Team "Rapunzel"

**Team members:**   
  
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**TFS repository:** <https://teamrapunzel.visualstudio.com>  
 **Game plot:**The game is a labyrinth. The main idea of the game is to get as much bonuses ($) as you can. The game is over when your time is up. After getting a certain amount of bonuses the player may go to the teleport (@) and to be transferred to another level. Now in order to reach to this level teleport the player has to collect more bonuses. The score is saved in a text file after the game is over. There is an in-game option to pause the game or to exit it. There is a background music of super Mario, it runs simultaneously with the game using an additional thread for the music.

**Behind the curtains:**  
The labyrinth is created randomly every time you start the game, using the *BFS algorithm*. It is saved in a *two-dimensional* array, where 0 means path, 1 means wall and 3 means bonus.

The starting screen is controlled by an *array* (a *well* as the game-name printing on the starting string). The other thing being saved to *array* is the coordinates of the player. Else, the *list<T>* controls if there cells neighboring the path in the maze, so that the player could move to that cells. Another thing being controlled by a *List<T>* is the bonuses.

A bunch of *methods* is used in the game to be used for:

* Welcome screen;
* Resetting color of the passed way;
* Starting game (by clicking “S”);
* Score printing;
* Game field;
* Time and result field;
* Creating bonuses;
* Pausing game;
* Game settings;
* Saving game;
* Loading saved games;
* Sound function.

Dozens of *existing .NET classes* as int, double, char, Boolean and other are used in the program.

It is foreseen that some exceptions may occur in the code so there are couple of *exception handlings:*

* If score file is not found;
* If score file directory is not found;
* If any other exception occurs;

An *external file* keeping score records is used in the game.

As an extra-contribution to the project there used object-oriented approach, sound effects, randomization and saving game to a text file and loading it when needed..

**Summary overview:**

Whilst working on the project, we reached the main target of the team-work side of it – despite of the level of knowledge we all contributed as much as we could – the most experienced team members were always of help to their less experienced co-members, who were striving to commit as much as their knowledge could allow.

All the pre-requirements were met (and over-met) and even extra functions were implemented.

Dealing this way, we get used to working on real-world project and get valuable experience in team collaboration with TFS. As a result, we have got a fully functioning game despite of the requirement which did not demand us to do so.