# Core Project Document

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Group 4: Pico Bello B.V.

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# 1 Summary

The game is based around a single story of a murder case. The story is told through different perpectives, each with their own destinctive gameplay and design. The story is told three times in total, each time giving more information about the murder. There are three roles: Detective, Journalist, and a family member. The game concludes in a finale, where, depending on the choices of the player, the killer is apprehended. The game is a sort of 'first person investigation' and is played by walking around in the scene with the keys and collecting evidence by clicking on different objects to investigate them.

# 2 Theme

You only get one story. There is only one story, but you get to see it on different levels and depending on your play style you get to see different things.

# 3 Target Audience

Our Target Audience is casual to midrange gamer, who is interested in an story based interactive experience. The age group is Teen to Adult. The target platform is PC, but we want to explore the possibility of expanding to mobile platforms as well, such as iOS and Android.

# 4 The Team

Group 4: Pico Bello B.V. consists of five team members.
**Thomas de Boer**, Game Designer. 4172760 - t.w.j.deboer@student.tudelft.nl
**Luuk de Niet**, Lead Artist. 4139658 - l.f.deniet93@gmail.com
**Boyd Verdoorn**, Lead Programmer. 4209346 - b.c.verdoorn@student.tudelft.nl
**Rense Wisse**, World Builder. 4230027 - r.r.wisse@student.tudelft.nl
**Jesper Spillenaar Bilgen**, Producer. 4147405 - jesper_sb_91@hotmail.com

# 5 Schedule

We will adhere to the Schedule as given in the assignment.

# 6 GitHub

We use GitHub for our assets. The account EWI3620TU has been added to our repository. The Repo is private an can only be accessed by collaborators. If there are any problems, please contact Thomas de Boer.

URL: https://github.com/twjdeboer/4-AwesomeSpel

# 7 Components

## 7.1 Computer Graphics - Luuk and Thomas 14⋆

- **3D Models**
  3D Models ⋆⋆⋆ We will use 3D models for interactive objects and clutter. We are giving this 3 starts because our game need many different models to create the city, players and all evidence. We also created procedural models withing blender by adding drivers, which creates an extra difficulty. Besides all of that, none of us had ever worked with Blender which makes this an extra difficult task for us.
  3D Animated Models ⋆⋆ We will use 3D animated models for the player and NPCs.

- **Textures**
  Textures ⋆ We will use differnt textures for game objects.
  Bump mapping/grime ⋆ We will use normal maps to make textures look more realistic.

- **Special FX & Juiciness**
  Sound Effects ⋆ Sound effects will be used to immerge the gamer more in the action.
  Camera Shakes ⋆ Camera shakes will emphasize loud noise when walking into objects like cars.
  Particle System ⋆ We will use Particles to simulate different environmental factors, such as rain or smoke.

- **Rendering**
  Light and Shadows ⋆ We will use many diffents ways of lighting to create shadows and a more misterious ambience.

- **User Interface**
  Start/Pauze/Quit ⋆ These screens will start, pauze or quit the game.
  Option ⋆ Music volume and control mapping
  Credits ⋆ Show how awesome we are and give credit where due.

## 7.2 Artificial Intelligence - Jesper 9⋆

A-star for NPC's ⋆⋆ Use an A-star node system to let NPC's walk around the park and the sidewalks
Use a NavMesh, Pathfinding ⋆⋆⋆ Use a navmesh to let cars drive around. Cars will stay on the right side of the road and will stop for the player or drive around it if possible.
Implement a Neural Network ⋆⋆⋆⋆ A neural network will be used to find out how close you are to finding the right killer according to the evidence you have

found. We will make a list of examples with combinations of found evidence and train the network with this. The output of the network will state how close you are to finding the killer and according to this you will be placed close or far away from the killer in the final scene and thus making it easier or harder to catch the killer in th final scene.

### 7.3 Web & Database - Rense 9⋆

Collect playthrough data ⋆⋆ We will save data (time you have been playing, collected items, position etc.) for the game.
Store data on web server ⋆⋆ Store the data stated above.
Visualize data on web server ⋆⋆ Show statistics.
create user account ⋆ ⋆ ⋆ create you own user account and save your personal game states on the server.

### 7.4 Programming - Boyd 14⋆

- **Game Mechanics**
  Procedurally generating city ⋆ ⋆ ⋆⋆ the street map and some important buildings will be recurring objects. All buildings in the city that are of less importance will be procedurally generated and textured by a unity script. Use a NavMesh, Pathfinding ⋆ This extra star for the navmesh is for the fact that the cars always stey on the right side of the road which was hard to implement.

- **Game Loop**
  Fps independent ⋆⋆ The game will run the same speed, independent of frame rate.

- **Physics**
  Collision Checking ⋆ Check if there's a wall in the way. make buildings stransparent if the player is walking behind them.
  Movement ⋆ Make sure the player moves using animations and bone structur. (Optinal extra star for running)
  Interaction with environment ⋆⋆ The player can klick on objects that ar lying around and is able to pick up important evidence.
  Conversation interface ⋆ ⋆ ⋆ When clicking on object this will show what the possibillities are with this object. you can click on whatever you want to do with the object and keep playing.You can also talk with NPC's.We gave this an extra star because it was hard to implement and it took a lot more time than estimated.

**Total: 47⋆**