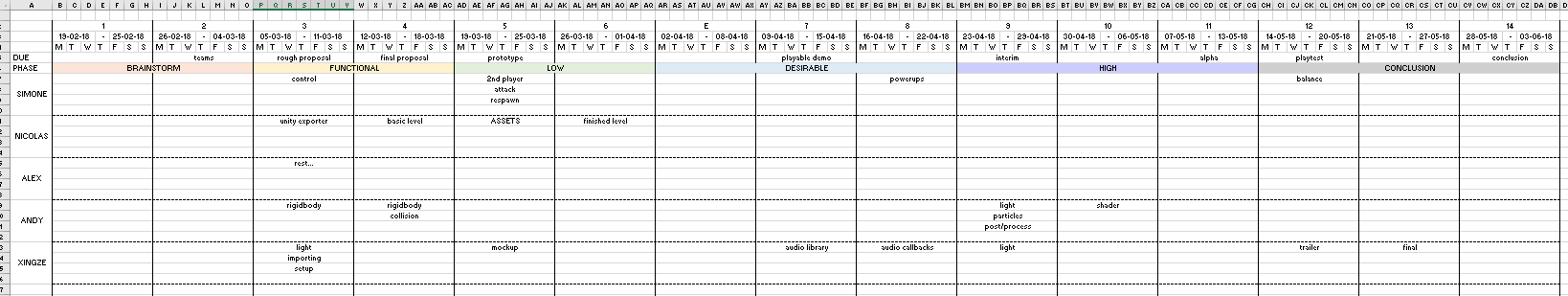
In this phase, the levels will be linked together in one gaming-round by connecting them with the tunnels. We still haven’t discussed much what we will be putting in this section.

* + 1. Task List

*@ Note*

* + 1. Timeline

This is a first draft of how we plan to schedule tasks. It is still a bit rough but should serve as a starting point.



* 1. Assessment

1. *@Note:*

Chapter 2. Prototype

*@Note*

2.1. Prototype Setup

*@Note*

2.2. Playing Experience

*@Note*

2.3. Findings and Conclusion

*@Note*

Chapter 3. Interim Report

3.1. Progress

*@Note*

3.2. Challenges

*@Note*

3.3. Future Work

*@Note*

Chapter 4. Alpha Release

*@Note*

4.1. Progress

*@Note*

4.2. Challenges

*@Note*

4.3. Future Work

*@Note*

Chapter 5. Playtest

5.1. Playtesting Session

*@Note*

5.2. Questions and Comments

*@Note*

5.3. Design Revisions

*@Note*

Chapter 6. Conclusion

6.1. Final Results

*@Note*

6.2. Experience

*@Note*

Rough draft of the project proposal

6.2. Personal Impressions

*@Note*