

PARTICIPANT INFORMATION SHEET

Developing an absolute beginner friendly Capture The Flag platform

You are being invited to take part in a research project. Before you decide whether or not to take part, it is important for you to understand why the research is being undertaken and what it will involve. Please take time to read the following information carefully and discuss it with others, if you wish.

Thank you for reading this.

1. What is the purpose of this research project?

The project is a student project that aims to develop a CTF platform for absolute beginners in order to help them develop their skills in Cyber Security. It will aim to evaluate the resources created by running a study where the participants use the materials provided to solve challenges and measure their improvement after the fact.

2. Why have I been invited to take part?

You have been invited because you have been identified as fitting the criteria for the study. This means that you have been deemed to have a solid understanding of computers, at least some programming knowledge and a good attitude towards learning new things, specifically regarding Cyber Security and secure development practises.

3. Do I have to take part?

No, your participation in this research project is entirely voluntary and it is up to you to decide whether or not to take part. If you decide to take part, we will discuss the research project with you and ask you to sign a consent form. If you decide not to take part, you do not have to explain your reasons and it will not affect your legal rights. Involvement in this research will not affect your education or progression through your degree program if you are a student of Cardiff University.

You are free to withdraw your consent to participate in the research project at any time, without giving a reason, even after signing the consent form.

4. What will taking part involve?

Involvement in this project will take place on at most, two occasions.

For all participants, you will partake in a short questionnaire to gauge your cyber security knowledge. After this, you will be given access to a platform to take part in a Capture The Flag (CTF) where you will solve cyber security challenges in order to improve your skills, learning resources will be provided to aide you in this, following the CTF, you will answer another questionnaire. Overall, this should take at most 6 hours.

For some participants, you may be contacted (if you provide contact information and consent to being contacted) about specific responses to the questionnaires. The criteria for this selection will be where the researchers deem the answers to the questions to be interesting, and would like to know more about why you answered in that way. This will be a short (20 minute maximum) structured interview that will be held online, notes will be taken on your responses in this interview no audio / visual recordings will take place.

5. Will I be paid for taking part?

No. You should understand that any data you give will be as a gift and you will not benefit financially in the future should this research project lead to the development of a new method/test/assessment.

6. What are the possible benefits of taking part?

The participant will gain an improved knowledge of potential vulnerabilities in computer software and how they are often exploited and get the opportunity to practise these skills in a safe, legal manner during the CTF.

7. What are the possible risks of taking part?

There is a possible risk of a data leak around the information that is submitted to the researchers (name, email address and any responses submitted to questions in questionnaire). This will be mitigated by using reputable services to handle data, and by only storing information for as long as it is required before anonymising it.

There is a possible risk of participants attempting to find vulnerabilities in systems that are not owned or controlled by the researchers during the CTF. To mitigate this risk, the researchers will make clear what is and is not in scope and how to identify such things before participants are permitted to start. The researchers will also be present to answer any questions about what is and is not in scope throughout the CTF.

8. Will my taking part in this research project be kept confidential?

All information collected from (or about) you during the research project will be kept confidential and any personal information you provide will be managed in accordance with data protection legislation. Please see ‘What will happen to my Personal Data?’ (below) for further information.

There should be no circumstances where the research team need to reveal your participation to any 3rd parties. However, if required to for legal reasons, where appropriate, the research team will aim to notify you of the need to break confidentiality.

9. What will happen to my Personal Data?

Personal data, according to the General Data Protection Regulation (GDPR) means any information relating to an identifiable living person who can be directly or indirectly identified in particular by reference to an identifier.

For this study, the personal information collected will be:

- Name
- Email address
- Any other information you choose to disclose about yourself in answers

The data will be used to connect the two questionnaires you fill in together, so we have a matching set of answers.

If you check the box in the questionnaire stating you are happy to be contacted for an interview after the fact, then we will retain your email and name in order to contact you.

Once all relevant data has been collected and recorded, the data will be anonymised. This will consist of participants names being changed to pseudonyms, such as “participant A”. This is how participants will be referred to in the final report. Anonymised data will not be shared once the study is completed, and will be deleted once the report has been completed.

Cardiff University is the Data Controller and is committed to respecting and protecting your personal data in accordance with your expectations and Data Protection legislation. Further information about Data Protection, including:

- your rights
- the legal basis under which Cardiff University processes your personal data for research
- Cardiff University’s Data Protection Policy
- how to contact the Cardiff University Data Protection Officer
- how to contact the Information Commissioner’s Office

may be found at <https://www.cardiff.ac.uk/public-information/policies-and-procedures/data-protection>

Cardiff University will need to share email and name with Google for the purposes of this research project. Specifically for the questionnaire form.

After 3 weeks, or when all relevant interviews have been conducted, whichever is earlier, the research team will anonymise all the personal data it has collected from, or about, you in connection with this research project, with the exception of your consent form. Your consent form will be retained in accordance with the University Records Retention Schedules (Completion of project + 5 years) and may be accessed by members of the research team and, where necessary, by members of the University’s governance and audit teams or by regulatory authorities. Anonymised information will be kept for a minimum of 3 weeks but may be published in support of the research project and/or retained indefinitely, where it is likely to have continuing value for research purposes.

If you choose to withdraw from the project, then your data will be deleted. If it has already been anonymised then it will not be possible to withdraw this data if identifiers have been deleted. This will be considered irreversibly anonymised and will likely be done at 3 weeks after the CTF.

10. What happens to the data at the end of the research project?

The collected data will be discarded after the projects completion, it will not be made publicly available. The anonymised summary and excerpts from some participants will be indefinitely included in the report.

11. What will happen to the results of the research project?

The results of the research project are likely to be published sometime after May 12th 2023. The results will be published on PATs (pats.cs.cf.ac.uk).

Participants will not be identifiable from the data they have submitted, we may use any quotes from participants verbatim, where this does not compromise the participants identity.

12. What if there is a problem?

Complaints will be handled directly by the researchers. To initiate a complaint, contact the researchers directly using the contact information provided in the next section.

If you wish to complain, or have grounds for concerns about any aspect of the manner in which you have been approached or treated during the course of this research, please contact Jake Mcneill. If your complaint is not managed to your satisfaction, please contact Martin Chorley.

If you are harmed by taking part in this research project, there are no special compensation arrangements. If you are harmed due to someone's negligence, you may have grounds for legal action, but you may have to pay for it.

13. Who is organising and funding this research project?

The research is organised by Jake Mcneill under supervision of Dr Irene Anthi, both from the school of Computer Science and Informatics in Cardiff University. The research is currently not funded.

14. Who has reviewed this research project?

This research project has been reviewed and given a favourable opinion by the Cardiff School of Computer Science Research and Ethics Committee.

15. Further information and contact details

Should you have any questions relating to this research project, you may contact us during normal working hours:

Name: Jake Mcneill

Address: CF24 4AG, Abacws Building, Senghenydd Road

Email: mcneillj@cardiff.ac.uk (Please put "FYP" in subject line)

Thank you for considering to take part in this research project. If you decide to participate, you will be given a copy of the Participant Information Sheet and a signed consent form to keep for your records.