

# 2D Platformer Game Summary

This summary will go over the aspects of the game explaining most of the ideas and some that are not necessarily easy to see in the code or perceive while playing. It is based on the tutorials we covered in the course, but built in a way to demonstrate how I would refine a simple game into a more action-oriented platformer.

## Graphics

The game is based on medieval times and as such the backgrounds for the levels are thematic – there are 2 deep forest backgrounds, 1 far from the castle background, 1 in the city, and 1 in room with the skeleton of a king. These were chose for purposes I will discuss in the Game Design part. While these backgrounds are not from the same source, I searched for once that are pixel art for somewhat of a consistency in the art style. Same goes for the character – a pixel art hero, wielding a sword and a shield. I had to manually re-touch the animations (and shorten them a little), as defining the boundary boxes within the code caused some problems with the hit detection and that is a vital part of the game, so I could not risk to be breaking at arbitrary times. The character has an idle stance, and animations for attacking, jumping, dying, and celebrating – this being him holding up his shield when he reaches the level exit as in to signal he is prepared for the next challenge.



*Fig.1 Idle pose*



*Fig.2 Jump animation*



*Fig. 3 Death animation*

## Game design

These backgrounds were chosen to tell the classic “hero’s journey” tale as this is an action-adventure game – he starts somewhere in a deep forest, the forest goes brighter as he approaches its edge, then he travels past castles to his destination, he enters the city, and finally he finds the throne room, but the king is long dead, seemingly killed. As the game does not have a real story, I have tried to create a somewhat subtle one. However, due to the gameplay taking the upper hand, for the purposes of the course work the background displayed for any given level is randomised, but this leaves the player to piece their own story – or maybe even order the puzzle and guess my intention.

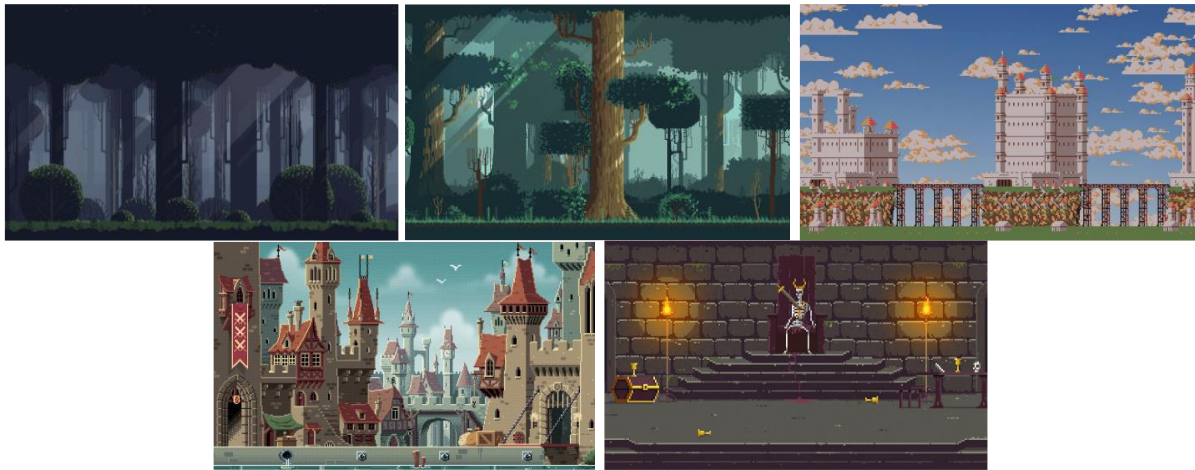


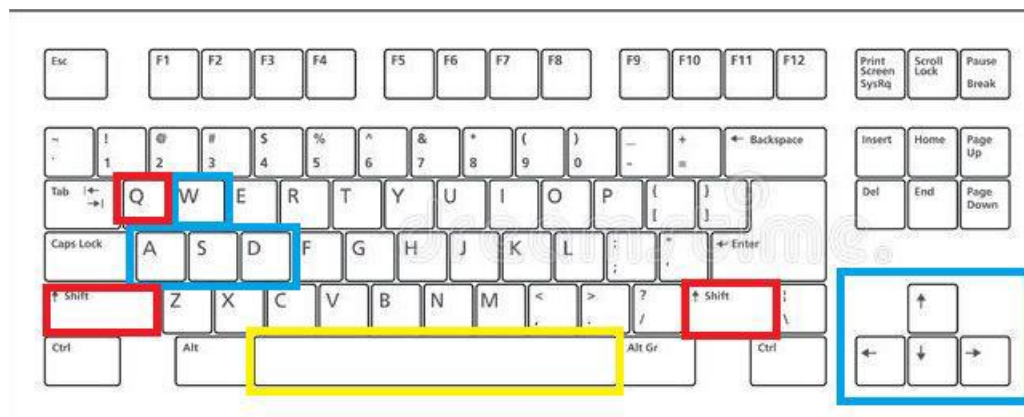
Fig. 4 The game's backgrounds for the hero's journey

## Sound

The game makes use of a variety of sounds to signal events to the player – from picking up the level diamonds, to the player making sounds when jumping and attacking to killing a monster or getting killed. I looked into adding a background music, but after testing a few royalty-free melodies I decided against it because all of them got repetitive after a while and I would rather not annoy the player if I cannot put an adequate enough music.

## Controls

The game is designed to use fairly standard controls and can even be played with one hand. Those are:



**Arrows / WASD** – move

**Left/right Shift / Q** – attack

**Space** – jump

Please note that while there is no jump + attack animation, you can still perform that.

*Developer Hint 1:* Make use of it – you will need it in a few places. I have made one particular case to be what I consider obvious in order to reach some of the gems, as I like the idea of teaching the player not through text, but through gameplay.

*Developer Hint 2:* Walking and attacking gives you a dash move. Helpful to clear areas with multiple enemies when they happen to “stack” nicely. Also how long you hold the attack button matters!

## Gameplay & Mechanics



*Fig. 5 A sample level – the top left square indicates the player stats*

The gameplay goal is simple – reach the level ending. The challenge comes from getting as many gems as possible in the given level, but also do it fast as every second adds to the final score. Every diamond is worth 10 points, and at every 150 points the player earns an extra life. It is the score that matters and not the number of diamonds, as the score will be completely reset if the player loses all their lives.

The player needs to be careful as he/she starts with 2 lives and upon dying a life is taken. I have attempted to create somewhat weighty jump mechanics and place a few tight platforms with tricky to hit enemies as enemies kill the player in one hit, so quick reflexes are key. The combination of the above elements – time trial plus bonuses collection plus danger of the platforming creates a tight experience, that first timers won't just breeze through if they want to get a high score.



*Fig 6. The Game Over screen – the only time I use text to tell about a mechanic, i.e. the score reset.*

## Additions I am planning for the near future

Improvements I plan to work on in my free time:

Music – I would like to find a fitting theme that is not too short and not too intrusive

More levels – currently the game only has 3 levels, but this is because I wanted to show different combinations of the elements and challenges possible. Level-wise this is (currently) more of a showcase than a finished game.

More backgrounds and layers of elements - following the above I want to make it a bit more varied than just static backgrounds. Also, as of now the killed enemies disappear, I would add a small cloud explosion animation to go with the “poof” sound to have a visual representation of a killed enemy. If I could find an enemy with a dying animation I would rather replace all the enemies for more visual appeal.

Leaderboard – so when somebody reaches game over, they can record their name and high score. It did not make much sense in the current context, but with more levels i.e. more room for different results this will be a priority on my list.

And finally I would admit that I was so caught up in experimenting with mechanics and playtesting my own levels that I somewhat forgot to think about a nice presentable start screen. That might be a “condition” from the real world where a lot of us pretty much blast through a game’s starting screen and truly get involved with it when a level starts, but in any case I would look into creating one even just for the learning experience to do so in C#.

And finally – thank you for playing.

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