Pre-update Research Findings

Participant Analysis

The following data was asked in confidentiality and as such the individual responses have been omitted from the survey findings, in favour of collectively categorising participants to protect anonymity.

10 participants were gathered for user research as part of these findings. *All statistics are in reference to the response of these 10 participants.* From these participants:

- **30%** are in the age range **35 – 40**
- **30%** are in the age range **22 – 34**
- **40%** are in the age range **10 – 21**

Those participants of legal working age have all had some form of computer training as part of their professional career. Those unemployed make use of computers frequently in their personal time.

Survey Findings

Following analysis of the survey results, we can see:

Regarding experience:

- 100% of participants consider themselves above a novice level of expertise.
    - 50% (5/10) consider themselves expertly proficient using computers.
- 80% say they *"play 2D computer games"* on some form of computer device.
- 80% consider the state of the game they played *"enjoyable"*.
- When asked how likely they are to recommend the game to others on a 0-10 scale 70% said 5 or higher (10 being *extremely likely)*.
- When asked how likely they are to play this game again on a 0-10 scale 60% said 5 or higher (10 being *extremely likely)*.

Regarding feature enhancement and future update responses included:

Liked features:

- Collectible variety
- Enemy variety
- Retro aesthetic
- "Cute" graphics

Disliked features:

- Poor animation
- Poor graphics
- Disregard for Level Editor
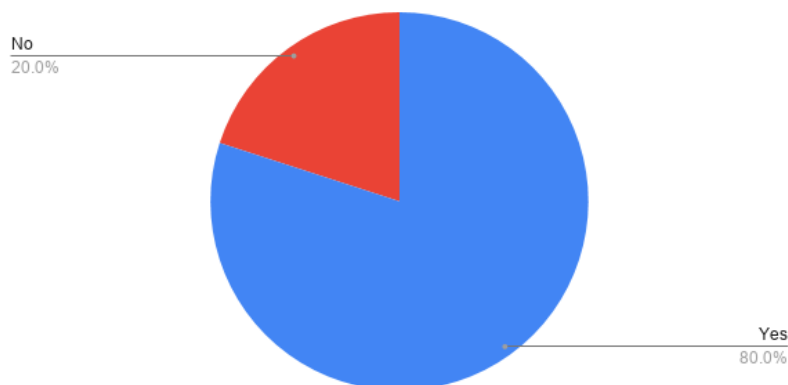
Suggested addition/deletion of features:

- Character customization
- Power-ups
- Puzzles
- Rewards system
- Remove Level Editor
- Online leaderboard

- Android/iOS app
- Improved graphics
- Smooth animation
- Minigame
- New characters/collectibles

Below are visual representations of the measurable components of the data:
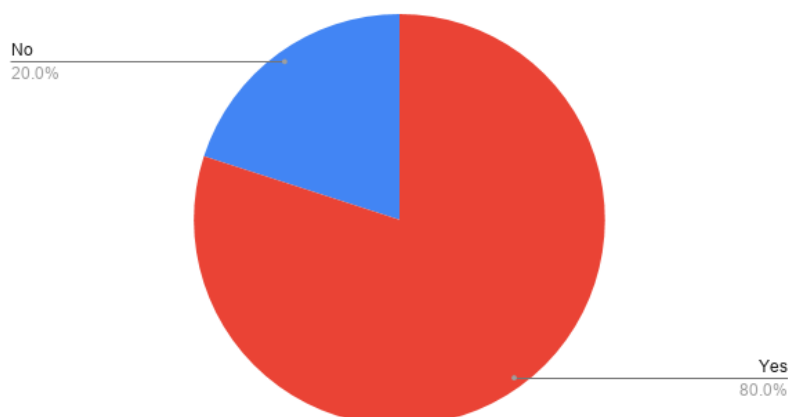
Which of the following best describes your proficiency using computers (tablets, smartphones, laptops, desktops, etc.):
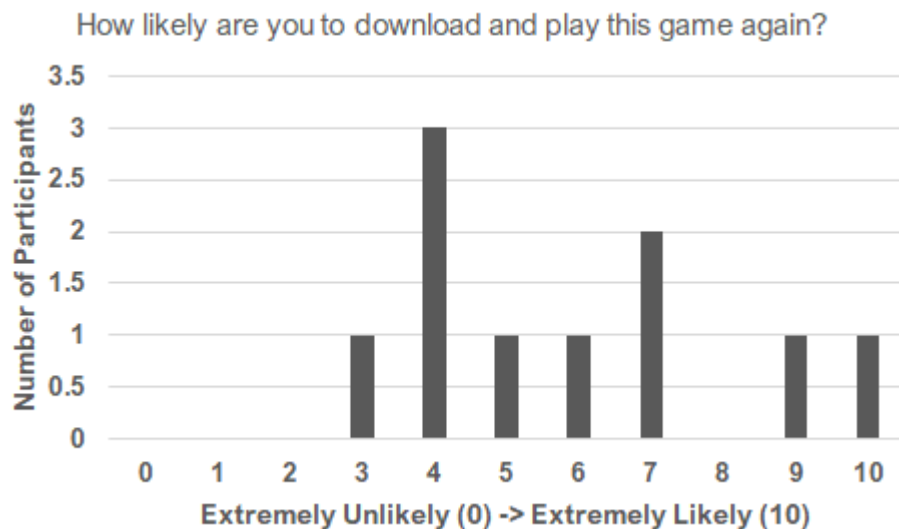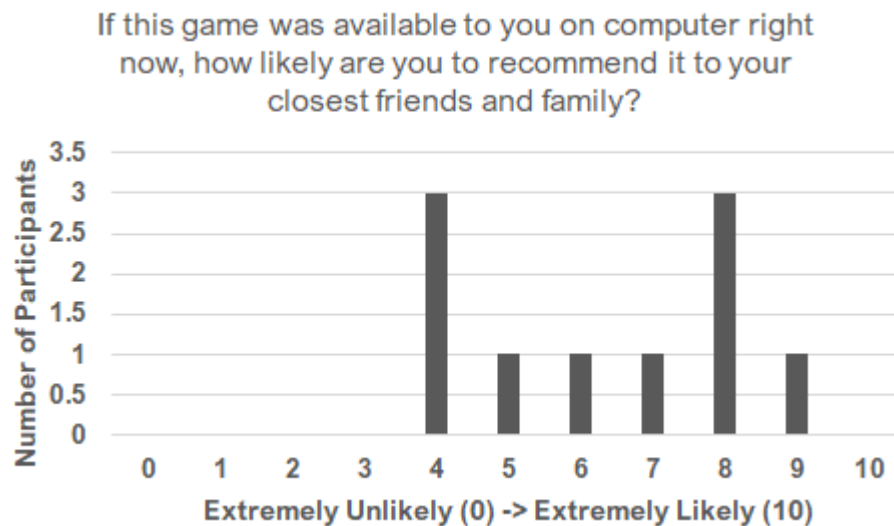
Expert (highly
50.0%

Intermediate (can make
50.0%
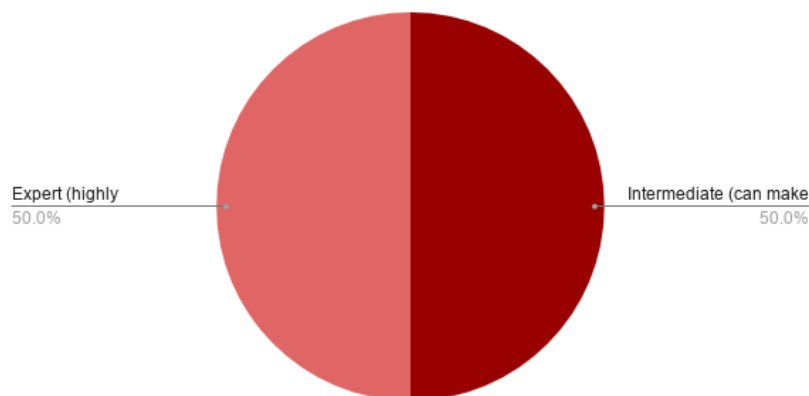
Do you play 2D computer games (console, desktop, laptop, smartphone)?

No
20.0%

Yes
80.0%

Would you consider the game played today enjoyable?

No
20.0%

Yes
80.0%

If this game was available to you on computer right now, how likely are you to recommend it to your closest friends and family?

How likely are you to download and play this game again?

There seemed to be no correlation between a participants age and the responses on the survey. In my opinion this is a result of 2 factors. Firstly, the game is simple in design and gameplay and so there is no major learning curve for the capable participants. Secondly, the theme and demographic for the game is not targeted specifically at a single age range and consequently there is no bias in the results. This is to say, if we had designed the game with 10-21 year olds in mind we may have included more social connectivity or multiple measures of achievement beyond just level completion time. This speaks to suggestions by this age range for an online leaderboard and competitive additions to the game, something understandable given the generally accepted difference in norms between these age groups.

With this said, there was no measurable correlation between a participants age and their responses regarding enjoyability, user recommendation or any other quantitative-type question(s) asked in the survey.

Interview Findings

Shown below are the transcripts for participants whom cared to interview following completion of the feedback survey. Only 3/10 participants engaged in the interview, and whilst this could be seen as 7/10 participants not caring for the game/research it is more than likely they could not participate given global situations at the time of the study.

Participant Transcript

Date: 05/04/2020

Participant Number: 007

Interviewer: Rowan Aldean (Researcher)

Clean Verbatim Pre-Update Interview Transcript

Interviewer: So how did you find it? As a whole experience?

Participant: Honestly, given we've done this all through [video conferencing] things went pretty good. I'm chilling eating, you haven't rushed me, and the whole process was decent. The thing with task manager and closing Java was annoying though. You got to fix that man.

Interviewer: Fair points. Thanks for taking part with everything. Do you want to comment on any current or future features, or really anything in your time playing the game?

Participant: I liked the varying collectibles and different enemy move patterns. It meant I had to naturally figure out how they were moving to beat the levels. I thought the graphics where cute too. I don't understand why a user would want to create their own level though. That seems kind of silly to me. The animations also weren't great, but it wasn't super hurting to my experience. For features I think you should add something that gives to the players attributes like an energy drink or something to speed up/slow down the player or enemies. Some sort of powerup or lives so that they don't always die to an enemy.

Interviewers Notes:

- Seemingly warm to the idea of future enhancements and generally a smooth experience.
- Seemed unhappy with the level editor and clearly disliked the idea in both furling their eyebrows and upper body language.
- Consider having some enemy that doesn't kill.

Conclusion:

The participant was generally happy with the existing game and feature suggestion revolved mainly around adding more cell and collectable types. These would be simple implementations but perhaps are not rich enough for substantial marks in my assessment. I think the idea of enemies not always killing the player is workable and wise.

Participant Transcript
Date: 22/03/2020
Participant Number: 002
Interviewer: Rowan Aldean (Researcher)

Clean Verbatim Pre-Update Interview Transcript

Interviewer: So how was today? Did you enjoy your experience?

Participant: Really fun and easy. I like that this wasn't some super sweaty game and that you didn't ask me to suggest technical things. The game was cool, and I enjoyed the fact I could beat your times on the leaderboard [laughs]. I'm always mad competitive and games like this are both retro and have competition to them, so hitting the mark there.

Interviewer: How would you go about improving things even more, or making it more suited to yourself?

Participant: Well if it's about me then I love competing, maybe have something that is an obstacle as opposed to just collecting and moving around. If there was some puzzle or something that set players apart. For example, when I play [first person shooter] on [console] me having better aim than others can make me perform better. Or me being able to solve problems in other games can mean I finish quicker – you know like those people that do speed runs of stuff online?

Interviewer: Yeah, I hear you. Them speed runs are crazy; it'd be cool to see someone like you try that on Kitchen Catastrophe in future hey [rhetorical]? Ok so knowing what you'd do to make it better, is there any further comments you want to make on current or future features?

Participant: Man, the game felt so dry without audio. It made me think how literally everything we do has audio and I'm more empathetic with the deaf, like I listen to footsteps in games, and even in videos theirs jokes that are comedic cause of audio. Like fart jokes.

Interviewer: [restricted laughing] … great, thank you for your time.

Interviewers Notes:
- At first was super eager to interview and happy to enthusiastically answer questions.
- Enjoys the competitive aspect of the game and the retro aesthetic.
- Noticeably encouraging about the future of the game
- Needs competitive edge
- Relaxed and less formal than other participants

Conclusion:
The participant here suggested a puzzle aspect, this is interesting, and I agree it can help provide more competition to a user's time. Right now, all our enemies simply kill, they aren't really obstacles that hinder level completion.

Participant Transcript
Date: 22/03/2020
Participant Number: 001
Interviewer: Rowan Aldean (Researcher)

Clean Verbatim Pre-Update Interview Transcript

Interviewer: So how was today? Did you enjoy your experience?

Participant: Quite interesting to see what progress you and your team have made, and also cool to play another program you've worked on. I think the last hour was super quick, easy, and you haven't made it feel very research-like, which I prefer [chuckles].

Interviewer: [chuckles] Ok awesome, now I know you mentioned a lack of instructions or audio whilst playing, anything you want to discuss now?

Participant: [exhales] Yea sure, I mentioned this in my feedback but having thought about it, the controls and stuff are quite intuitive – even for me and my skills! I do think maybe the lack of any sound when you showed me the game threw me off, it was just super awkward and even though you explained everything, the whole vibe just was a bit dull. I think instructions could help for really really beginners but for myself and most people who'll play this they aren't too needed. Audio on the other hand should [emphasises] definitely be added.

Interviewer: Ok, noted. I agree and I'm glad you're comfortable sharing your honest thoughts. Having seen and played the game, what would you do with it if I said *"here's all the resources you can have, just keep the theme and style the same"* and tasked you with enhancing this game?

Participant: I really wish you'd add smoother mechanics, I don't know if you're limited in how you're making this but if it was smoother and the view or camera or whatever was smoother it'd be much better. I'd also hire a graphic designer to re-do the graphics to a high standard and I'd add more stuff for me to do [laughs] like small secrets and minigames and new rewards systems. Just standard 2020 stuff now-a-days.

Interviewer: Right, that's some pretty slick ideas. Finally, is there anything to do with current features or future features that you want to comment on?

Participant: Well a major annoying thing when you sent me the .jar thing was when I closed it and tried to reopen it, it wouldn't work. I know you talked me through closing my Java thing and reopening but if you weren't on call that would annoy me. Fix that. Also please please add audio, right now the game feels so dry. Oh, and add some more stuff at least, because I feel like after a few times making custom levels and playing them, everything just got super repetitive.

Interviewers Notes:
- The participant seems very relaxed.
- Audio is essential. Stressed this.
- Fix the window close bug.
- Seems uninspired by the game – just being friendly.
- Can sense they need a rewards system or feeling of accomplishment or feature to upgrade the game.

Conclusion:
I will have to investigate adding something which keeps the game fresh. Generally, users enjoy the feeling of racing against time which we have, but perhaps a game or rewards system i.e. badges can enhance this. The participant seemed very nonchalant, and this is something we should change. Get them eager to play and speak about the game and its features.

Rowan Aldean (2nd Year Undergraduate // Department of Computer Science at Swansea University)

Summary

Following the survey results I gathered some suggestions. Fortunately, the detailed responses and explanations in the few follow-up interviews gave me clarity and the ability to combine feature requests and suggestions into a more cohesive and higher [1]richness feature.

I will fix the window close bug. I will add audio wherever applicable in a natural manner and attempt to not annoy the user. I will enhance the current tokens inventory to monitor all collected items and be a general inventory.

I will implement a new character which follows the player – it will be a Waiter. Upon collision the Waiter will pester the Chef (player) to push out an order, despite the clear catastrophe! This will involve launching a minigame that continues the level timer and asks the player to assemble a burger given a randomly generated assembly order. Upon completion the player may continue however given the Waiter is employed in the kitchen, he will reappear somewhere and continue to chase the Chef with orders. This idea means the player won't die, the time will continue, and a level of skill will be needed to react and assemble as quickly as possible. Thereby catering to many of my users' suggestions in 1 feature.

Given that the inspiration behind the original game was the classic BurgerTime arcade game, it is fitting that the minigame is also BurgerTime inspired.

I will consider adding instructions/options menu for these however because the only real setting is audio adjustment this may be excessive and perhaps more UI clutter than enjoyable feature.

Definite changes:
- Enhance inventory
- New character design and implementation
- Minigame implementation
- Audio addition
- Bug fixes (namely the window closing)

Possible changes:
- Menu window
- Updated graphics
- Rewards system/character store/customization

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[1]*richness is the term used by my assessor(s) for a feature's complexity and difficulty. It is the criteria by which I will be assessed.*

Post-update Research Findings

As planned, the same participants were asked to once again perform a survey and optional interview following the updates made based on their initial feedback. The data continues to apply to **10 participants** as I had no participants leave the research process.

Survey Findings

Following analysis of the survey results, we can see:

Regarding the impact of this update:

- 100% consider the state of the game they played *"enjoyable"*.
- 80% deemed the updated game *"more enjoyable than previously"*.
- When asked **how likely they are to recommend the game to others** on a 0-10 scale 80% said 8 or higher (10 being *extremely likely)*.
- When asked **how likely they are to play this game again** on a 0-10 scale 100% said 8 or higher (10 being *extremely likely)*.
- When asked if they're **any more likely to partake in 2D style dungeon-crawlers in future as a result of being involved in this research** on a 0-10 scale, 60% said 5 or higher (10 being *far more likely)*.

The above figures suggest that the update was successful in making a more enjoyable game. We also can see that as a result of partaking in this research, participants are at least slightly more likely to get involved with games of a similar nature in future. This means future developers can take on board suggestions outlined in the research findings and if needed replicate the research methods – leading to better and more enjoyable games. If the figures are to be taken literally, then the more users participate in similar research, the larger the potential market becomes; thereby feeding constant growth – in a theoretical sense.

In comparison to the pre-update findings, we have seen a 20% increase in the number of participants who consider this game enjoyable. However given that 20% did not consider this game any more enjoyable than before, this suggests that 20% of the participants were originally content with the game's enjoyability. Nonetheless the **overall number of those who consider it enjoyable did increase**.

When looking at the number whom would recommend the game to others, we have seen a significant increase from 70% saying only 5 or higher, to 80% saying 8 or higher. This indicates that **overall more participants are more likely to recommend the game** – it is important to realise that this data doesn't allow us to comment on recommendations alone, but rather the **likelihood** of our sample size recommending it to others.

Furthermore, the participants likelihood of playing this game again has risen to **100% of participants stating they're extremely likely to play again** from only 60% being slightly more likely prior. This tells us that **every participant has considerably increased their likelihood of playing the game following the update**.

It's important to note the data gathered is specific to this genre of game and to the theme, implementation, features and graphics of Kitchen Catastrophe.

The sample size for this research is also small and thus it is too early to make any substantial claims on whether our method of researching, feedback collection and updating is the greatest factor in the results seen. The following information will add slightly more clarity and allow us to draw a better conclusion.

Regarding the effect of specific features:

"What feature(s) specifically (if any) made this game more enjoyable":

- The sound effects and theme music and its nostalgia.
- The minigame and inventory, useful in editing my own level and playing it.
- The food enemies and the inventory
- etc. (similar responses)

Any **ONE** feature that made the game more enjoyable overall:

- 100% said the introduction of the new enemy **(not the minigame itself).**

  This suggests that perhaps the most desirable feature in updating a game (apparently of any kind), is content. Whilst the users enjoyed the minigame and other enhancements, it was the introduction of new content itself that was deemed the largest contributor in their opinion. Again we can take this with a grain of salt given the sample size of 10, however the idea that challenge and change are substantial to a user's enjoyment of a game is relatively fair and sound (Huang, 2019). Whilst the minigame was itself enjoyable, having it be launched via a "Minigame" button on the main menu would not be considerably more enjoyable for the user. They seemingly seek new game content and refinements of the game over simple additions which don't impact the play alone.

Below are visual representations of the measurable components of the data:
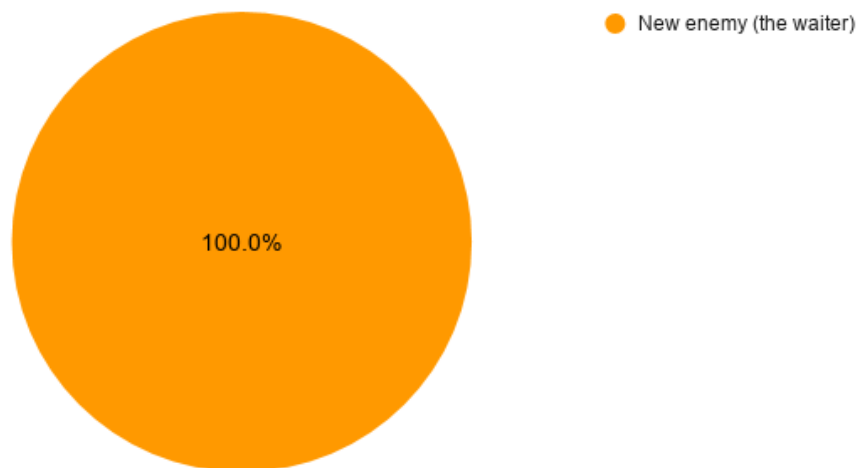
Would you consider the game played/demonstrated today enjoyable?
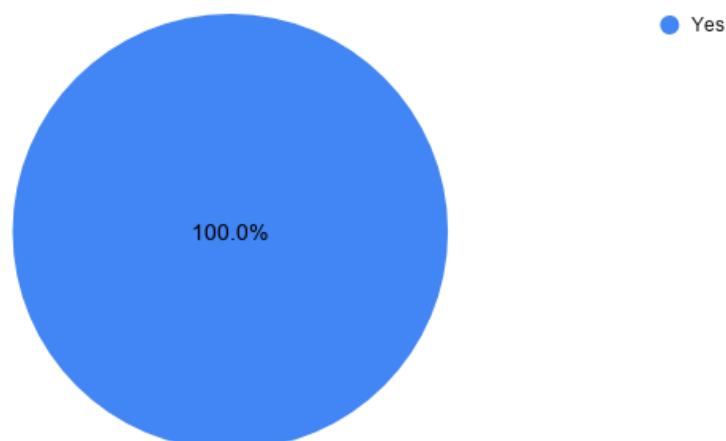
Would you consider the game played today more enjoyable than the game experienced previously?

No
20.0%

Yes
80.0%
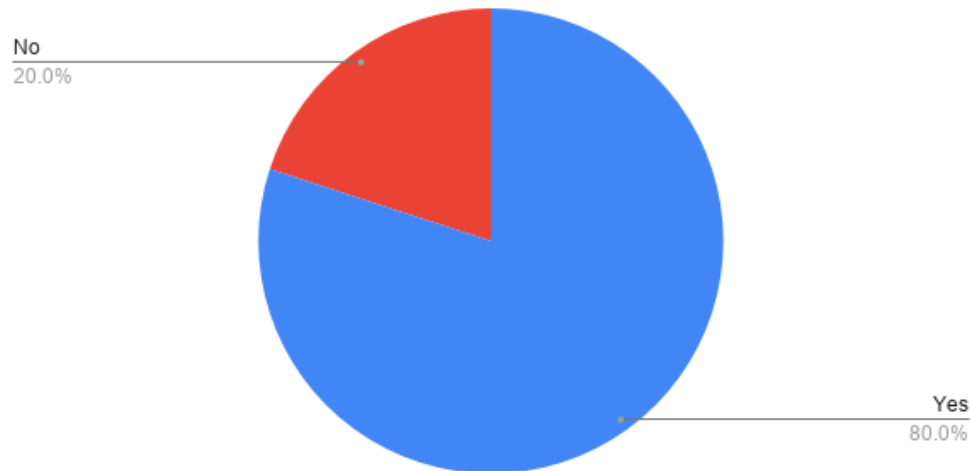
Is there any ONE feature alone that you think made this game more enjoyable overall?

● New enemy (the waiter)

100.0%

If this game was available to you on computer right now, how likely are you to recommend it to your closest friends and family?

Number of Participants (y-axis: 0 to 6)

Extremely Unlikely (0) -> Extremely Likely (10) (x-axis: 0 to 10)

How likely are you to download and play this game again?

Number of Participants (y-axis: 0 to 7)

x-axis: 0 1 2 3 4 5 6 7 8 9 10

Extremely Unlikely (0) -> Extremely Likely (10)

After partaking in this user research, are you any more likely to play similar 2D style games (dungeon-crawlers)?

Number of Participants (y-axis: 0 to 4.5)

x-axis: 0 1 2 3 4 5 6 7 8 9 10

No more likely (0) -> Far more likely (10)
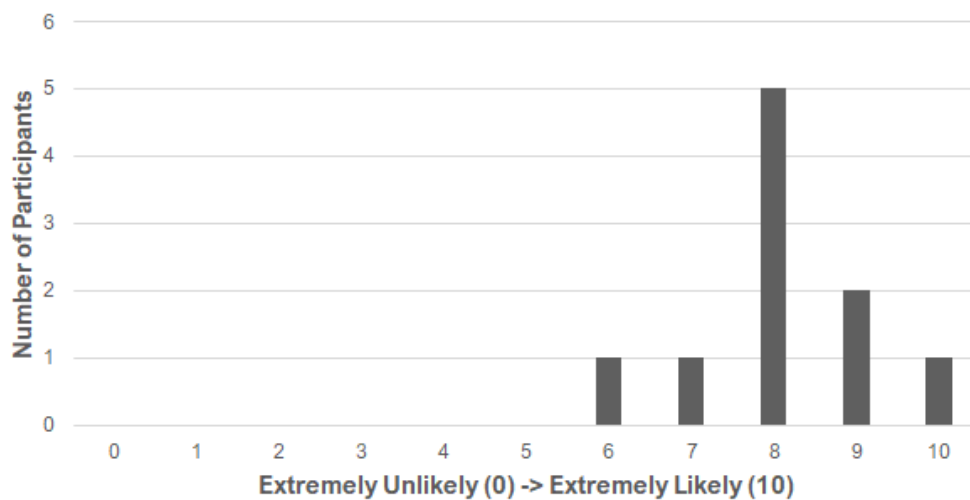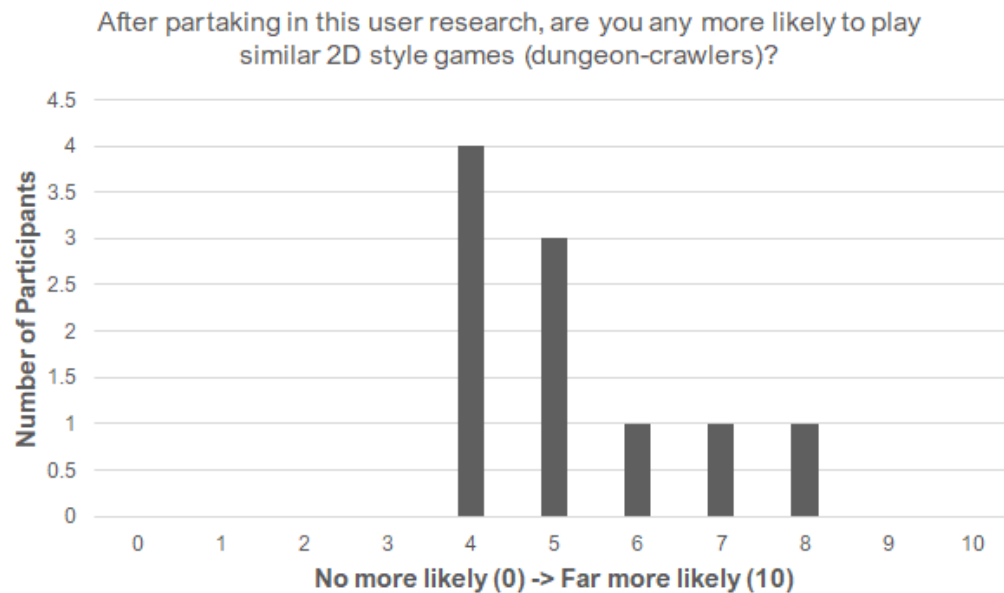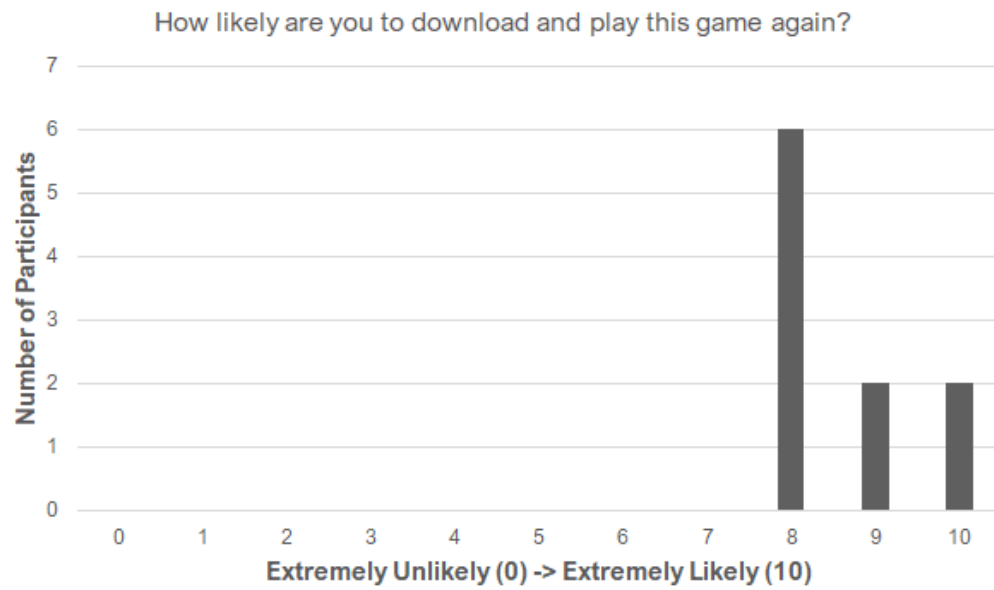
Interview Findings

Shown below are the transcripts for participants whom cared to interview following completion of the post-update feedback survey. This time 4/10 participants engaged in the interview, perhaps an indication that the update made a participant more interested. However, given the global situation at the time of interview it could well have been because their availability was greater than before during the pre-update phase. As before, it is likely participants who did not perform the interview, did so as a result of personal matters as opposed to being uncomfortable with audio recording or participating.

Participant Transcript

Date: 01/05/2020

Participant Number: 002

Interviewer: Rowan Aldean (Researcher)

Clean Verbatim Post-Update Interview Transcript

Interviewer: First and foremost, how did you find the updated game? Any comments?

Participant: I'm glad you kept the theme the same. I'm also mad happy that you made the minigame. That is exactly what I meant by some puzzle or challenge that is skill-based. My reaction time makes a difference and how fast I solve it means I can get on with things quicker. However, I can never predict where the waiter will move to and so sometimes I get caught loads and it really [expletive] me off.

Interviewer: It's all a part of the game [smiles]. The waiter is actually randomly placed so don't get too worked up about it [jokingly remarking at expletive]. Todays interview is short, so last question – do you think there is some 1 feature missing that could have made things considerably more enjoyable?

Participant: I mean the retro aesthetic is cool, like I said before, but if you redesigned the graphics and made the guy walk or step when he moves it'd have been a more awesome change. That said, I think what you did is more enjoyable than simple reworks of stuff, and I like that you added audio. Maybe try having the audio get louder/quieter as enemies get closer? It'll give a more trapped like feeling I guess?

Interviewers Notes:
- Noticeably impressed and happy with the update.
- Keen to understand how the game works, visible by how their eyes and voice changed when asking about the waiter's movement pattern.
- Clear competitive mindset.

Conclusion:

The participant is very happy with the changes and was keen to interview once again. There was very little critique and so I did not ask many questions. The participant seems to be a very positive person and so whilst their feedback on the update was great, they were also one of the more relaxed in the pre-update interviews. Indicating that perhaps they simply enjoy games of this nature.

Participant Transcript

Date: 01/05/2020

Participant Number: 001

Interviewer: Rowan Aldean (Researcher)

Clean Verbatim Post-Update Interview Transcript

Interviewer: So what's your thoughts on the update?

Participant: I love it! The audio really changes things, and the inventory was nice. I would have preferred if you brushed things up more to be honest – rather than making an addition, but if others are opposed to that I understand. The audio is super nostalgic as I used to play BurgerTime way back and I like that.

Interviewer: That's so cool to hear! What about the minigame and waiter?

Participant: The minigame is cool and all, but for me the visuals are far more important in an update like this. I get that it might be a lot of work, but what's the point of a minigame for something that doesn't entice the user. That said, I'm not being a "hater" [mimicking]… I do love the aesthetic and the game like I said last time. Oh, and I'm very happy you got rid of the closing the game problem. I prefer the minigame's look to the rest of things to be honest, and the noises when you go through it – you should have added that to the button presses in the rest of the game, like on the main menu and stuff.

But yeah about the minigame, I like it. It just wasn't my biggest ask and I'm more glad you added the audio and inventory and the waiter. The waiter is cool, and something new that keeps you on your toes, I guess.

Interviewers Notes:
- Still slightly uninspired, nonchalant vibe.
- Happy with progress, but clearly wanted more on the UI side of things.
- Speaking constructively and voice shows they mean to help with ideas and refinements.

Conclusion:
The participant had a lot to say about their preferences, and this helps in further understanding what is important to users. Clearly the bigger priority was enhancements as opposed to brand new content. However, the survey indicates they all saw the waiter as the leading feature – whether or not this is because it is the freshest feature I added is something we cannot confirm. Overall, this participants feedback shows that whilst the waiter made the game more enjoyable, solidifying the foundation of the game could have affected things more.

Participant Transcript

Date: 01/05/2020

Participant Number: 009

Interviewer: Rowan Aldean (Researcher)

Clean Verbatim Post-Update Interview Transcript

Interviewer: So how do you feel about the research experience and more specifically about the update itself?

Participant: It's been cool, and I'm glad I could help. I actually suggested adding a minigame and I like that you added that despite me missing your interview the first time around. You picked a relevant and pretty fun minigame too, so credit for that. I did kind of hope you would do like a graphics update though – it was something else I suggested?

Interviewer: Thanks for the minigame suggestion, it worked well with a bunch of other ideas. I am still conscious of users wanting updated graphics, but it wasn't very stressed in the pre-update research. Do you think there is a feature that could be added that would make things far more enjoyable? Would it be the graphics?

Participant: I don't know about it being the graphics. I think they would make the game better. Whether it actually feels more enjoyable is something we'd see when I play it [laughs]. It's one of them, where right now this game is enjoyable and so I guess adding better graphics would make it more enjoyable? But then if the minigame and waiter were gone and you came back with only better graphics, then I'd be a bit let down. I think the minigame is the one to be real with you. If you took this and ran with it, you could have loads of secrets and minigames and things that tie in with one another. It'd be sick.

Interviewer: Thanks so much for the feedback. That was the last question I really have to ask. Is there anything you'd like to add?

Participant: No, thank you. Well done on the minigame though. Heard me out and that's good enough with me [chuckles].

Interviewers Notes:
- Very positive
- Relaxed
- Doesn't seem too concerned with the game's enjoyability but more so with their experience with it.
- Happy with the game. Neither a satisfied nor dissatisfied tone of voice.

Conclusion:
This participant seems satisfied with the game but not overly blown away. They did confirm that it was enjoyable but noted an important thing, that is that enjoyable is relative to what came before. Now I did ask if it was more enjoyable in the survey, and this participant has given good reasoning as to why perhaps the results were not a perfect 100%. This feedback is insightful and helps understand the rationale behind some of the survey responses.

Participant Transcript

Date: 01/05/2020

Participant Number: 007

Interviewer: Rowan Aldean (Researcher)

Clean Verbatim Post-Update Interview Transcript

Interviewer:	Let's start by me asking how you feel about things overall now that the game has been updated?
Participant:	I really like the changed inventory, and how everything is nice and neat. It's also great for when I made my own levels with the new waiter and they were huge. The inventory helps keep track of what I have got, before I have to go to each door and read the message [chuckles].
Interviewer:	Great! Previously we can agree you were apprehensive to the level editor idea, right? How do you feel about things now that you have seen additional content be added and have made use of it more?
Participant:	I can understand why it is there now, as it means I can create a level to my liking and even – if I wanted to – let others have a play. I really wish you could have upgraded the graphics and the menu and stuff, but not by redesigning, maybe just change the font? Besides that, I enjoyed this way way more than the earlier version…[pauses] Also this one didn't make me use that task manager thingy! [louder chuckle].
Interviewer:	[laugh]… that's good to hear! And about the waiter enemy as a character? Did you enjoy the mechanics of him and how he operates? I noted you disliked how every enemy kills you before?
Participant:	Yea, I love it. You really took that down? [fake surprise] I think it's a twist to the game and it also can be really annoying when he catches you multiple times. Makes you want to just restart and beat your time or get super quick.

Interviewers Notes:
- Much more enthusiastic mood and body language.
- Pleased with the update but I can understand they wanted more content and collectibles.

Conclusion:

This participant was initially keen on power-up like collectibles. This is an idea I noted onto the project Kanban board and will investigate. I am happy they are relaxed and comfortable with their input being taken and worked on however in future I can try to plan my feature enhancements in some order to allow more changes in better time. Whilst the Gantt chart worked and this participant is happy, I could have improved on the time spent implementing.

Rowan Aldean (2nd Year Undergraduate // Department of Computer Science at Swansea University)

Summary

The survey and interviews have given a strong insight into what features make a game more enjoyable. As stated in my brief analysis of the survey results, it is somewhat clear that users love new content – this being said, without a decent base game the users would not enjoy the minigame. I am pleased with the progress made and the results seen matched my expectations however they are not as significant as I would have imagined considering a sample size of 10, whereby many suggestions seemed to have the same rationale.

My approach of combining ideas into a larger more complex idea meant a clean and efficient implementation phase, but having heard the users in interviews, maybe more enhancements to the base game could have added to the enjoyability of the waiter and minigame features.

It is difficult to say whether this would have been a better approach as whilst this would have perhaps meant better enjoyability in responses, it could have been a detriment to my assessment on this user research. The survey shows that users were pleased, but the interviews seem to show that a good amount of them are not any more enthusiastic about the game.

As outlined in my brief breakdown of survey results above, there was numerical evidence that an increase in enjoyability was seen. The participants have confirmed this in the interviews however the time of interview and of demonstration was not fixed and so a change in mood, outlook, and opinion could well be as a result of external factors.

A safe statement to make regarding what has been found in this user research, is that users have at least two driving factors to a game's improvement and heightened enjoyability. First, the original game design, theme, and mechanics must be sound and enjoyable. Second, the features added which revolve around added content i.e. new characters, new minigames, character customization etc. impact the enjoyability of the game more. Research has shown that this concept of humans liking the novelty of new things, is a fact and is something hardwired into us and linked to the ventral striatum of the brain (Wittmann, Seymour, Daw, & Dolan, 2008).

Rowan Aldean (2nd Year Undergraduate // Department of Computer Science at Swansea University)

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Student ID: 973765