

Code Lab

Design Document

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 Visualizing your science



1 INTRODUCTION

Code Lab is a game where kids collaborate on escaping from an underground dungeon by programming their in-game characters to fight monsters, solve puzzles and collect gems. The game is played in a collaborative environment such as the Tromsø Display Wall[1], where kids program on their own devices and run the game on the large display. The display wall environment provides an interactive arena where kids can collaborate on completing the game together.

Since the kids need to program the characters to perform different tasks, they will have to learn the basics of programming. The different levels will require them to learn about *variables*, *data structures*, *functions* and *control statements* such as *for*-loops and *if*-statements. As the kids play the game, the puzzles and problems they are faced with will increase in difficulty, making it necessary to design and implement more complex solutions.

The game is intended for children 10 - 16 years old, who already have some experience with graphical programming environments such as Scratch[2]. It is intended for kids that want to learn more about programming, specifically getting started with text-based programming.

2 DESCRIPTION

2.1 Game Narrative

2.2 Game Setting

2.3 Game Tasks

3 KEY FEATURES

3.1 Game Mechanics

3.2 Progression

3.3 Reward and Motivation

3.4 Balancing

4 PLATFORM

4.1 Art

4.2 Music and Audio

5 PRODUCTION AND TEAM

6 COMPETITION AND INSPIRATION

REFERENCES

- [1] O Anshus, Daniel Stødle, T Hagen, Bård Fjukstad, J Bjørndalen, L Bongo, Yong Liu, and Lars Tiede. Nineyears of the tromsø display wall, 2013.
- [2] Mitchel Resnick, John Maloney, Andrés Monroy-Hernández, Natalie Rusk, Evelyn Eastmond, Karen Brennan, Amon Millner, Eric Rosenbaum, Jay Silver, Brian Silverman, et al. Scratch: programming for all. *Communications of the ACM*, 52(11):60–67, 2009.