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NAME OF THE PROJECT

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# 1. General Presentation

## 1.1. General Description of the Application

“Street fight simulator”:

The application we would like to develop aims to simulate social behavior of people involved (directly or indirectly) in a fight that would take place in an urban environment.

Since the goal of this application is to simulate different kinds of behavior, they would be more than just one:

* At the core of the project, some agents will fight against others (currently we are thinking about some sort of different gangs that would have different relationships with each other, and that would act differently considering the gang that an agent is belonging to). The first behavior would be the possibility for a givent type of agent (currently : gang members) to go and fight with another rival agent. However, the simulation aims to be realistic, so, the agent would take in account some parameters such as the number of rivals.
* Then the second main goal of the project is to simulate the social behaviors related to a fight situation. Only gang members can start a fight and every other agents reacts differently considering the situation, some would call the police, some other would help, some would run away ...etc

## 1.2. Expected Measurements

At this current time of the project’s life, the measures we would process are the following:

* The time between the start of the simulation and the first fight considering the number of gang members
* The frequency of pedestrian’s help during a conflict (call to the police, etc…)
* The Reaction time of the police.

# 2. Detailled Description

## 2.1. Environment Description

### 2.1.1. Environment Content

The environment would be an urban one. The agents would walk around streets. This environment could provide everything we can usually find in that kind of environment: streets, buildings, shops, police station…

### 2.1.2. Environment Dynamics

In an environment such as an urban one, the dynamics would be quite like what we can observe in real life: the buildings are static, the pedestrians walk around them, enter into them to buy things, to work, etc. The cops are moving along some defined streets by group of 2 or 3, like in normal patrols, and gang members mainly hang out as far as possible from the cops.

## 2.2. Intelligent Entities

### 2.2.1. Gang Member

#### 2.2.1.1. Expected Behavior

This is the only agent that can start a fight in this simulation. Before starting a fight, he would take into considerations various factors considering it’s environment like his level of fear, the presence or not of the police, the number of the potential “victims” and the number of allies with him.

#### 2.2.1.2. Key properties

The properties of every agent would be:

* Perception of the situation (people around for instance)
* Level of wrath
* Level of fear
* Relation with the other agents

At this moment, those are the major properties our agents would act with. But it is not fixed yet and that could change during the development.

#### 2.2.1.3. Interaction with other agent types

Currently, we defined the following interactions:

* Fight against an agent or a group of agents, mainly between to different gangs, it would not affect their relationships since they are rivals at the beginning, however, it could trigger the following reactions from the other agents.
* Leave the area
* Join a group to fight against another

#### 2.2.1.4. Interaction with Environment objects

The gang members would hang on at some different places of the areas, depending on their team but try as much as possible to stay far away from the police stations.

### 2.2.2. Honest Citizen/Police

#### 2.2.1.1. Expected Behavior

These agents react to the situations. It contains the cops, the people working, shopping, etc.

#### 2.2.1.2. Key properties

The properties of every agent would be:

* Perception of the situation (people around for instance)
* Level of wrath
* Level of fear
* Relation with the other agents

#### 2.2.1.3. Interaction with other agent types

Currently, we defined the following interactions:

* Help a wounded agent
* Leave the area
* Call the police
* Join a group to fight against another.

#### 2.2.1.4. Interaction with Environment objects

Since we are in an urban environment, the ordinary agents (pedestrians) would walk around ,go to shops, restaurants...etc, the police officer would be located near the police office and do some watch in the streets.

# 3. Technological Environment

The project would be developed in Java, mainly for the following reasons:

* In an enterprise solution, we wouldn’t add a pedagogic language to an existing project
* Java is one of the most used language currently, and develop our project in java would consist in a better approach of what will wait us in real life.

# 4. User Interface

We are going for a 2D Interface with a top down view. Agents will be represented as circles of different colors depending on their type. Buildings will be squares.

# 5. Work Packages

In this section, you should provide an tentative of description of the different work packages in your project. A work-package is a set of tasks that are all dedicated to a given topics. Below, examples are provided. But you could change them.

## 5.1. What is a Work-Package ?

The division of the project into “work-package”[[1]](#footnote-2) (WP) is a classic of projects. It is sometimes translated into French by « group of tasks », « type of action » or « activities », which does not reflect completely, the concept behind it.

If you look at the content, it’s simply a matter of breaking your project down into a few major activities. Generally, we find in all projects at least the following actions:

* + - * *Project Management*, i.e. related to the tasks dedicated to the project management itself;
      * *Communication*, i.e. the tasks related to the scientific and not scientific communication and publicity;
      * *Implementation of the project*, i.e. the work-packages that enable to reach the objectives of the project.

This will enable you to:

* + - * Make your project more understandable for an external evaluator by splitting its complexity into smaller units of works;
      * Dispatch the work load on several tasks within the different work-packages;
      * Assign the persons to the work-packages and the tasks into these work-packages;
      * Assign other resources (computers, etc.) to the tasks.

Each WP has:

* A description of the objectives of the WP;
* A list of tasks;
* A list of inputs (document, code, etc.) for each task that may be provided by another tasks within the same WP or another WP, or get from another source;
* A list of outputs, or outcomes (document, code, etc.) for each tasks.

**You are not supposed to be expert in project management, yet. That’s why, the list of WP and tasks that you will have to define and write into this document should not be “perfect”. But, take this opportunity in order to increase your experience related to a “professional” definition of a project.**

## 5.1. Work Package 1: Environment

### 5.1.1. Description

This package aims to provide the environment in which the agents will interact with each other.

### 5.1.2. Inputs

The numeric representation of an urban environment.

### 5.1.3. Outputs / Deliverables

List the information, the models, the files or the code that are produced during this work package.

## 5.2. Work Package 2: Basic agent

### 5.2.1. Description

The first thing we want to implement is the core of the project. It is the behavior of the basic agent/ The citizen who is just here to move from point A to B. We’ll implement the movement and the analyze of its environment.

List the tasks:

* Movement algorithm for the agent
* Recognition of its environment (buildings and other agents)

### 5.2.2. Inputs

The map of the environment in which they will interact and a list of points where they will go.

### 5.2.3. Outputs / Deliverables

Points on the 2D interface that willsimulate agents.

## 5.3. Work Package 3: The baddies

### 5.3.1. Description

These agents extend the 2nd work package and add the possibility to begin a fight with another gang member.

List the tasks:

* Perception of a fight situation: wrath, fear, number of opponents, ...
* Weapons: knife, hands, baton, gun?

### 5.3.2. Inputs

List of gangs (rivals, allies…) and eventually their spots.

### 5.3.3. Outputs / Deliverables

Fight simulation on the graphic environment.

## 5.4. Work Package 4: User Interface

### 5.4.1. Description

This package aims to provide the GUI used to load, display and eventually configure the final project.

### 5.4.2. Inputs

Some parameters entered by the user.

### 5.4.3. Outputs / Deliverables

The application itslef, the simulation.

# 6. Risk Assessments

Description of the risks that you could see and they may avoid you to finish your project.

Risk may be of different types :

* **Management :** related to the project management
  + Example 1: one member of the group leaves the group.
  + Example 2 : conflict between members on decisions.
* **Methodology :** related to the application of the agile methodology
  + Example 1: one member of the group does not deliver the outcomes on time.
  + Example 2: difficulties to determine the tasks of the next sprint.
* **Technological:** related to one of the technologies you have selected
  + Example 1: the selected technology cannot run enough agents under real-time constraint.
  + Example 2: the technology cannot be used for implementing a specific feature.

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Type** | **Description** | **Mitigation** |
| **R1** | Technological | Explain the risk that is related to a technicial point | If possible, Explain how you could solve the problem related to the risk if the problem occur. |
| **R2** | Management | … | … |

ANNEXES

# A1. Reports for the Sprint Meetings

## A1.1. Sprint Meeting #1

Date : XX/XX/20XX

### A1.1.1. List of tasks for the current sprint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Problem or Task Description** | **Possible Solution** | **Assigned to** | **Validation by (if applicable)** |
| **S1.1** | Design of …. | n/a | X | Y |
| **S1.2** | Implementation of… | n/a | Z | X |

### A1.1.2. General Comments

Write here some general comments that are discussed during the sprint meeting.

## A1.2. Sprint Meeting #2

Date : XX/XX/20XX

### A1.2.1 Status of the tasks of the Finished Sprint

|  |  |
| --- | --- |
| **ID** | **Validated** |
| **S1.1** | Yes/No |
| **S1.2** | Yes/No |

### A1.2.2. List of tasks for the current sprint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Problem or Task Description** | **Possible Solution** | **Assigned to** | **Validation by (if applicable)** |
| **S2.1** | Design of …. | n/a | X | Y |
| **S2.2** | Implementation of… | n/a | Z | X |

### A1.2.2. General Comments

Write here some general comments that are discussed during the sprint meeting.

## A1.2. Sprint Meeting #3

Date : XX/XX/20XX

### A1.3.1 Status of the tasks of the Finished Sprint

|  |  |
| --- | --- |
| **ID** | **Validated** |
| **S2.1** | Yes/No |
| **S2.2** | Yes/No |

### A1.3.2. List of tasks for the current sprint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Problem or Task Description** | **Possible Solution** | **Assigned to** | **Validation by (if applicable)** |
| **S3.1** | Design of …. | n/a | X | Y |
| **S3.2** | Implementation of… | n/a | Z | X |

### A1.3.2. General Comments

Write here some general comments that are discussed during the sprint meeting.

1. « work-package » is not a real English word. But , it is used in National and European projects. [↑](#footnote-ref-2)