

Group Projects - Resit A.Sc.1 - Development

Contents

2016-2017

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1. Project Overview

Old-Timer is an entrainment company specialized in all times video games classic revivals and wants now to rewrite the famous game "Digger".

You have been personally chosen among several subcontractors to do the development and you are free to use whichever language/library you want, such as Python/Pygame or C/SDL.

2. Functional Expression

2.1. The game

Digger is an arcade game originally released by the canadian developer Rob Sleath for Windmill Software company.

The player controls a mechanical digging machine. He wants to collect diamonds and bags of gold. When he has gathered up all these gems, the current level is completed, and the player pass to the next one.



There is a fixed number of enemies by level. They appear at the top-right corner and when all of them have been created, a cherry bonus appears at this location. The player can kill enemies by firing a single shot (rechargeable in thirty seconds in the first level, more in the following ones), dropping a bag of gold above them or eating them after having collected the cherry (invincible mode during fifteen seconds in the first level, less in the following ones). The player lost a life when he collides an enemy. When he appears, an enemy is a Nobbin, which means that he only uses existing tunnels, but after a while he changes to Hobbin, he is then quicker and can dig new tunnels. Notice that enemies can steal diamonds and bags of gold.

2.2. Video resources

Here are some videos of what the game should look like :

- [Example 1](#)
- [Example 2](#)

3. Deliverables

Students should include the following elements in their final delivery:

- A zip archive with the project source code. The source code must also come with the build system used (Project file, autotools...), if any.
- Project documentation, based on the template.
 - Technical documentation explaining your choices and/or implementation choices/details on the following items (at least):
 - Graphic engine
 - Algorithmic choices
 - Game manual

The first document is an academic document. Address the reader as a teacher, not a client. This document can be in French or in English, at your option.

4. Graded Items

The project will be graded as follows, on a 230/220 scale:

- Documentation : 10 points
 - User documentation (5 points)
 - Technical documentation (5 points)
- Core game engine : 30 points
 - General design (5 points)
 - Level generation (10 points)
 - The player loses the game when he lost his three lifes (5 points)
 - Level change - at least three levels (10 points)
- The player : 80 points
 - The player can dig tunnels (20 points)
 - the player can collect diamonds and bags of gold (10 points)
 - The player can take the cherry bonus and become invincible during fifteen seconds in the first level, less in the following ones (10 points)
 - The player can shot: with a delay of thirty seconds between two shots in the first level, more in the following ones (10 points)
 - The player can kill an enemy by a shot (10 points)
 - The player can kill an enemy by dropping a bag (10 points)
 - The player can kill an enemy by eating him when he has taken the cherry bonus (10 points)
- Enemies : 80 points
 - New enemies appear randomly under the form of a Nobbin (10 points)
 - The cherry bonus appears after all the enemies of the level have been created (10 points)
 - Nobbin transforms to Hobbin after a while (10 points)
 - Hobbins are quicker than Nobbins (5 points)
 - Hobbins can dig tunnels (15 points)

- Enemies can steal diamonds and bags of gold (10 points)
- Enemies follows the player to kill him (10 points)
- Enemies can kill the player by collision (10 points)
- Scoring : 20 points
 - 25 points for collecting a diamond (2 points)
 - 500 points for collecting a bag of gold (2 points)
 - 250 points for shooting an enemy (2 points)
 - 1000 points for collecting the cherry (2 points)
 - 200 points for eating the first enemy in the bonus mode, 400 for the second, 800 for the third, etc. (10 points)
 - Every 20000 points a new life is given (2 points)
- Bonus features (10 points)