Documentation of the Software Engineering Exam

Naming Convention:

C# convention:

* Methods: Capital beginning
* Private fields: “\_” + lowercase beginning
* Public fields (in unity automatically a serialized field):

lowercase beginning

* Serialized Fields: lowercase beginning
* Public static fields: capital beginning
* Protected fields: capital beginning
* Bools: with Auxiliary verbs
* Events: “on” in beginning
* Local private var: lowercase beginning

Personal:

* C# scripts: “C\_” in beginning
* scripts attached to a UI ToolkitDocument and containing UI Elements:

“C\_TK\_” in beginning

* UI Toolkit Documents: “TK\_” in beginning
* UI Button fields: “but” in beginning
* UI Label fields: “txt” in beginning
* UI VisualElement fields: “vis” in beginning
* Naming within TKDocuments: type of Element in beginning + “\_”
* Folder Structure: Everything UI related goes in a separate folder,   
   everything else however it makes sense

Used Patterns:

Decoupling & Oberserver: I used events at three points  
First for the stopping of the movement after the game finishes or the player dies.  
Then to switch the color of the finish triggers, when the maximum amount of diamonds is hit.  
And also to switch the screen, when both players are standing in front of the finish triggers at the same time, while having collected all diamonds.

Naming: I always tried to give names, that speak for themselves, and I wasn’t wondering once, what exactly a variable name was supposed to mean, while working on the project.

Flywheight: I am not really sure, how unity stores prefabs, but it seems to me like they are a concept of the flyweight pattern, since all objects of the same prefab are accessing the original prefab all together.

Changes of the class diagram:

*Scripts:*

The scripts C\_TK\_Start, C\_TK\_Sure and AlwaysThere were added. The C\_TK\_ scripts felt useful while working on the project, so I added them and the AlwaysThere script was very essential for passing some variables easily from one script to another without big serialisations or connections between the scripts.

The scripts C\_TK\_Dead and C\_TK\_Finished were merged, as they are really doing the exact same – either restarting or closing the game.

The Script C\_Finish was parted into two scripts, as it was easier do make them react differently to the two different Players.

The script C\_IceGround and C\_ElementGrounds were deleted.  
The IceGround would have been quite a big other feature, and I did not want to spend too much time on this.   
The ElementGround Script as a parent for the other grounds wasn’t needed, as what all the Ground tiles have in common is saved within their common prefab and not within this script.

*Connections:*

While working on the project I also realized that nearly all C\_TK\_ scripts must also be able to call the switchScreen script, so connections there had to be added.

As the when the Diamonds were collected the counter on the playing screen had to go up, they had to be connected directly, without the switchScreens in between.

I also added some events, and connected the scripts which were working together via them, with the aggregation arrow, since they were still dependent on each other, but would still work, if the other were deleted.

Unit Tests:

I resign. I do not know, why it is not working. I watched several tutorials and I really like the idea of the unit tests, but I was not able to do one.  
I wanted to do tests for the direction of movement, the movement itself and the counter of the maximum diamonds in the scene.  
But I couldn’t access the scripts from the TestingScript, even when I added the assembly reference and when I just turned to writing the code I wanted to test from, instead of accessing it from the other scripts, to just directly into the Test script, it always gave me the error: “Boxing allocation: conversion from 'int' to 'object' requires boxing of the value type”.  
Even when I put the very same vars into that, it still complained about the conversion, also if I just put two numbers in there. Google also didn’t say anything useful, when I googled that error and I am out of ideas right now.  
I’d be very grateful, if we could maybe look in class into this again.