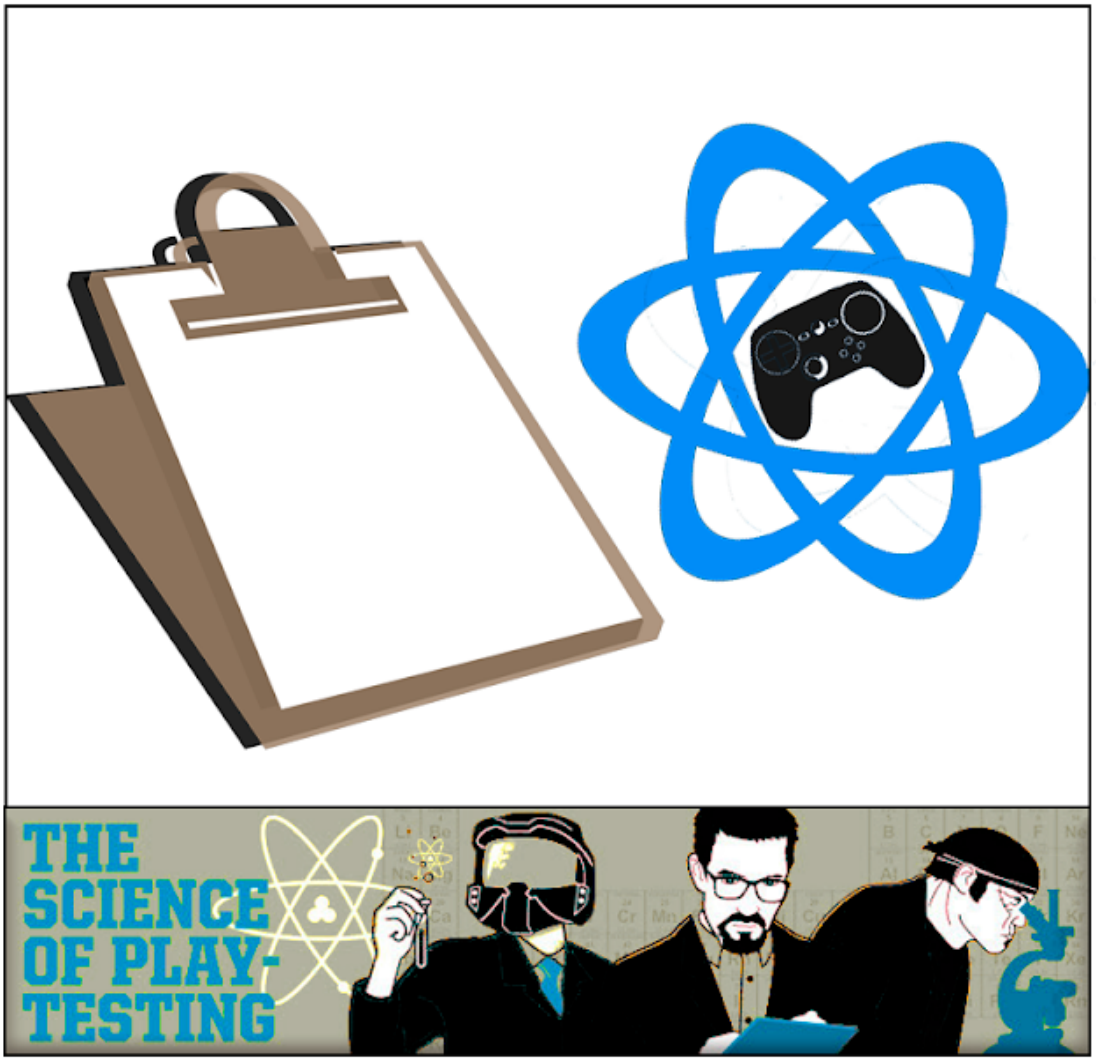
Assignment 2

Functional prototype creation + playtesting



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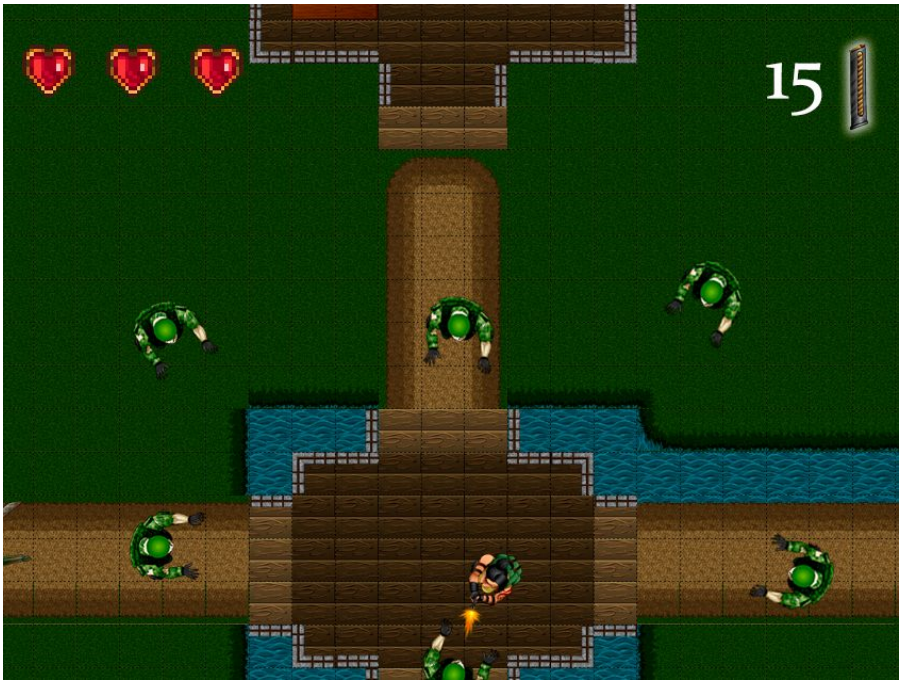
Introduction

The project will contain a self-created prototype of a video game, which will go through a playtesting. The prototype makes an XML in which it saves some determined variables which will be used for the analysis of the playtesting outcome, these ones will help us to observe the emotional reaction and stimulus which testers feel while trying the different mechanics of the game, and therefore identify if there is an element which affects negatively to the game experience and also to identify elements which are working properly and may have a huge potential to improve the experience.

Gameplay

In this prototype, the player is placed in a small area where he/she will have to survive to hordes of zombies. In order to do so, the player will be able to use a gun, Also there will be supplies which will help the player to survive longer, such as ammo and health packs. The game is an action survival shooter, currently for a single player.



Design and variables insertion strategy reasons, purpose

Design and variables insertion strategy reasons

In order to test and improve the different mechanics of the game, we implemented the next variables, which will allow us to measure how good the player experience is.

Variable 1:

We want to measure player Motivation/ Frustration according to some stimulus. When an object is spawned (ammunition, med-kit, money) the users will hear an auditory stimulus that will get their attention and tell them something happened. When they start looking around the map they will fastly notice an object in the

ground, because we used a highly intense glow to highlight objects and get the player visual attention. Both of these stimuli may motivate the player. Hearing the stimuli will mean that some helpful item just spawned somewhere on the map, and the visual stimuli will make it easier for the player to find the article.

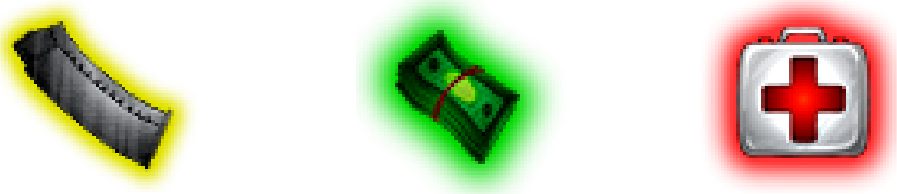
Otherwise, if no stimulus is used, the user won't know if an object appeared, and facing the horde without ammo and almost no lives will likely frustrate him.

The variable we will use is a timer, to measure the amount of time it takes to go from an object spawn to the object collection.

We want to detect if the items that enemies drop or that are around the map are visible enough and easy to detect by the player.

- The first sprites are just a simple static image which appears on the map.

- For the other sprites, we added an animation displaying a glow which will highlight the item, applying an Intensity and strength stimulus.



What are we measuring:

When an object is spawned

What are we Testing:

Playability - Emotional Reactions, Motivation/Frustration

Measured Through:

Perception, Attention -- Alertness

Variable 2 :

We want to measure Players immersion. Our approach is to have a variable ammunition apparition rate. If the player has to keep in mind that ammo is scarce, they will put more cognitive resources into the game, knowing they have to make every bullet count, and so, increasing accuracy.

So our variable will be accuracy, depending on how many shots the player misses, we will know whether the player is immersed or not (high cognitive load). For this, we will put a time limit

What we measure:

The time between ammo apparitions (every 3 rounds, or anytime)

What are we Testing:

Motivation, Immersion, Attention - Orientation

Measured Through:

Memory, Attention -> Orientation

When having a high amount of bullets as in the first picture players do not feel like a challenge is presented, otherwise, by keeping ammo scarce but sufficient to restrain the zombie horde we intend to put the player in the flow channel and immersed in the game, keeping in mind the ammo available.

Variable 3, Variable 4 & Variable 5:

We want to measure Flow, our approach is to have variables that relate ammo wasted, enemies killed and time spent. If the player uses a low amount of ammo and kills all enemies in a short amount of time then he is not in the flow channel. Boredom will prevail, showing a bad balance between skill and challenge.

If the challenge is too high compared to the player's skill, this will lead to player anxiety, thus likely shortening the time played, since the player will be killed way faster.
From this, you will also get Player frustration.

So we will use time playing and the relation between ammo wasted and enemies killed to measure flow. In an ideal situation the player will use more than the minimum bullets to kill most enemies, facing some challenge, but not leading to anxiety, and also playing for some time before dying or deciding to leave the game.

What we measure:
Enemies appearance, from the same corners, or randomly

What are we Testing:
Playability->emotional reactions, Playability-> Flow, Motivation

Measured Through:
Learning, Memory, Attention -> Orientation

The player dies with zero kills, at 9,24s past starting time, which means that there is a great unbalance between challenge and skill, the player will get frustrated and the game unplayable.

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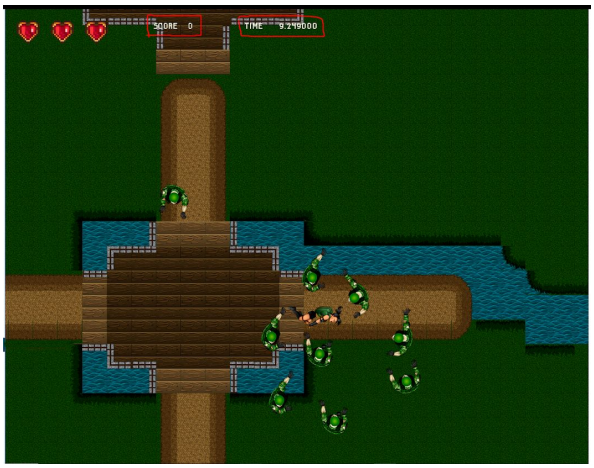

Pre-Play script

Single-Answer

How often do you play?:

( ) 1-3 days/week () 4-7 days/week ( ) Few days a month ( ) Never

How long are your gaming sessions?

( ) Less than 10 min () 10 -30 min ( ) 1 to 2 hours ( ) more than 3 hours

Do you prefer:

()Single-player games ( ) Multiplayer games

How much do you spend in a single video game? (euros):

( ) 10 to 30 ( ) More than 30 () Nothing

Are you aware of news in the video game industry?

( ) Yes () No

Multiple-Answer

Last Game Genre played: Multiple Answers

( )puzzle ()action ( )simulator ( )adventure ( )role ( )sports

In which platform do you actually play?:

() Mobile/Tablet () PC () Consoles ( ) Portable console

Have you played any of these games?:

() Call of Duty: Black Ops - Dead Ops Arcade ()Gauntlet () Helldivers ( )Dead Nation
( ) ALIENATION™

Where do you find your video games?:

() Playstation store ( )Xbox store ( )Steam ( )Physical store ( )others

Play

During this phase, we leave the users alone and we take notes

Post-Play script

1. *How did you feel while playing the game?*
2. *What did you think about the game?*
3. *Did you find it easy to spot the Ammo, Health, and money?*
4. *Did you understand the objective of the game? Which is it?*
5. *Was it easy to understand the game's controls?*
6. *What are your thoughts about the difficulty of the game?*
7. *Is there anything confusing?*
8. *Is there anything that you dislike? or any improvement you suggest?*
9. *Which feature of the game would you improve and why?*

Wrap-up:

As part of the team, I would like to thank you all for coming to the playtesting session and provide us with important feedback.
If you would like to continue as a member of the playtesting community, please feel free to fill in the data information sheet for us to keep on contact in future cases.

Name:
Birthdate:
Age:
Email:
Phone number:

Reports

In order to obtain well-structured data from the playtesting session, we have made an automated system that saves in an XML the variables in game quit or game lose, for every test.

The file is named ControlVars.xml and is overwritten when another report is produced, so every time a tester finished we saved this XML in another folder and categorized it accordingly to use it later.

We import the XML files to excel to manage the whole information gathered from all testers, so we can use the data efficiently in the following section, Data analysis.

The excel file is in a separate zip, with all the XML reports alongside it, properly categorized. We had 10 playtesters, so in the excel every board corresponds to one player until the tenth (glow/sound part finished) and then starts from player 1 again in the accuracy part.

Data Analysis

Variable 1: Time between object spawn and collection

The first 5 playtesters played with glows on the objects and sounds every time an object spawned, having an average time between spawn of object and collection of 7.36 seconds.

The other 5 playtesters played without glows nor sound and got an average time between object spawn and collection of 14,78 seconds.

The difference is very noticeable, so we get the message that glow/sound was positive reinforcement, and should be kept and improved. Bear in mind that the different players are not all as good in shooters like this and didn't play the same amount of time (some died faster) so the huge gap between both times may not be as huge. As a result of the variables shown, it is clear that having visual and auditory stimuli helps the player to gather and notice the items faster.

Variable 2: Accuracy

We take the average accuracy from the plenty of ammo/ scarce ammo tests.

In the case A, with plenty of ammo, we have an average of 48% accuracy, a pretty bad rate of enemies killed versus ammo used.

In case B, with scarce ammo, we have an average of 64,4% accuracy, a decent accuracy.

So we can see that there is a difference between giving the players a lot of ammo and limiting it to very few bullets. Case B shows a greater average with almost a 20% improvement. It's clear that players with less ammunition use more cognitive resources being more conscious of every move and click and more immersed in the game, having a greater experience.

Variable 3, 4 and 5: General time, enemies killed, ammo used

We used the previous tests to measure these variables too, in group B the enemies appeared from the same corner every time and in group A from a random corner.

When enemies came from all directions players struggled more than when spawn was fixed, this led to missing more shots in the first case, with a greater influence of challenge over skill, opposed to group B's situation, where accuracy was higher and challenge/skill were in greater balance, keeping the player in the flow channel.

Group A : 33 enemies killed (average), 73.2 ammo used (average), 106,8 seconds played (average)
Group B : 37 enemies killed (average), 56,8 ammo used (average), 107,6 seconds played (average)

Conclusions

In general, the introduction of variables into the code was a useful tool to gather data from the users, and we got some good results from them, showing which aspects of the game were properly designed, and also where there is still room for improvement. The game is a prototype, so there are not a lot of features, but the ones that work properly and were included in the final version worked out quite well, though it is difficult to get good reviews of a very simple game.

From the first variable, we got a very positive response to our efforts, adding a glow/sound on object spawn really was a good idea and helped players enjoy the game, knowing when items were introduced, while not having them led to some frustration, dying faster, and not understanding how items spawn worked.

From the second variable, we got a nice result too, showing the gap between accuracies from the two different groups, those who got less ammo were more immersed in the game and managed it more efficiently than those who got plenty of it.

From the last set of variables, we obtained relevant results too, though they can be seen as inconclusive depending on your perspective. We concluded that group B, with fixed enemy spawn location, was more immersed and in the flow channel, but for some players having a high difficulty as group A, even if it leads to missing more shots, also means more fun. Flow is not trivial enough to divide it into different parts, and so we must take into account all the different player profiles, that might change how the flow channel is for every type of player profile.

Overall, we perceive this tool, control variable insertion, as a very useful one to measure different player experience determinants. It is even better when you can actually extract all kind of data from the game, in an automatic way, and send in via network to a server you manage, obtaining a ton of data (the so-called big data) that can be super useful to improve the game in multiple dimensions. Data analytics in the video games industry, such a powerful tool.