Computer Games Development Project Report Year IV

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Acknowledgements

Project Abstract

Does adding elements from an RPG (Role Playing Game) work for a platformer game or does it turn into an unplayable experience?

My goal for this project is to create a Platformer that uses RPG elements to hopefully enhance the platformer and make it a more enjoyable experience.

My goal is to see if the way I have chosen to incorporate these elements, the primary one being a levelling system, would have a significant effect on the gameplay loop of a platformer. I have chosen the levelling mechanic, as it is the most defining characteristic of the RPG genre.

Genre mixing is something of a trend among platformers, for example Dead Cells is an action platformer mixed with a metroidvania and a roguelike. I feel that this is because platformers are one of the least constrained genres, you can incorporate many different ideas and mechanics into it, making it one of the most adaptable genres, for example Salt and Sanctuary is a platformer and a souls-like, or Braid is a puzzle platformer.

But I've never seen a platformer where the core mechanic was a level up system a la SMT (Shin Megami Tensei). I found that an interesting observation, so I decided to investigate the creation of one for my project.

If levelling up allowed you to directly affect how the platforming functioned, how different would the playstyle of the player be? Do they rush in and go straight for the end without levelling much, or do they level up as much as possible and have an easier time? Or do they choose different stats each time for a balanced character? Or do they focus on one stat and create an unbalanced character in an attempt to breeze through the game? All these questions and more pushed me to see how this would all work in practice.

Project Introduction and/or Research Question

For this project, I will create a 2D Platformer that takes an element from another Genre of game. In this case I have chosen RPG and the mechanic is a levelling Up mechanic.

Throughout the years platformers have focused on adding unique mechanics or systems, changing how levels work, and in most cases developers seem to push for platformers to have more 3d aspects or have some unique feature to it and have the game be built around that, for example:

The Game Celeste had a main mechanic of a dash and the whole game was built around that feature and they built more features and mechanics around it. For example the blocks in the later levels of the game that reacted to your dash. When you dashed they would move to a new position in response to your action, and then slowly move back to their original position which in turn led to some interesting puzzles.

Or another example is Super Mario Odyssey where the main mechanic of that platformer is that you can throw your cap to make a makeshift platform , it can be used to gain extra height, or even change your direction mid air, players have came up with ways of using this feature to add more depth to overall movement allowing for more interaction/exploration of the environment. An additional aspect is the ability to take control of the enemies with the hat, to change how the game plays as the enemies are varied and often have unique traits to them allowing for more interaction with the game world.

My game Is similar to that, I have one core feature that the game is built around a levelling system from the RPG genre of games.

On the RPG side of things I genuinely Think the concept of levelling Up could fit into many more genres and there are ways to make it work, It's been done in First person shooters, third person shooters, roguelites, but I haven't seen many Platformers that use the idea of levelling up your character and their stats as a mechanic, the closest one being one that uses items that level up ,but that affects just the item and not you, I believe the main reason for this is that it would require each level to be generic enough so that no matter what way you play that the level could be cleared, and that would mean you would have to limit your levels, and some would be too easy or too hard depending on how the level is designed, and stats would need to be balanced so that they all have a noticeable use.

I'll break down how all my stats work and how they affect the game world and the player.

Stat Breakdown

- Strength affects the height of your jump the more strength the more vertical you can jump.

- Speed affects how fast you can move and how far you can jump horizontally and wall-jump distance.

- Dexterity affects how many jumps you have.

- Skill increases your wall-jump distance.

- Body increases how much health you have.

Using these stats I created levels that have multiple ways to finish them, you can clear the whole game with only one jump, you can not level up your speed, the possibilities are abundant and what I wanted from that was to see if the idea of putting in a levelling up mechanic would make the game more enjoyable, and would it provide a enjoyable and coherent playable experience.

Literature Review

[Gameplay Design for Role-Playing Battle Systems](#):.

- This thesis from Christopher Dristig Stenström goes over the different genres of RPG and their battle systems, He goes over a wider variety than what I am covering for my game, he goes in depth into what makes the combat system unique to that genre and defines them.
- The parts that specifically were needed for me were the sub patterns where he explains some aspects of rpgs, such as passive abilities and experience boosting.

[Understanding Mario:An Evaluation of Design Metrics For Platformers](#)

- This Document from Adam Summerville, Julian R. H. Mariño, Sam Snodgrass, Santiago Ontañón and Levi H. S. Lelis, delves into the most influential and most well known platformer created to this day, Mario, it goes into understanding design metrics and evaluating a platformer
- Towards the end They discuss the idea of challenge and the optimal level design to make a challenge just right, this was useful for me when designing the concepts for my levels, that said in my designs I went a bit astray from the ideas being discussed in the end nonetheless it was useful for me to read and offered insights on platformers.
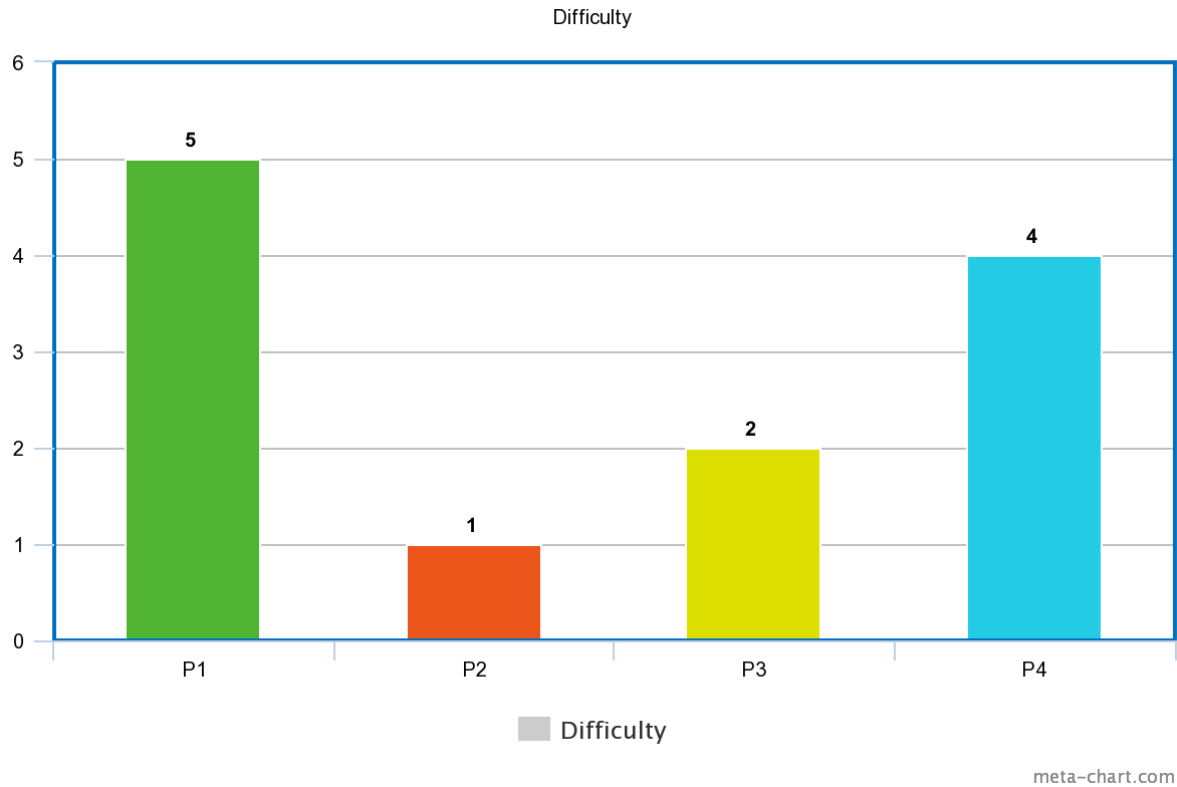
Evaluation and Discussion

Here we have a bar graph of the players Levels when they completed the game.
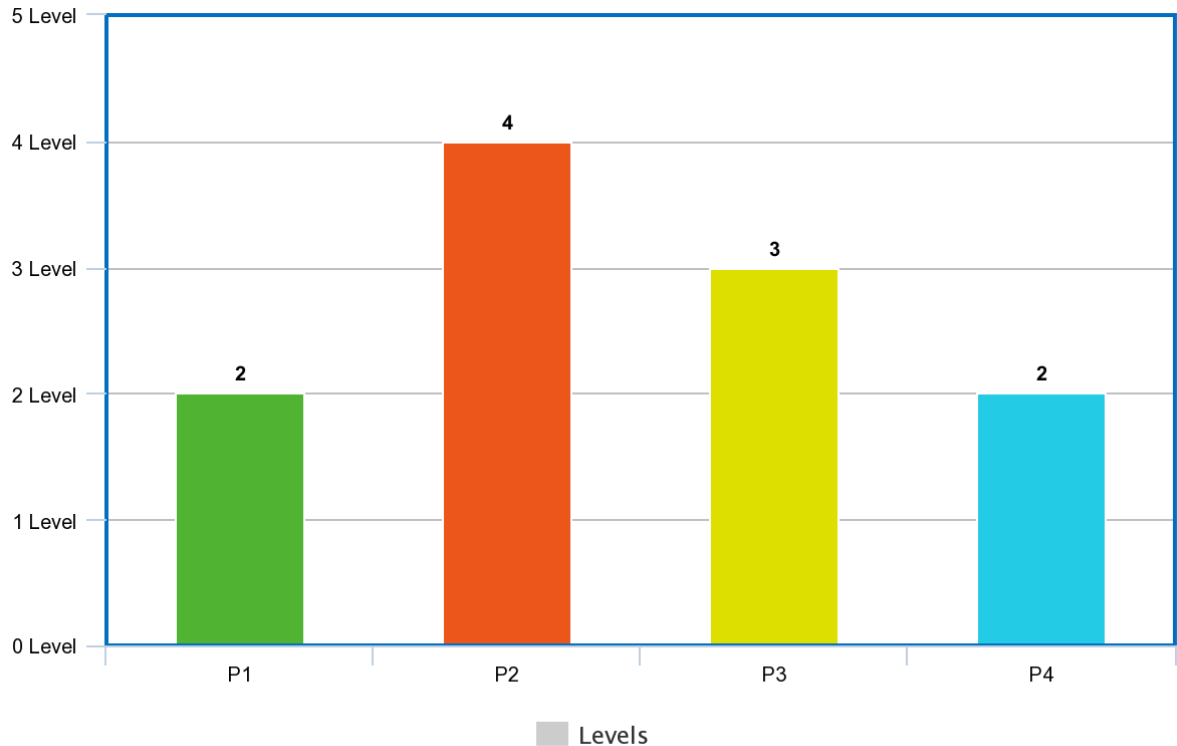

The average level of each Player when the playthrough was observed playing the game for the first time it was interesting to see how far they made it and what level they made it to.

Difficulty

meta-chart.com

Here we have another chart from the same group of players. It is noted that when the players levelled up more the game felt easier to them, the players that didn't level up as much found the experience to be more challenging and harsh.

From this little observation I can gather that Levelling did make an impact on the gameplay experience, and players rightly had an easier time when levelling up.

Following on from that , The playtesters Provided feedback based on which stat they found to be the most beneficial and which felt the least. Each player was given 3 votes to assign they could repeat votes as well, The most useful stat was a close one but Dexterity managed to be the one they went with.
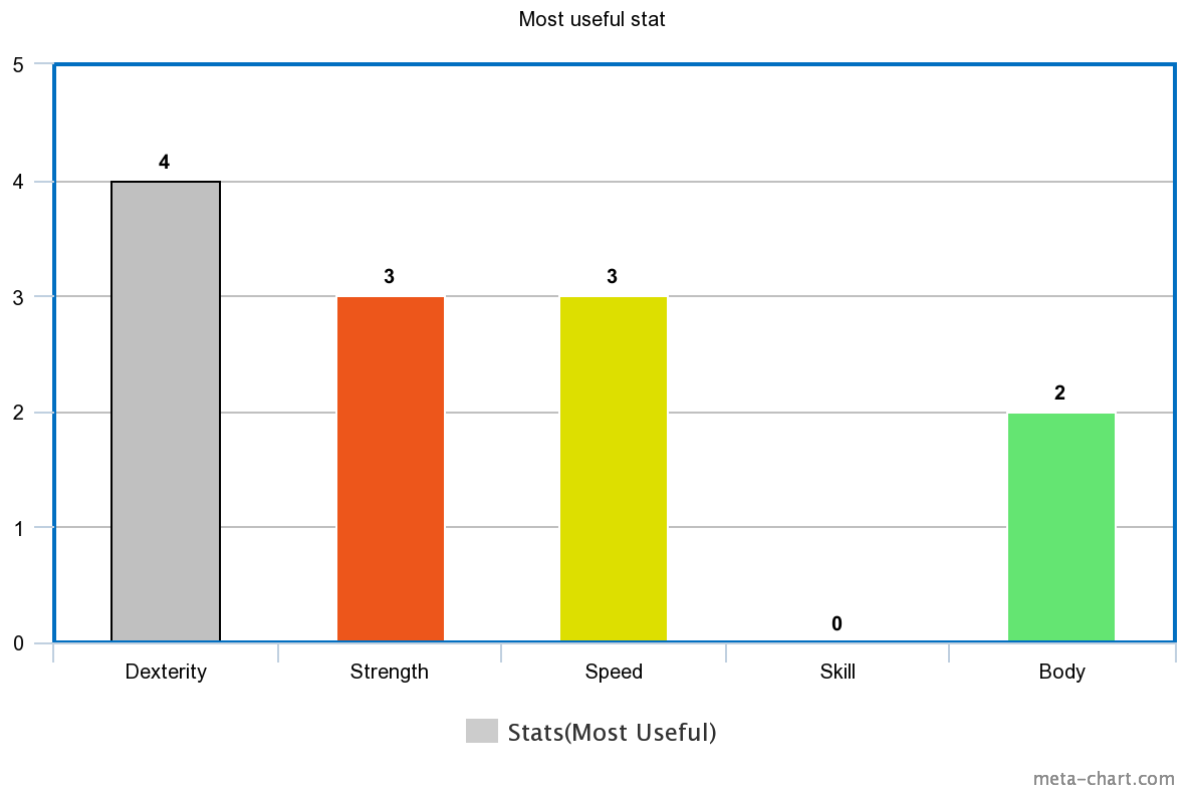
Most useful stat

As for the least useful stat well that one was less of a tough choice for them

Least useful stat

meta−chart.com
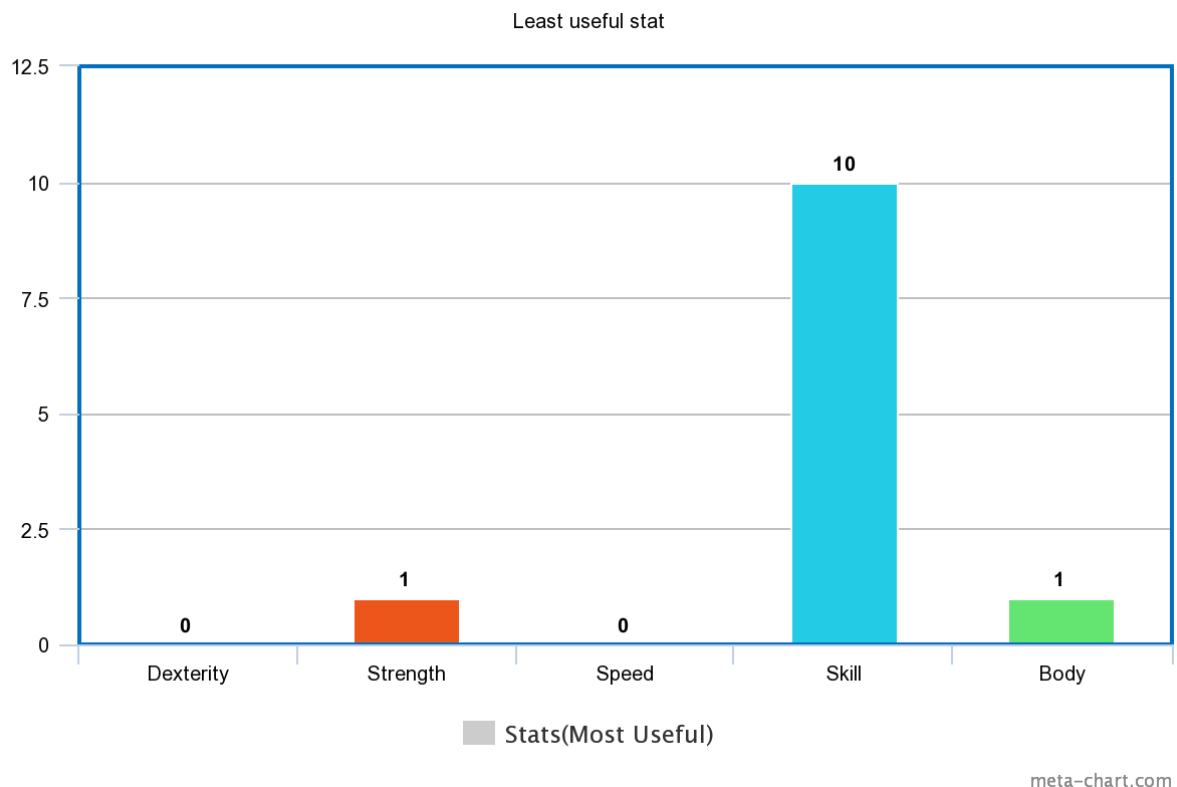
This was wholeheartedly due to the lack of balance for the stats most were useful skill was more of a niche stat, that needed others for it to look good, so it makes sense why they chose it, it affected the wall jump, a feature that was underused by the players to say the least.

This Feedback made me think on a couple of things, On paper the Game did what was intended ,but some of the stats were unbalanced thus actually making it more like an RPG than intended , as In nearly all RPGs there is always at least one build that is the most powerful either by design or by an oversight on the developers part in this case its the latter ,I hadn't realised how unbalanced stats were, Most players levelled speed once and put the rest into Dexterity.

So while I successfully made a platformer that used levelling up mechanics I had failed to balance them appropriately which led to a potentially Unenjoyable experience depending on the players playstyle.

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Project Milestones

July 4th 2022 Started the Project officially

July 5th 2022 Added a basic version of the stat system

July 7th 2022 Added a wall jump Mechanic

July 18th 2022 Implemented health system and stat

August 2nd 2022 Finished base version of all mechanics

August 11th 2022 Added a basic reset feature

August 16th 2022 Implemented Game over menu and level loading and stats carrying over on reset

August 17th 2022 created basic menu

August 18th – August 22nd Added sounds added pause menu added screen size changes added a pause menu, added the ability to change character colour and added music

August 23rd – August 24th Finished level designs and the game.

Major Technical Achievements

Levelling up system that affects the Platforming:

Each stat effected some part of the game, I worked on making sure that the player felt like they got something for levelling up, the strength adjusted the players jump height changing the games calculations for the physics of the player, Speed also affected this as it had the unintended side effect of effecting how far the player could get with their jump as in horizontal movement, Dexterity directly effected how long they could be in the air for with 4 Dexterity the player had three jumps. That they could use , 2 while in the air. Skill was by far the trickiest it went through many changes in the end it was decided that it would be used for wall jumps originally it was used as a control effect the more skill the less sliding around the player did it was scrapped as it impacted the feel negatively , finally Body allowed the player to take more hits, this way they could abuse the invincibility frames more than three times, instead every level in body meant the player could survive an extra hit.

These stats are tracked between the levels and reset when a new game is started; the difficult part was storing them when the player quit to the main menu and loaded back into the game. I saved their stats in a script from the start of the level they were on, and loaded them in when they restarted the level.

Project Review

All in all I am confident in my choices for my technology. Godot is one of the best tools out there for making a game. It's more friendly than Unity, which if I choose that I would definitely not have the same level of project completed.

In the end I completed a short game three levels that Features a level up mechanic, I did what I set out to do, if I had more time I would have incorporated some more aspects of the RPG genre like a equipment system and a skill tree, but for what I had originally set out to do , I feel I succeeded in proving that not only is the concept a good one that if its done right and done as a full proper game, That it would potentially be popular at least, that's how I feel after all the feedback, if the game was more fleshed out and balanced then it could definitely be popular and successful.

I stuck to my schedule, for the most part, due to some personal reasons. Some time was lost, but other than that I adhered to the schedule I set out for myself.

I definitely feel right now the game is more of a sandbox than a proper game. It's also not fully balanced and there is no save system for, say , closing the game and starting again. More enemy variety is one of the main features I'm missing, currently there are only two enemy types a saw and spikes. That said they work well for a challenge.

For anyone Trying a project like this, I would recommend focusing more on balancing the stats from the start, then focusing on level design, in my case the stats were constantly changing and being rebalanced.

Conclusions

To conclude, I Implemented a level up system into a platformer , I created a level up system from scratch based it around my platformer game, added stats that affect how the core game feels, and tried to have a noticeable impact on the game itself, I feel I created what I set out to do for the most part, I will say from the feedback given that It was enjoyable, it was challenging I used a game engine I have barely any experience in and managed to create a game based on a concept that I thought sounded like one that would work despite how strange it may seem.

Future Work

Expand on it, Try different methods of levelling up, progression based levelling as in when you do something enough times it levels up that stat, jump enough and your strength increases ,move enough and your speed increases etc.

Also add other RPG elements like an equipment system that increases your stat based off what you have equipped, add more stat based puzzles like stuff you can only do if you have a certain amount of stats.

Add Passive abilities with multiple different characters for example character 1 has an extra jump , while character 2 is faster.

Potentially add a perk system that way instead of just levelling stats the player could get a perk that also changes the games an example is say "Tank: The player loses a point in speed but gains 2 health."

References

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