

Tower Defense Game

Project Proposal
2023/24

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Objectives

This is a tower defense game; that is, the player will try to defend something, using different resources so he/she can construct buildings that have the ability to defend and expel enemies.

Some basic ideas will be considered in the design and coding of the game, namely:

- to add roguelike principles, as well as upgrades;
- to have the possibility to choose different types of rounds to obtain different bonuses;
- the possibility of having different game modes: (a) normal mode: typical tower defense in which the objective is just to defend the base for as long as possible or, until a certain number of rounds; (2) alternative mode: this mode is based on the previous one, but with the difference that at the end of each round the player places either defenses or enemies.
- different buildings and enemies with different attributes.

Scientific Areas

Computer Games, Computer Graphics, HCI

Tasks

T1 Literature review and gathering of code snippets over the web, in particular Unity web site (0.5 month);

T2 Design of the game (0.5 month);

T3 Programming of the game in Unity (1.5 months);

T4 Testing (0.75 month);

T5 Writing up the project report (0.75 month).

	Feb	Mar	Apr	May	June
T1	X				
T2	X	X			
T3		X	X	X	
T4			X	X	
T5			X	X	X

Project Basis

<https://unity.com>

Technical/Academic Requirements

Computer graphics, programming, and software development skills.

Deliverables

The student must deliver and submit the following elements before exam: source codes and project report.

Expected Results

- Software (source codes)
- Project documentation.
- Project report.

Bibliographic References

1. Jeremy Gibson. Introduction to Game Design Prototyping and Development, Pearson Education, 2017.
2. Victor Brusca, Advanced Unity Game Development, Apress, 2021.
3. Nicolas Borromeo, Hands-On Unity 2021 Game Development: Create, customize, and optimize your own professional games from scratch with Unity 2021, Packt Publishing (2nd edition), 2021.