




Dungeon Battle

A rogue-like game

 4 people

Project Description

Dungeon crawls, or more specifically rogue-likes are turn-based computer games in which a single player evolves through a procedurally generated dungeon, fighting creatures, finding various objects, acquiring experience. The final objective may be to reach the top (or bottom, if the dungeon is a cave) of the dungeon and come back, or to find a special object. Death is typically permanent, and plays can be very short, especially for beginners.

Skills

Scenario

Real Time programming

GUI

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

Level 0

Where everything must start.

- ★ Management
Project created on project management platform (e.g. github). An issue must be created for each goal to follow their progress, and allow for their validation.
- ★ Compilation
Standard build system, documented in a README/INSTALL file.

Level 1

You may now pursue to the level 1 of the project.

- ★ Documentation Required for lvl 1 validation
Source code documentation generated from build system and documented code.
- ★ Bug fighting Required for lvl 1 validation
Testing framework integrated in build system, including tests.
- ★ Verification Required for lvl 1 validation
Continuous integration for all relevant build targets, including tests.
- ★ Board
The game is played on a series of dungeon levels which are simple square grids. The grid cells may be empty, walls, or floor.
- ★ ★ ★ Graphics
The graphics can either be 2D or text based. There is a window where the board is displayed.
- ★ Controls
The player is controlled with qzsd and can move through the level.
- ★ Monsters
Monsters appear on the map, and move along some predefined path.
- ★ ★ Fighting
The hero can attack monsters, and kill them.
- ★ Experience
The hero can progress and level up doing more and more damages the more monsters he kills.
- ★ Intelligent Monsters
Monsters will go towards the hero, without getting stuck.

Level 2

Level 1 must be unlocked to read this section



Dodge man

A one screen game



3 people

Project Description

The player is stuck inside the window, and objects are falling from the sky. If the player is touched, he dies, and if a dodges an object, the object disappears after touching the ground. The longest the player stays alive, the highest the score, but the hardest it gets.

Skills _____

GUI

Real time programming

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

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Continuous integration for all relevant build targets, including tests.
- ** Window
A character, a background, and objects can be rendered
- ** Objects
Objects are generated in semi random fashion, and are falling vertically to the ground
- * Score
There is a score system, with high score and leaderboard.
- ** Gameplay
The more the player progresses, the harder the game gets. This imply to have the objects falling in a smart way which can support the acceleration. There should always be a winning strategy
- * Controls
The character can be controlled with q/s/d, left/right/crouch
- * Death
When hit, the character dies.
- * Jump
The character can jump.
- ** Animations
The character is animated, with several images for each actions

Level 2 Level 1 must be unlocked to read this section



Paint is not dead

A Collaborative drawing software



4 people

Project Description

This software enables the user to draw pictures on its computer. It can be freehand drawing, but the drawing may also be guided by the computer in order to draw specific shapes (circles, squares...). It can contain more advanced features, with for example edge detections and automatic color filling.

Skills

Image manipulations



GUI



(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

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- ★★ Freehand drawing
A simple window where one can draw with point and click.
- ★ GUI
A user interface allows to create a new drawing of specified size, and also to select the drawing tool.
- ★ Save
The user can save and load its drawing.
- ★ Shapes
A tool assists in the creation of some shapes, like squares and circles, with a live pre-visualization.
- ★ Types
When drawing a shape or a line, the user can select different options, such as thickness, color, filling,...
- ★★ Team Effort
In the spirit of etherpad, a server host each drawing, and several people can edit at the same time a drawing, with an historic of modifications made by who. The server should not make any rendering.

Level 2

Level 1 must be unlocked to read this section



Click and Run

A canabalt-like game



3 people

Project Description

In this game, a player-controlled character is constantly running through a world, always in the same direction. The only control that the player has is to make the character jump to avoid various sorts of threats. The objective is to run for as long as possible. The world is generated procedurally and on the fly.

Skills

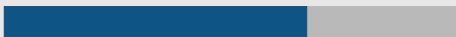
Gameplay



Real time



Graphics



(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

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Continuous integration for all relevant build targets, including tests.
- ★ Basic game mechanics
Display a character running through an empty world, with some control that allows to jump.
- ★★ Procedural world generation and display
Generate an infinite world with a fair amount of variety, and display it on the start screen, which should be scrolling from left to right through the world.
- ★★ Complete game mechanics
Put the previous two items together and detect death conditions, at least collision but perhaps also falling out of the screen.
- ★ Menu
The start screen should still display a generated world, and also display a menu for starting a new game; after death, the start screen is displayed again.
- ★ Animation
Animate the character, its jumps, and perhaps its death(s).
- ★ Background
Generate an infinite background for the world, and display it with a slower scroll, simulating a parallax effect.
- ★ Score
Compute a score, display it during the game, and have a leader board which prompts for a player name when a new high-score is reached.
- ★ Adaptive difficulty
Introduce new difficulties, in the form of new items or landscape features, when the score reaches predefined levels.

Level 2 Level 1 must be unlocked to read this section



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Accounting for friends

 3 people

Project Description

The software should allow to keep track of money spent between friends, e.g. during a holiday. It should help them to settle their accounts.

Skills _____

Web



Databases



(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

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Continuous integration for all relevant build targets, including tests.
- ★★ Basic features
Functions to create a new database; create payers; add a transaction; view past transactions and current balance.
- ★★ Resolution
The tool should propose solutions to balance the account: optimizing either the total number of transactions, or the maximum number of transaction per user.
- ★★★ Web interface
All of the above features should be usable through a web interface. The web service should require to log in. Each user of the service can create various projects, and grant rights to other users on each project (addition/deletion/modification of transaction items).
- ★ CSV report
Produce a CSV report containing all the transactions and the transaction induced by the resolution.

Level 2 Level 1 must be unlocked to read this section