



# **CS 319 - Object-Oriented Software Engineering**

## **Final Report**

### **Iteration 2**

#### **CSCrush**

#### **Group 1A**

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# 1. Introduction

CSCrush is a 2-D match-three puzzle type video game as desktop application. The user can play this game by using mouse. The aim of this game is reaching the target point which is defined according to the level by swapping book icons which are vertically or horizontally neighbor to each other. Player try to destroy at least three books by aligning them in same order vertically or horizontally. If the player can reach the target point, the player can access to the next level. Moreover, there are some power-ups and special books which are help the user. Power-ups allow player to swap books which are not neighbor, destroy a chosen book, change five random books as special books, change a chosen book randomly and destroy the neighbor of chosen book. The user can use them in difficult circumstances. Special books are horizontal and vertical. If the player clicks on a vertical special book, this book destroys all the vertical line of the book. If the player clicks on a horizontal special book, this book destroys all the horizontal line of the book.

If the process of software is mentioned, database, animations and altay power up is completed.

# 2. Design Changes

AnimationList class implemented to maintain the connection between GUIManager and GameManager. This is because, old play table which is before destroying and new play table which is after destroying is needed to implement animations.

### 3. Lessons Learnt

Time management and sharing workload is important. Moreover, the harmony of classes are challenged us because we force ourselves to maintain the connection between the classes. For example, We have to implement new class (AnimationList) to maintain the connection between GUIManager and GameManager classes.

### 4. User's Guide

#### 4.1. System Requirements & Installation

The CsCrush is developed in Java platform. It needs JRE7 (Java Runtime Environment). The minimum system requirements are 1.6 GHz processor and 2 GB ram. It is also needed the internet for signing up and logging in.

The player can download it as jar file. After downloading, the player can run it.

XAMPP v3.2.2 must be installed to run database locally. Since we do not have any domain, we could not use a online database but a local database thanks to XAMPP. After installing XAMPP, you should open control panel of XAMPP and start Apache, MySQL and Tomcat. Then, you should press the admin button of MySQL to open phpmyadmin which is database management interface. Import the sql of our database (cscrush.sql) and display tables and entries via phpmyadmin. Now, the java application can connect the database on localhost thanks to JDBC library.

## 4.2. How to Use

The software is user friendly and it is used by only mouse clicking and dragging. The player can understand how to use it when the game is opened. Firstly, the player has to sign up if the player has not got an account. After logging in, main menu is opened. There are credits, settings, info&help, high score, exit and play buttons in this menu.

If the user clicks on the credits button, the player can see the developers' names.

If the user clicks on the settings button, the player can turn off the sound of the game. Moreover, there is a logout button which provides an access of signup and login screen. In that sense the users can change the accounts.

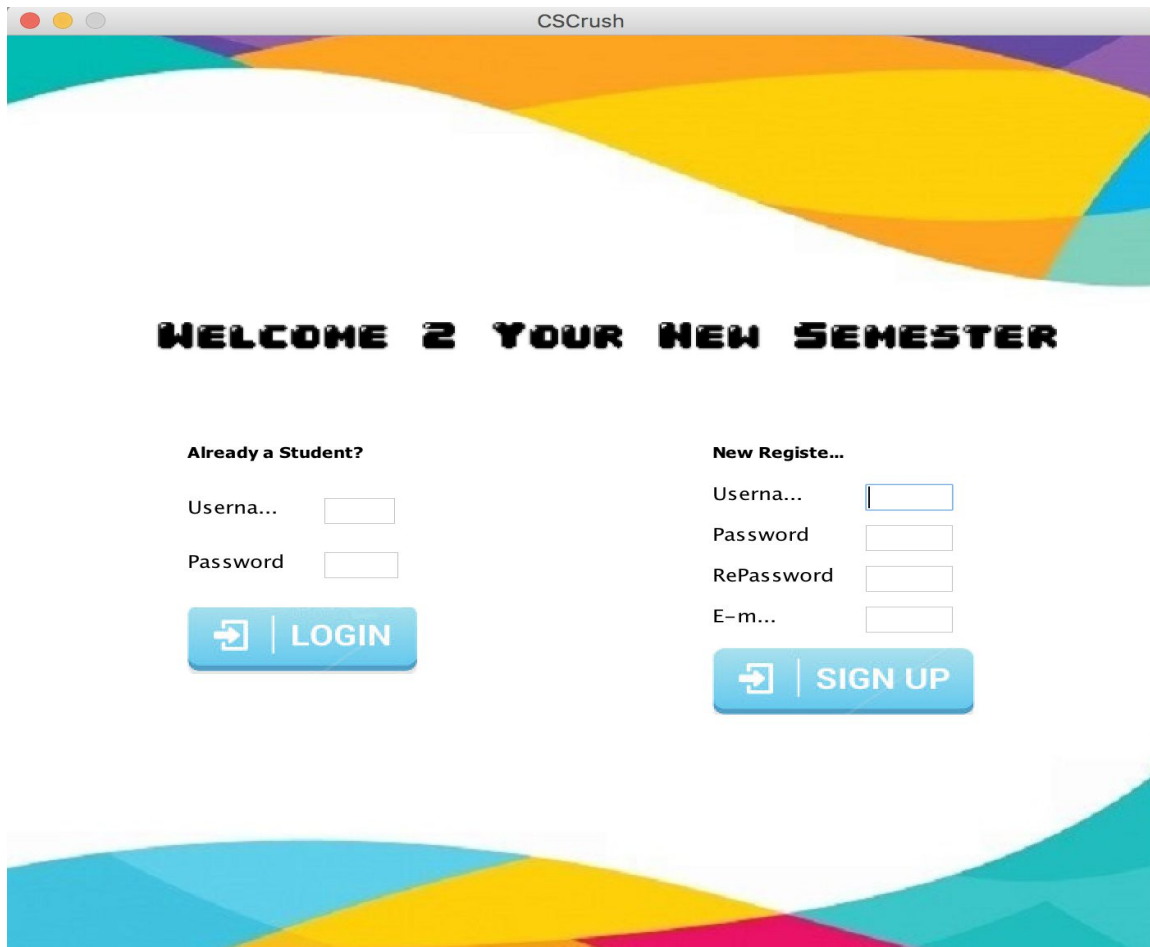
There is also info&help button to inform player about power-ups , book types and short information about how to play.

The high score button shows the players of the game

If the user clicks on the play button, a screen which shows the levels and difficulty of levels is opened. The user can't click on a level if the player doesn't complete the previous level requirements. After clicking on the level, the game screen is opened. The main action of the game is swapping. The player swaps the books by clicking on and dragging. The player tries to align the same books in order according to chosen level difficulty by swapping. For example, if the user chooses 4 difficulty, he/she has to align at least 4 books in order to destroy them and gets points. After the user reaches the target point and finishes the movement count, the score is saved and the player can go to next level and a pop-up screen is opened to congratulate the user. If the player couldn't reach the target point, a pop-up screen is opened to warn the user about failure.

Exit button is used to close the software.

## 5. Screenshots




The screenshot shows a web application window titled "CSCrush". The background features a colorful, abstract design with wavy bands of yellow, orange, and teal. The main heading is "WELCOME 2 YOUR NEW SEMESTER" in a bold, black, monospace-style font. Below this, there are two columns of login and registration options. The left column is for existing students, and the right column is for new registrations. Each column includes input fields for username, password, and email, followed by a button with a right-pointing arrow and the respective action label.

**WELCOME 2 YOUR NEW SEMESTER**

**Already a Student?**

Username

Password

 **LOGIN**


**New Register...**

Username

Password

RePassword

E-mail

 **SIGN UP**

Login and Sign Up Menu

# CSCRUSH

SETTINGS

INFO&HELP

CREDITS

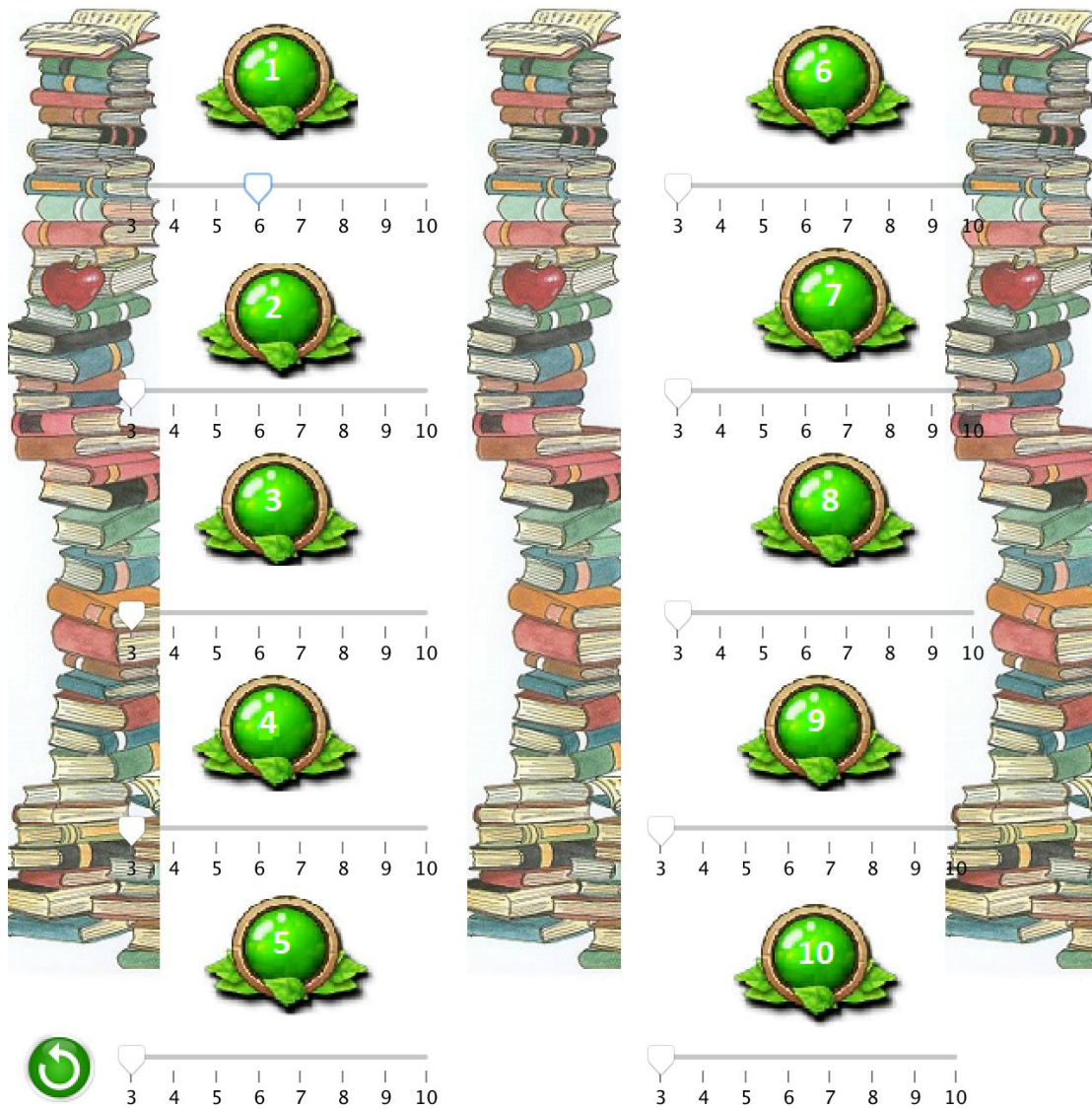


HIGHSCORE

EXIT



Main Menu



Level Menu





Game Play Screen

## 6. References

Bruegge, Bernd, and Allen H. Dutoit. *Object-Oriented Software Engineering: Using UML, Patterns and Java*. Prentice Hall, 2003.

Gizdich, John. *Java Tutorial 44 (GUI) - Simple Animation*.  
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[github.com/Seftali/1A.CSCrush](https://github.com/Seftali/1A.CSCrush).