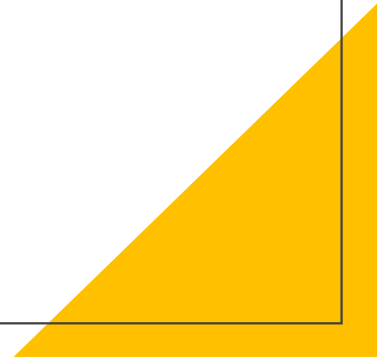


# Feasibility Demo

Tia C

CMP 400 – Honours Project Proposal and Execution



# What will we discuss?

- Overview of Project
- Project Plan
- Gantt Chart
- Risk Analysis
- Research Question
- Annotated Bibliography
- Storyboard of Game Scene
- Game Structure Diagram
- Survey Design
- Questions

# Overview of Project

- Growth of the internet and pandemic has exacerbated cyber crimes – particularly technology-facilitated sexual violence (TFSV).
- Current mitigations are not suitable or accessible – currently little to no education about TFSV.
- Public bodies are not currently suited to deal with the influx of victims
- A game-based mitigation will be developed to protect and prevent against TFSV.

As more people have gained access to the internet and with the pandemic meaning that more people are working and communicating on the internet than ever before. This has caused a surge in the number of cyber crimes being committed across the world particularly tech-facilitated sexual violence – which is sexual violence that is enabled by technology, such as sextortion, revenge porn and the use of internet to facilitate sexual assault and rape.

There are very little mitigations in place for TFSV, and they are not accessible for the public – these mitigations are aimed at victims, rather than preventing people becoming victims to begin with. Charities and police have reported that they are not equipped to deal with the number of people becoming victims as they do not have the support or knowledge to prevent these crimes and support victims.

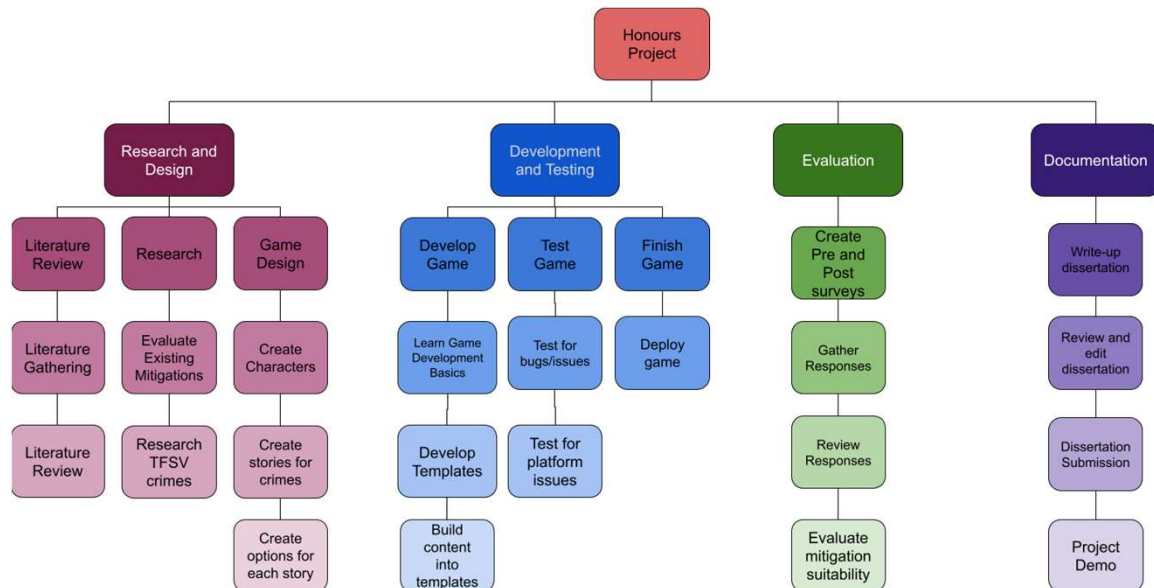
To educate people about tech-facilitated sexual violence, a mitigation in the form of a serious game will be developed to protect and prevent people becoming victims.

# Project Plan

- There are 4 main stages:
  - Research and Design
  - Development and Testing
  - Evaluation
  - Documentation

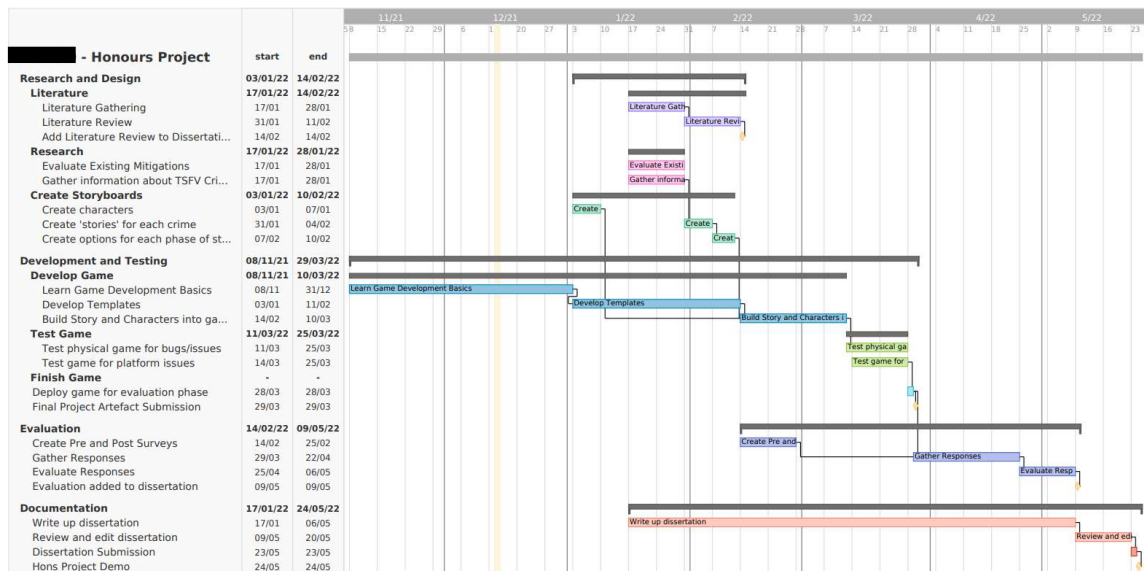
There will be four main stages within this project are research and design, development and testing, evaluation and documentation.

## Work Breakdown Structure



These main stages will directly feed into the work breakdown structure. The four main stages are broken down further into sub tasks, which are the literature review, research, game design, game development, game testing, game deployment, survey creation and dissertation writeup.

# Gantt Chart



This can be seen within the gantt chart here. Many of the tasks run concurrently to utilise time more effectively, tasks which are dependent on the completion of another task are seen on the gantt chart through the connecting lines. The milestones in the project are adding the Literature Review to the dissertation, Finish project artefact submission, Evaluation added to dissertation and honours project demo,

# Risk Analysis

- Six main risks were identified for the project.
- Out of the six, there are two low impact risks and four medium impact risks.
- Each of these risks have mitigations, with one risk having a contingency plan in place.

Six risks that could affect the project were identified, two of which were low impact and the four others were medium impact. Each risk has a planned mitigation, with a contingency plan in place for a medium risk.

# Risk Analysis – Risk One

“Lack of knowledge with game-development software”

Deemed to have a **medium** likelihood and **high** consequence.

Game may not be developed, meaning that mitigation cannot be evaluated for effectiveness

Free tutorials, community forums/discords, library resources

The first risk was a medium impact risk, which was “a lack of knowledge with game-development software”. This risk has a medium likelihood to cause a high consequence, which could cause issues within the project as the game may not be developed which is the mitigation for the project and cannot be evaluated.

This would cause the project to fail. This can be mitigated through the use of tutorials on youtube, Unity Learn, programming and game development community forums and discords and making use of the library resources for game development.



# Risk Analysis – Risk Two

“Mental Health could be affected”

Deemed to have a **medium** likelihood and **very high** consequence.

Stress and burnout is possible, quality and volume of deliverables can be affected, and project may not be completed

MH to be reviewed weekly, triggers to be identified and removed, sensitive material to be limited and a **contingency plan** is in place

The second risk was a medium impact risk, which was mental health related. This risk has a medium likelihood to cause a very high consequence, which could cause the project to fail completely depending on how badly affected mental health is. Stress and burnout is the most likely to cause issues within the project which can affect the quality and volume of the artefacts. To manage this, mental health will be reviewed on a weekly basis through the use of a mental health diary. Triggers will be reviewed and removed, and a contingency plan that involves accessing counselling and GP services will be in place in the event that MH is seriously affected.

# Risk Analysis – Risk Three

“Coronavirus affecting researcher”

Deemed to have a **low** likelihood and **very low** consequence.

Researcher can potential contract virus, may result in bed rest or hospitalisation

Social distancing, mask wearing and regular LFT testing to be practiced.

The first risk was a medium impact risk, which was “a lack of knowledge with game-development software”. This risk has a medium likelihood to cause a high consequence, which could cause issues within the project as the game may not be developed which is the mitigation for the project and cannot be evaluated.

This would cause the project to fail. This can be mitigated through the use of tutorials on youtube, Unity Learn, programming and game development community forums and discords and making use of the library resources for game development.

# Risk Analysis – Risk Four

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“Hardware and/or software failure”

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Deemed to have a **low** likelihood and **high** consequence.

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Hardware may become unusable, software may fail both of which can cause data loss and/or disruption

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Physical and cloud backups used to mitigate hardware and software issues, access to other hardware available if necessary

# Risk Analysis – Risk Five

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“Lack of Participants for testing”

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Deemed to have a **medium** likelihood  
and **medium** consequence.

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In-person testing not safe, game and  
surveys need to be advertised and  
completed online

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Societies will be asked to advertise,  
social media networks will also be used  
for advertising purposes

# Risk Analysis – Risk Six

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“Game not working on participant’s devices”

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Deemed to have a **medium** likelihood and **high** consequence.

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Risk that game may not be compatible for participant’s device – meaning less participant response

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Pilot study will be carried out, web-friendly game may also be developed to prevent risk

## Risk Analysis – Risk Overview

		Consequence				
		Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)
Likelihood	High (3)	Low (3)	Medium (6)	Medium (9)	High (12)	High (15)
	Medium (2)	Low (2)	Low (4)	Medium (6)	Medium (8)	Medium (10)
	Low (1)	Low (1)	Low (2)	Low (3)	Low (4)	Low (5)

		Consequence				
		Very Low	Low	Medium	High	Very High
Likelihood	High					
	Medium		R4	R5	R1, R6	R2
	Low	R3				

This is the matrix that was used, LxC = impact

# Research Question

- General RQ: How can gamification be applied to educate people about technology-facilitated sexual violence?
  - Specific 1: What are the mitigations available to prevent technology-facilitated sexual violence?
  - Specific 2: How effective are the mitigations at educating, preventing, and protecting people against technology-facilitated sexual violence?
  - Specific 3: How effective is gamification to educate users about technology-facilitated sexual violence?

- Title: Practicing Safe Sex(t): Implementing mitigations to tackle the rise of technology-facilitated sexual violence
- Aim: To develop a serious game to educate adults about technology-facilitated sexual violence to prevent and protect users from becoming victims.
- Objectives:
  - Review and evaluate the effectiveness of mitigations currently in place to prevent technology-facilitated sexual violence (TFSV).
  - An accessible and user-friendly serious game will be developed to educate, prevent, and protect users against TFSV.
  - To evaluate effectiveness of the game, test participants will be required to complete a pre and post survey about their knowledge and opinion on TFSV.

## Research Question



# Annotated Bibliography

Champion, A., Oswald, F. and Pedersen, C., (2021). Technology-facilitated sexual violence and suicide risk: A serial mediation model investigating bullying, depression, perceived burdensomeness, and thwarted belongingness. *The Canadian Journal of Human Sexuality*, 30(1), pp.125-141.

Summary	<p>This paper looks at the effect that technology-facilitated sexual violence has on victims, particularly the risk of suicide.</p> <p>Quantitative survey data was used to understand the link between TFSV and suicide, highlighting issues such as bullying and depression as a factor that increases the likelihood of a victim committing suicide.</p> <p>The paper deduces that there is a link between sextortion and suicide, as well as a more prominent link between sextortion and depression. The paper also calls for more legal protection for victims and their sexual images.</p>
Evaluation	<p>The authors are professors in criminology and psychology and focuses on the victim's mental state/health after being exposed to TFSV.</p> <p>A large number of participants (521) completed the survey, but only 178(34%) were victims. This means that there was a significantly smaller sample size, which meant that the impact of the individual crimes could not be evaluated effectively.</p>
Reflection	<p>These results can be used to understand the impact that TSFV can have on a victim's mental health state and potentially their will to live.</p>

# Annotated Bibliography

Thomas, M., Binder, A. and Matthes, J., (2021). Sexting during social isolation: Predicting sexting-related privacy management during the COVID-19 pandemic. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 15(3).

Summary	<p>This research looked into the effect that the pandemic had on people's sexting interactions and the measures they taken to protect their privacy. To analyse the data gathered through a self-reporting survey, negative binomial regression analysis was used as participants did not employ privacy management methods as expected.</p> <p>Overall, those who had severe isolation impact from the pandemic were more likely to have increased their sexting interactions without considering or using privacy management when compared to those with moderate to mild isolation impact.</p> <p>Privacy management was not widely used as anticipated and relied on hiding faces and people they knew offline. Women and younger people utilise privacy management with sexting when compared to males and older people.</p>
Evaluation	<p>The study had a significant majority of female participants, which meant that there is a lack of data on males sexting interactions throughout the pandemic.</p> <p>The study was limited to highly educated adults which may have affected the overall results as those with lower education were excluded.</p>
Reflection	<p>These results can be used to examine the impact that the isolation due to the pandemic had on sexting habits and allow for the privacy management techniques employed by participants to be reviewed.</p>

# Annotated Bibliography

Zhong, L., Kebbell, M. and Webster, J., (2020). An exploratory study of Technology-Facilitated Sexual Violence in online romantic interactions: Can the Internet's toxic disinhibition exacerbate sexual aggression?. *Computers in Human Behavior*, 108, p.106314.

Summary	<p>This paper investigates the impact that sexual aggression and toxic disinhibition has on TFSV. It also investigates how responsibility for TFSV is assigned to the perpetrator or victim depending on the incident and victim response.</p> <p>A higher level of sexual aggression and toxic disinhibition was linked to a higher likelihood of a person committing TFSV crimes. Perpetrators were considered more responsible for TFSV crime than victims, however a third of the responsibility was assigned to victims.</p>
Evaluation	<p>The sexual strategies scale was used, which is more sensitive to sexual aggression through the addition of weaker sexual strategies. This meant that sexual aggression could be measured more effectively.</p> <p>Only university students were approached for this research, this excludes people of a lower educational level.</p>
Reflection	<p>This paper can be used to gain a better insight into why perpetrators may commit TFSV crimes and how sexual aggression and toxic disinhibition play a key factor in this.</p>

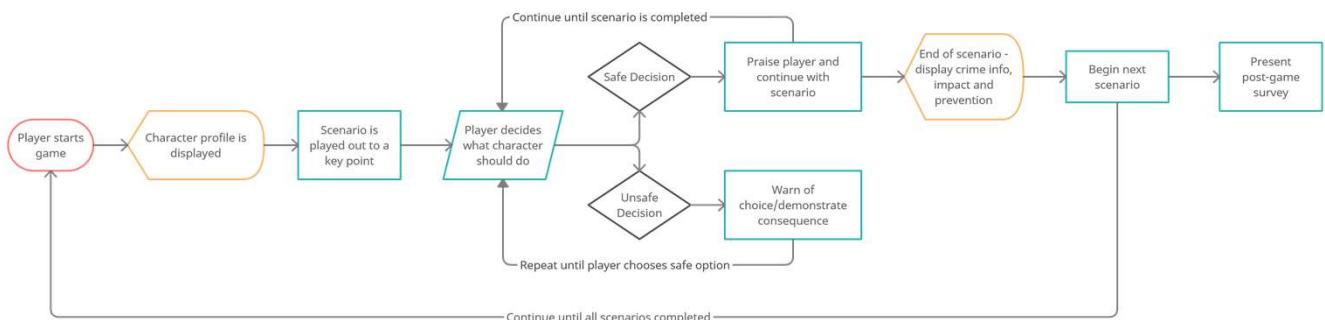
Weaker sexual strategies being “lying, plying with drink and drugs, emotions”

# Annotated Bibliography

Geeng, C., Hutson, J., & Roesner, F. (2020). Usable Sexurity: Studying People's Concerns and Strategies When Sexting. Sixteenth Symposium on Usable Privacy and Security (SOUPS 2020), 127–144.

Summary	This conference paper looks at sexting as a intimacy-building practice and studies what platforms people are using to send self-created explicit material, how they engage in sexting, what privacy and security issues that they are aware of and the practices they employ to mitigate these risks. Men are less likely to be concerned about sexts being 'leaked' when compared to women and non-binary people. A large number of people rely on trust when sending nudes and disappearing messages, whilst there are a little number of people that use more secure methods such as password protected apps, plausible deniability.
Evaluation	Social media sites such as TikTok and reddit were used to gather participants, which means that there is a large volume of 18-34 year olds. This means that there is less information about 35-64 year olds and their sexting habits. Intimacy status was recorded to give more detailed statistics and data about the sexting habits of people in relationships, those with beneficial sexual friendships and those who engage in casual sex.
Reflection	This paper can be used to gather an insight into how people engage in sexting, particularly image and video-based sexting. This paper also goes discusses the concerns and mitigations used to prevent misuse of this content.

# Game Structure Diagram



Subject to change!!

# Storyboard of a Game Scene

- This storyboard is currently only for one scene
- This scene revolves around fake sextortion emails
- There will be a scene with a legitimate attempt of sextortion
- Having these two scenes should help users identify actual sextortion attempts



This is Rebecca, a 26 year old marketing executive. She is currently browsing her emails when she sees an email addressed to her with the subject, "Payment Successful". When she opens the email, she is threatened with her private images being leaked to her friends and family if she does not hand over money.

Hi, I know one of your passwords is: [REDACTED]

Your computer was infected with my private malware, your browser wasn't updated / patched, in such case it's enough to just visit some website where my iframe is placed to get automatically infected, if you want to find out more - Google: "Drive-by exploit".

My malware gave me full access to all your accounts (see password above), full control over your computer and it also was possible to spy on you over your webcam.

I collected all your private data and I RECORDED YOU (through your webcam) SATISFYING YOURSELF!

After that I removed my malware to not leave any traces and this email(s) was sent from some hacked server.

I can publish the video of you and all your private data on the whole web, social networks, over email of all contacts.

But you can stop me and only I can help you out in this situation.

The only way to stop me, is to pay exactly 800\$ in bitcoin (BTC).

This is the email that Rebecca recieved. What do you think Rebecca should do?

Pay the money - It's the only way!

Ignore the email - It's fake

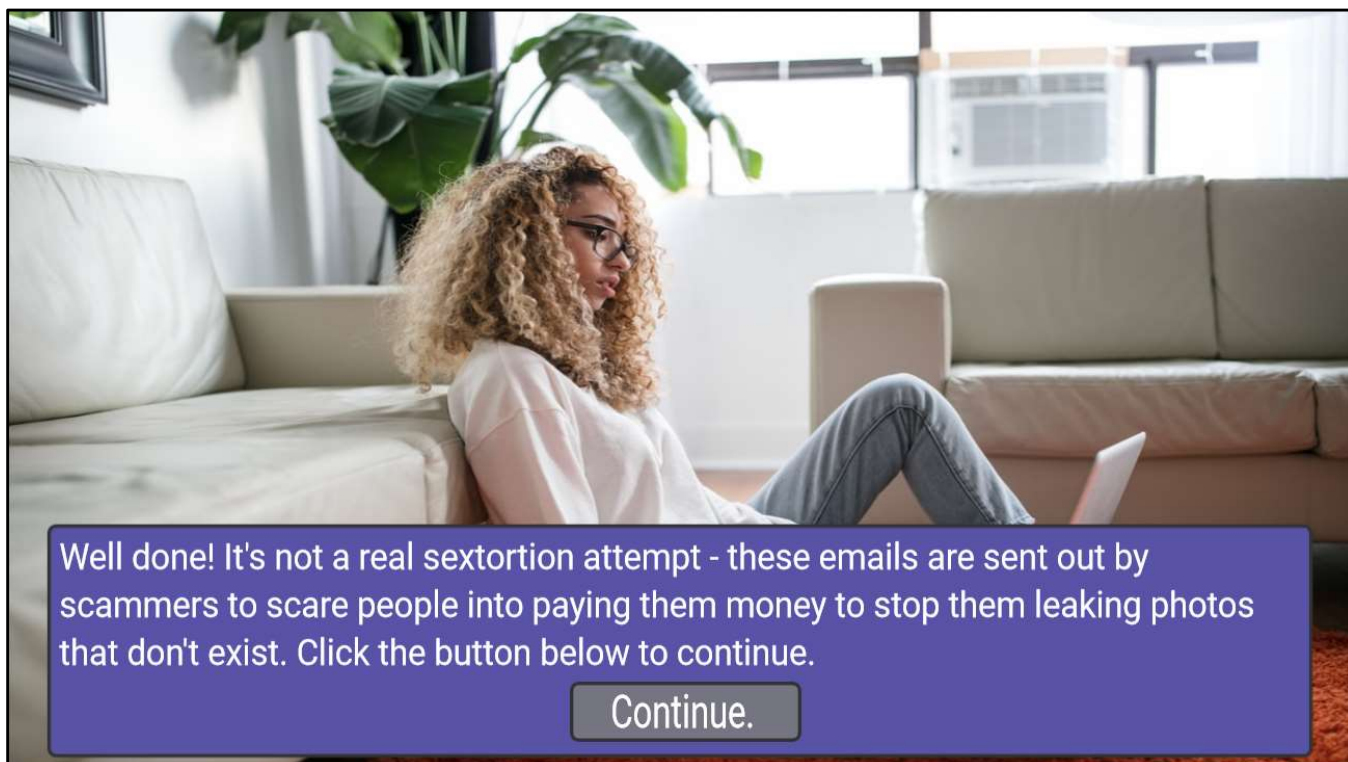
Mark the email as junk





Hmm, how do we know this is real? This email is a little bit phishy - should Rebecca really send the money? Read the email again and think about the other options.

Go back.



Well done! It's not a real sextortion attempt - these emails are sent out by scammers to scare people into paying them money to stop them leaking photos that don't exist. Click the button below to continue.

Continue.



There are a few possible options that you can use to help put your mind at ease if you ever get an email like this. Click on each one to find out more information.

Continue.

Webcam covers are really great ways to prevent unauthorised recording and protect your privacy. You can also get smaller covers for your mobile device cameras.

If you are using a mobile device and do not have a way to cover the camera - there will be an light either on the camera or next to it on the screen to indicate it is being used.

VPN's are used to browse the internet on a private network. These are useful for when you are accessing adult material or would like your internet access to be private.

This means that you are not going to be tracked when using these sites and will prevent malicious actors from being able to see that you are using these sites.

There are a few possible options that you can use to help put your mind at ease if you ever get an email like this. Click on each one to find out more information.

Continue.

# Survey Design

- “How often do you use social media?”
- “Do you engage in sexual activity online, such as sexting?”
- “Do you speak to strangers online through messaging platforms?”
- “In your own words, what do you think sexual violence is?”
- “In your own words, what do you think technology-facilitated sexual violence is?”
- “Do you know where to get help if you became a victim of violence?”

These questions are only a small handful of the questions that will be asked, but represent the style and content of what will be asked within the survey. These questions should allow for relevant data to be gathered, which will then be reviewed to evaluate the use of gamification as a mitigation against tech-facilitated sexual violence.

These questions will be used to understand the participant’s likelihood to be a victim of these crimes. Through the annotated bibliography exercise, it is known that people who are regularly on social media, speaking to strangers and engaging in sexual activity online are more likely to be victims of TFSV. This data will be used to understand this link and will be compared to the post-game data to see if they understand the risks that they are taking and if they will use mitigations to prevent these risks.


These questions are only a small handful of the questions that will be asked, but represent the style and content of what will be asked within the survey. These questions should allow for relevant data to be gathered, which will then be reviewed to evaluate the use of gamification as a mitigation against tech-facilitated sexual violence.

These questions will allow for comparisons and an effective evaluation of the game as a mitigation. It will also assess if the game has successfully taught participants about sexual violence and TFSV as a crime and if they know how to mitigate the risks these

crimes present.

These questions are only a small handful of the questions that will be asked but represent the style and content of what will be asked within the survey. These questions should allow for relevant data to be gathered, which will then be reviewed to evaluate the use of gamification as a mitigation against tech-facilitated sexual violence.

Thank you for listening,  
any questions?

A yellow triangular graphic is located in the bottom right corner of the slide, pointing towards the center.