

Faculty of Computing and Information Sciences
Graduation Project Deliverable #1

-----*Deep RL game tester*-----

Team Members:

<i>Student ID</i>	<i>Student Name</i>	<i>Track</i>

Supervised by: Prof./Dr. Mohamed Taher

Mentored by: (if exited)

<*Month in letters, Day, Year*>

(e.g., February 2nd, 2025)

Table of Content

1. System Description	3
1.1. Problem Statement	3
1.2. System Overview	3
1.3. System Scope and Limitations	3
1.4. System Objectives	3
1.5. Stakeholders	3
1.6. Project Planning and Management	3
1.6.1. Project Timeline Revisited	3
1.6.2. Preliminary Budget Adjusted	4
2. System Development Process/Methodology	4
3. Requirements Engineering	4
3.1. Requirements Elicitation Techniques	4
3.2. Similar Systems	4
3.2.1. Academic Scientific Research	4
3.2.2. Market/Industrial Research	4
3.3. Functional Requirements	5
3.3.1. System Functions	5
3.3.2. Detailed Functional Specification	5
3.3.3. Behavioural Modelling	6
3.3.4. Domain/Data Modelling	6
3.4. Non-functional Requirements	6
4. System Design (OPTIONAL: if there is a prototype)	7
4.1. Composition/Architectural Viewpoint	7
4.2. Database Design (OPTIONAL if required)	7
4.3. Design Classes and Methods	7
4.4. Algorithm Viewpoint (OPTIONAL)	7
4.5. Patterns Use Viewpoint (OPTIONAL)	7
5. Data Design (OPTIONAL: for projects that work with datasets)	7
5.1. Data Description	7
5.2. Dataset Description	8
6. Implementation (OPTIONAL: if there is prototype)	8
7. Appendices	8

1. System Description

1.1. Problem Statement

Emphasize one or two key challenges that this system aims to address and clearly state them as your formal problem statement.

1.2. System Overview

Show down with a figure of the proposed system.

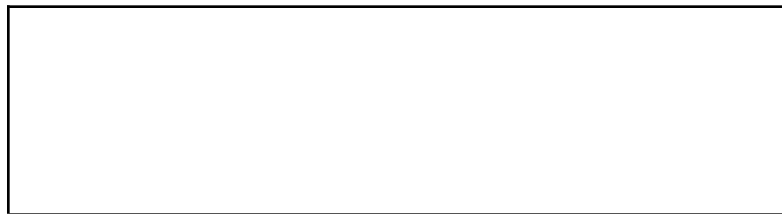


Figure 1: System Overview of XYZ Project

1.3. System Scope and Limitations

Present the technical scope of your project. This should cover (but is not limited to) technologies to be used, key functionalities, and any technical constraints or limitations. Provide the minimum requirements...

1.4. System Objectives

Outline clearly the specific goals you aim to achieve with your project, including measurable (SMART) outcomes and the overall impact you expect your project to have.

1.5. Stakeholders

Identify the list of the system/project stakeholders. You may depict a figure for illustration.

1.6. Project Planning and Management

Use some software for the primitive plan of your project. Describes how this product interfaces with the user.

1.6.1. Project Timeline Revisited

This section provides an updated version of the project timeline, including the major tasks to be accomplished, their interdependence, and their tentative start/stop dates. The

plan also includes information on hardware, software, and resource requirements. The project plan should be accompanied by one or more PERT or GANTT charts.

Note: *Any deviations should be reported with justification, and the action plan to mitigate any risk.*

1.6.2. Preliminary Budget Adjusted

This section provides an initial budget for the project, itemized by cost factor.

2. System Development Process/Methodology

You provide detailed information about the system development process or methodology at this stage. In addition, you should include the tools/technologies planned/used.

3. Requirements Engineering

3.1. Requirements Elicitation Techniques

Briefly describe the techniques used to gather requirements (e.g., interviews, surveys, prototyping) and their purpose. Mention the stakeholders involved and how the techniques ensure the requirements align with stakeholder needs. Add the details, including survey or interview questions and their responses, in the Appendix section for reference.

3.2. Similar Systems

Describes the relationship of this product with any other products. Specifies if this product is intended to be stand-alone, or else used as a component of a larger product. If the latter, this section discusses the relationship of this product to the larger product.

3.2.1. Academic Scientific Research

Here you need to present similar work that was published in at least 3 prominent papers in your research area. Selected papers should be approved by the supervisor and preferable to be published in a Scopus-indexed journal or conference.

3.2.2. Market/Industrial Research

Here you need to present relevant applications and present the key contributions/additions of your application, you also need to mention the strengths and weaknesses of existing comparable applications

3.3. *Functional Requirements*

Showdown with a figure of the system use case diagram.

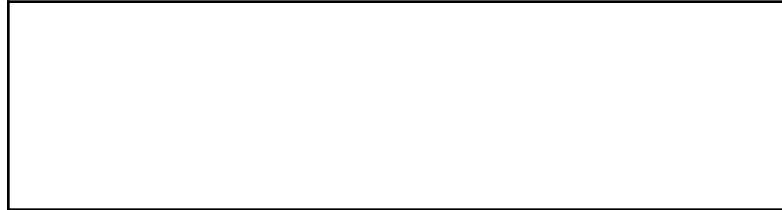


Figure 2: Use-Case Diagram of XYZ Project

3.3.1. *System Functions*

List the Functional requirements which describe the possible effects of a software system, in other words, what the system must accomplish.

Example:

Indicate the priority level of the requirement, such as "Must-have", "Should-have", or "Could-have".

1. The system must
2. Users should be able to
3. Users must be able to
4. The system must
5. Users should receive
6. The system must
7. The system should allow users to

3.3.2. *Detailed Functional Specification*

This section lists the detailed functional requirements in ranked order. Each functional requirement should be specified in a format similar to the following:

Table 1: TReq. Name

FR01	Req. Name
Description	
Input	
Output	
Priority	Indicate the priority level of the requirement, such as "Must-have", "Should-have", or "Could-have".

Pre-condition	None
Post-condition	

3.3.3. *Behavioural Modelling*

It includes sequence diagrams and/or activity diagrams of the use case identified.

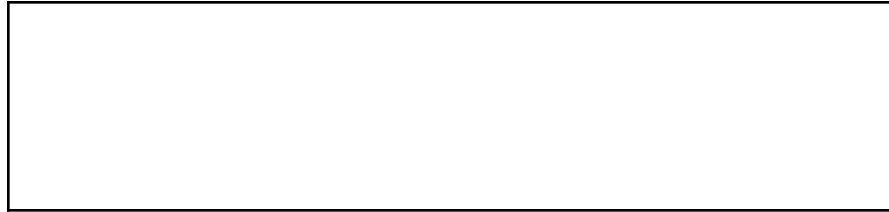


Figure 3: XY Sequence Diagram

3.3.4. *Domain/Data Modelling*

You should apply noun technique or brainstorming technique, and build the domain model class diagram.

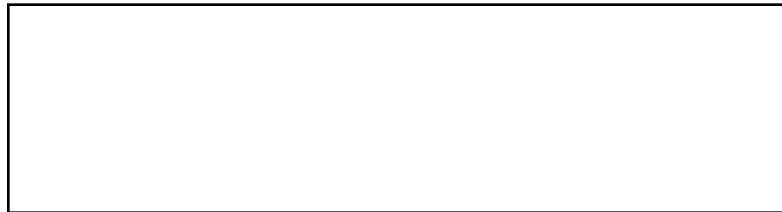


Figure 4: Our Abstract Class Diagram

3.4. *Non-functional Requirements*

Specifies the particular non-functional attributes required by the system.

Examples are provided below.

- 3.4.1. *Security*
- 3.4.2. *Reliability*
- 3.4.3. *Portability*
- 3.4.4. *Maintainability*
- 3.4.5. *Availability*
- 3.4.6. *Usability*
- 3.4.7. *Others as appropriate*

4. **System Design** (OPTIONAL: if there is a prototype)

4.1. **Composition/Architectural Viewpoint**

e.g: In figure 5, the diagram illustrates Architectural Design includes architectural components and layers such as: user interface component, data management components, application layer.....



Figure 5: Our Architectural Design Diagram

4.2. **Database Design** (OPTIONAL if required)

4.3. **Design Classes and Methods**

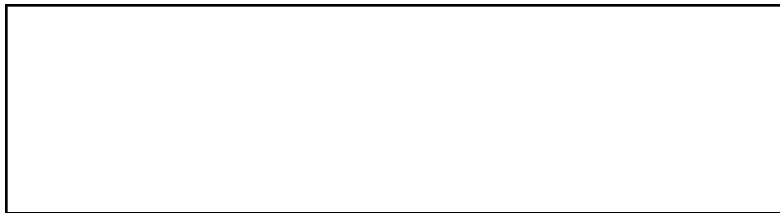


Figure 6: Our Class Diagram

4.4. **Algorithm Viewpoint** (OPTIONAL)

Specify the algorithms used, and consider including a figure to visually illustrate them if found.

4.5. **Patterns Use Viewpoint** (OPTIONAL)

Mention the design patterns used....e.g: Singleton design pattern

5. **Data Design** (OPTIONAL: for projects that work with datasets)

5.1. **Data Description**

Write a paragraph in this format:

- [Dataset Name] [Reference Number]: e.g: TEMP Dataset [1]:
[Provide a concise description of the dataset and its purpose.] The dataset includes [key

features such as dimensions, classes, instances, or variations]. It is used for [specific application or task] and supports [tools or frameworks, if applicable]. Unique features include [highlight unique qualities]. The dataset contains [specific size and scope details].

5.2. Dataset Description

Table 2: TEMP Dataset [1]

Dataset Name	Specify the name of the dataset. and mention if it's an abbreviation if exists.
Link	Provide a clickable or downloadable link to the dataset.
Size	
Number of Classes	State the total number of distinct classes (categories/labels) included in the dataset. If applicable, briefly describe what these classes represent.
Notes	<p>Highlight unique features of the dataset, such as compatibility with tools or systems, portability, or specific advantages for target applications (e.g., computer vision, gaming, or research).</p> <p>Include any prerequisites for use, such as licensing terms, usage limitations, or dependencies.</p>

6. Implementation (OPTIONAL: if there is prototype)

Provide screenshots of the first prototype. (if any)

7. Appendices

This section is optional. Appendices may be included, either directly or by reference, to provide supporting details that could aid in the understanding of the document.

You may provide definitions of all terms, acronyms, and abbreviations that might exist to properly interpret the document.

Add the details, including survey or interview questions and their responses mentioned in Section 4.1: Requirements Engineering.

References

Use a citation tool such as Mendeley, EndNote, or an online citation generator to ensure all sources are properly cited and formatted according to the required academic style.