

Level 4 Project Evaluation - A Distributed Game Using Adverts and Trackers In Web Browsers

For the purpose of this evaluation, you will be playing an online game. The game uses third-party trackers and adverts as game entities, you will have the opportunity to explore, through the game-play, what happens behind the scenes when you are browsing the web (in terms of tracking and advertising) and hopefully gain a better understanding of how trackers collect information from users and how users get targeted with personalised adverts.

First I ask you to answer some questions before playing the game. After you play the game, you will be asked a subset of the same questions along with questions tailored at evaluating the usability of the app. Instructions on how to set up the game will be given in this survey.

The whole evaluation process will take between 20 to 30 mins and can only be completed using Google Chrome as you will be using a chrome extension to play the game. This game is a multiplayer game, supporting up to 5 people per game. You can play the game and go through the evaluation as a solo player or with your friends.

The data in the survey will be submitted anonymously.

My email address: 2329664k@student.gla.ac.uk - Eftychios Karagiorgis
Supervisor's email: Matthew.Chalmers@glasgow.ac.uk - Matthew Chalmers

* Required

1. Before we continue, I ask that: *

Check all that apply.

- ☐ You agree to take part in the survey and that the data you provide or is gathered from the gameplay, can be used for the evaluation of the project
- ☐ You are 16 years old or older
- ☐ You have no impairment that may limit your understanding or communication
- ☐ Neither I or my supervisor is in a position of authority or influence over you
- ☐ You understand that you may withdraw at anytime from the survey
- ☐ You have identified both mine and my supervisors email addresses if there is any need to contact either of us after completion of the survey

Pre-game questions

These questions are designed to asses what you currently know and understand about tracking and targeted advertising in web browsers and your technical aptitude. After playing the game, you will be asked some of these questions again, which will allow us to observe if your understanding has improved.

2. Out of the types of websites below. What type of websites do you believe has the most trackers? *

Mark only one oval.

- ☐ Social media websites such as Facebook
- ☐ E-commerce websites such as Amazon
- ☐ News or blog websites such as The Guardian
- ☐ Streaming websites such as YouTube or Netflix
- ☐ Other: _____

3. How would you rate your knowledge of how trackers monitor the user's browsing activity and collect the user's data? *

Mark only one oval.

1 2 3 4 5

Very Poor ☐ ☐ ☐ ☐ ☐ Excellent

4. How would you rate your knowledge of what targeted advertising is and how it works? *

Mark only one oval.

1 2 3 4 5

Very Poor ☐ ☐ ☐ ☐ ☐ Excellent

5. How would you rate your knowledge of privacy issues in targeted advertising? *

Mark only one oval.

1 2 3 4 5

Very Poor ☐ ☐ ☐ ☐ ☐ Excellent

6. How would you rate your technical proficiency? *

Mark only one oval.

	1	2	3	4	5	
Very Poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Excellent

7. Do you use an ad-blocker? *

Mark only one oval.

☐ Yes

☐ No

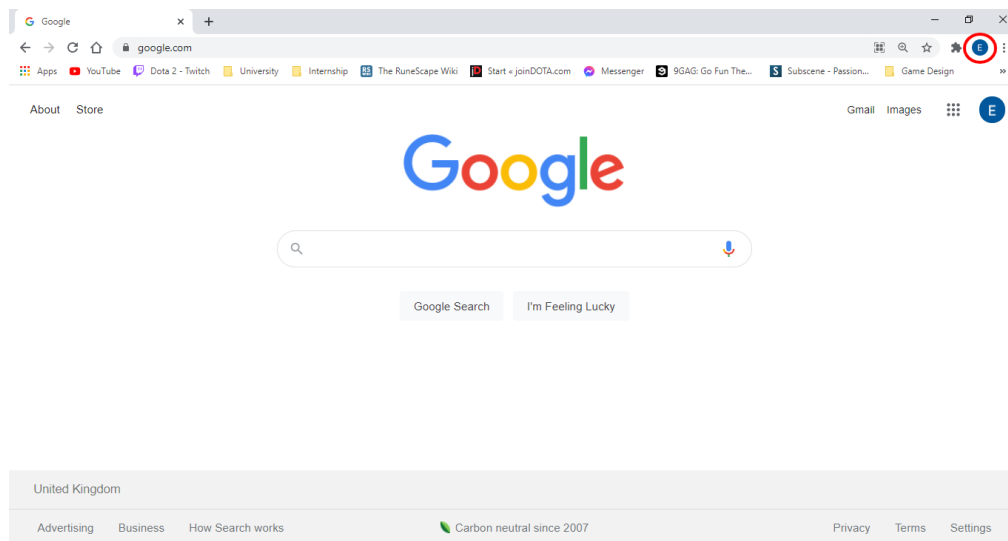
The
game

Bellow you will find written instructions along with screenshots on how to set up (you will only have to do this the first time you play) and play the game. This is the part that will take the longest in the evaluation so I ask that you please be patient.

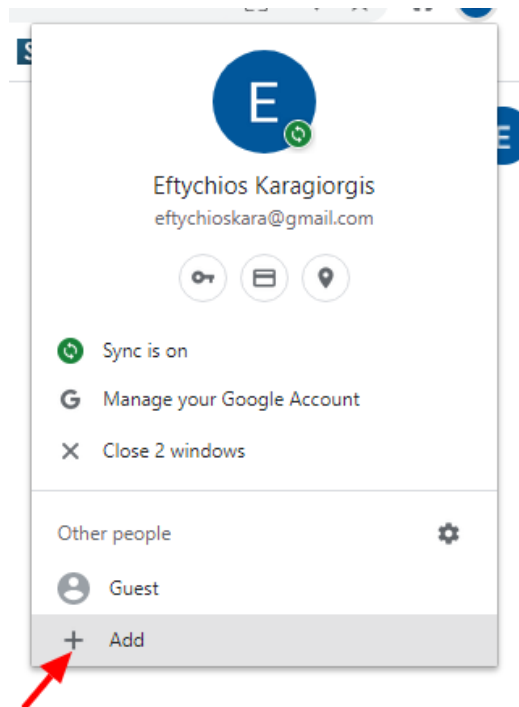
1. Creating a fresh google chrome browsing account.

Do not worry, you do not have to sign up for a new account. To create a fresh browsing account, open up google chrome and click on your user icon on the top right of the browser, then under other people, click on Add. Type in any username and click the Add button.

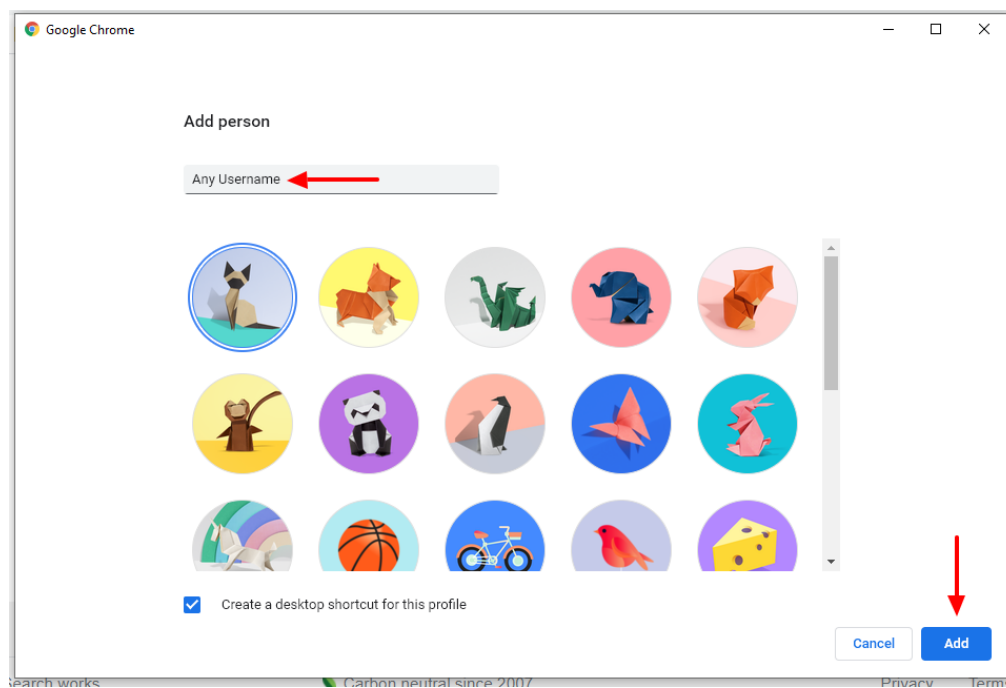
1.1. Clicking on Users Icon



1.2. Clicking on Add in the Users interface



1.3. Adding a new person



2. Download the chrome extension

Download and extract the chrome extension:

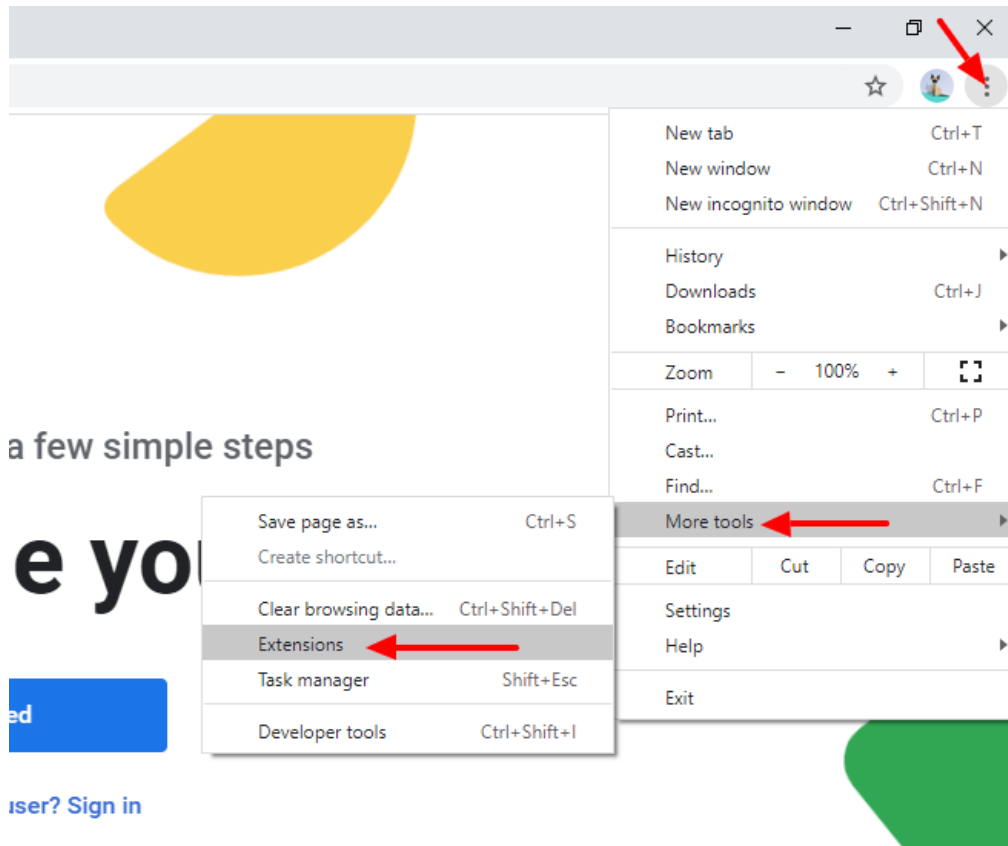
(rar) - <https://drive.google.com/file/d/173aHzEQbDKTW15MBAUbU6mp29WOxByJi/view?usp=sharing>

3. Installing the extension

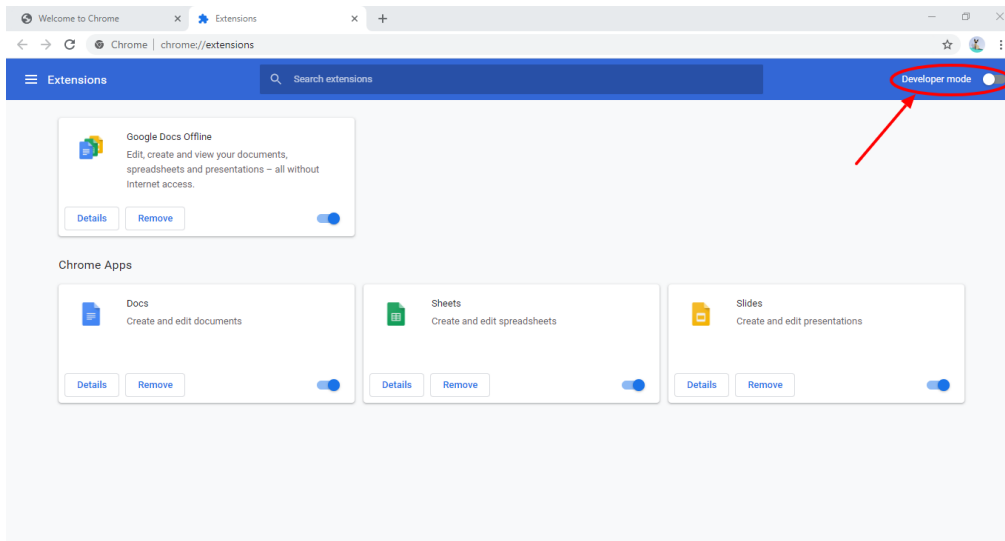
In your new browser session, go to options, more tools and then extensions. You should now see the extensions page of Chrome. Enable developer mode by clicking the corresponding button on the top right of the extension page.

Now drag and drop the extension folder (named AdHunter, extracted from the downloaded zip file) into the page and you should now see the extension. Note that sometimes you might need to refresh the page before it lets you drag and drop the extension.

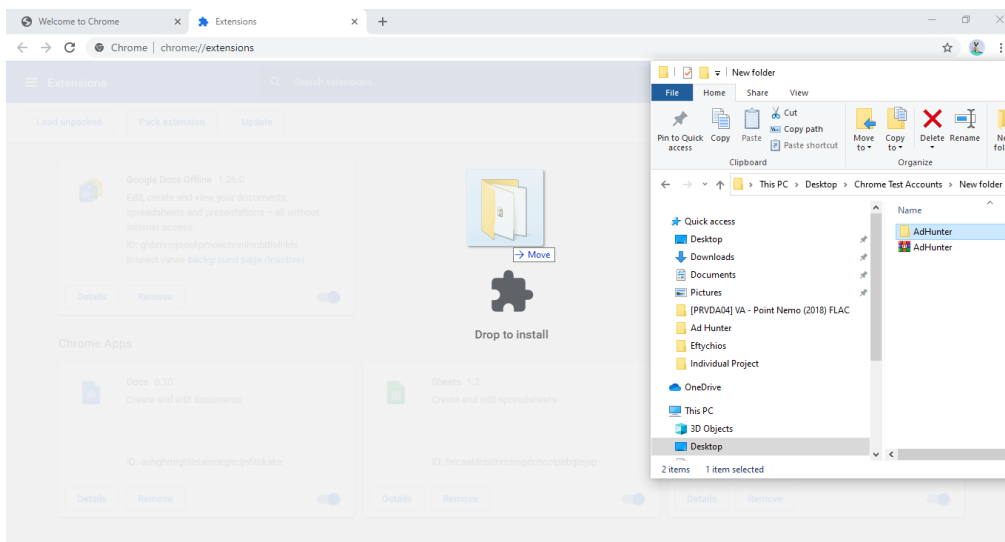
3.1. Navigating to extensions page



3.2. Enabling Developer Mode



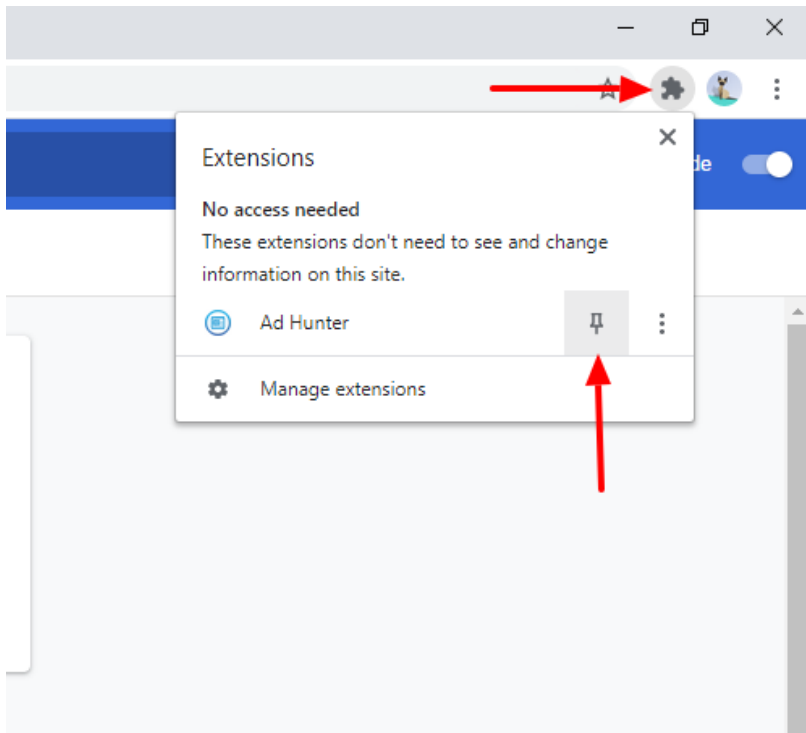
3.3. Drag and drop the extension to install it



4. Pin the extension to the task bar

Pinning the task bar will make it easier to toggle the extensions interface and view the game state while playing. To do this click on the extensions icon on the top right of the browser (shaped like a puzzle piece) and click the Pin next to Ad Hunter.

4.1. Pinning the extension



5. Create account in the web app

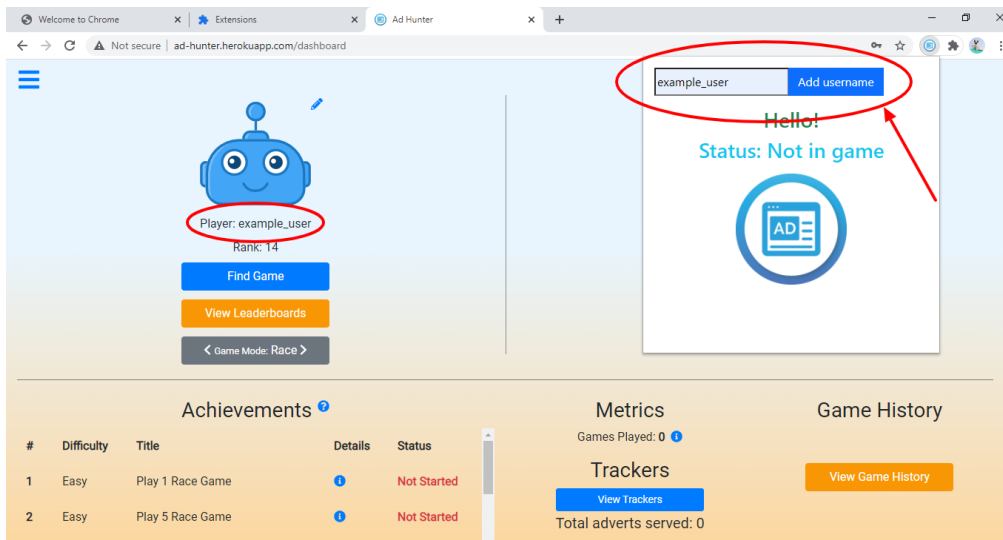
In your new browser session, visit <https://ad-hunter.herokuapp.com/> and register a new account.

6. Connect the chrome extension

When the account is created and you are redirected to the dashboard, open up the extension interface by clicking on its icon (top right) and enter the user name of the account you just created.

Ensure that the user name is correct or you will not be able to play the game. You can change the username as many times as you like, in case you made a mistake.

6.1. Linking the extension to the web app



7. Preparation

Before playing the game, I ask that you spend a few minutes to read the how to play section and the about section.

The how to play section includes necessary information to allow you to play the game, it also includes tips for different strategies. You can access this section by clicking on the How To Play button in the settings.

The about section contains information on trackers and advertisers, privacy issues in targeted advertising systems and general information about the project, including what information is gathered from the players. I would ask that you read the trackers and advertisers and the privacy issues sections which will help you understand better what these are. You can access this section by expanding the side navigation menu and clicking the About link.

8. Play the game

Now that you know how to play, select the Race game mode and play the game. Optionally, play a game with the Category game mode.

The time of the game for both of the game modes depends on the player's strategy as well as the winning condition given.

For first time players:

A game of the Race mode should take between 2 to 10 minutes.

A game of the Category mode varies a lot and can range between 1 to 20 minutes.

For the purpose of this evaluation, one game of Race mode should be enough but you can play as many games as you want, with either of the game modes. You can view your achievements and game history, and see relevant game play metrics in the dashboard.

When you finish playing the game, answer the questions bellow and continue with the survey.

Note: If you have a bad connection, you might be disconnected from the game while playing. If this happens, a red notification icon will be displayed on the extension's popup icon, and you will be unable to continue playing. You can leave the lobby and try to play again.

8. Please enter the user name of the account you have created. *

9. Were you able to complete a full game? (i.e you reached the summary and there was a winner) *

Mark only one oval.

- ☐ Yes *Skip to question 14*
- ☐ No, I stopped playing before someone won *Skip to question 11*
- ☐ No, I got an error while playing *Skip to question 11*
- ☐ No, the extension stopped working *Skip to question 11*

10. Did you play as a solo player? *

Mark only one oval.

- ☐ Yes
- ☐ No

Reason for
not
completing
game

Since you did not manage to complete a full game, you should answer these questions bellow, aimed at understanding why you were unable to complete the game. This will help us make improvements for further evaluations.

11. What was the reason for not completing the game? *

Mark only one oval.

- ☐ An error occurred while playing the game
- ☐ The game was taking too long to finish
- ☐ The game was not engaging enough
- ☐ I did not understand how to play, so I gave up
- ☐ Other: _____

12. If an error occurred, can you provide more details? (such as when it happened, what game mode were you playing, etc...)

The next section asks the same questions as those asked before the game. If you have read the about page in the web app, or managed to play the game enough to understand what is going on, you can choose to answer them. Otherwise, you can go straight to the usability questions.

The next section depends on your answer to the question bellow.

13. Do you want to go straight to the usability questions? *

Mark only one oval.

- ☐ Yes *Skip to question 19*
- ☐ No *Skip to question 11*

Post-
game
questions

The questions below are the same as the questions asked in the first section, with a few additional questions added. Hopefully, after playing the game and exploring the web app, you have learned a few things.

14. Out of the types of websites below. What type of websites do you believe has the most trackers? *

Mark only one oval.

- ☐ Social media websites such as Facebook
- ☐ E-commerce websites such as Amazon
- ☐ News or blog websites such as The Guardian
- ☐ Streaming websites such as YouTube or Netflix
- ☐ Other: _____

15. How would you rate your knowledge of what trackers are and what they do? *

Mark only one oval.

1 2 3 4 5

Very Poor ☐ ☐ ☐ ☐ ☐ Excellent

16. How would you rate your knowledge of what targeted advertising is and how it works? *

Mark only one oval.

1 2 3 4 5

Very Poor ☐ ☐ ☐ ☐ ☐ Excellent

17. How would you rate your knowledge of privacy issues in targeted advertising? *

Mark only one oval.

1 2 3 4 5

Very Poor ☐ ☐ ☐ ☐ ☐ Excellent

18. Is there something that you would like to add about anything that you have learned or found interesting?

Usability
evaluation

The questions below are aimed at evaluating the usability of the web app and are taken from the System Usability Scale(SUS). The corresponding paper can be found at https://www.researchgate.net/publication/228593520_SUS_A_quick_and_dirty_usability_scale.

Navigate through the different parts of the web app and answer the questions bellow.

19. I think that I would like to use this system frequently. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

20. I found the system unnecessarily complex. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

21. I thought the system was easy to use. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

22. I think that I would need the support of a technical person to be able to use this system. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

23. I found the various functions in this system were well integrated. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

24. I thought there was too much inconsistency in this system. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

25. I would imagine that most people would learn to use this system very quickly. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

26. I found the system very cumbersome to use. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

27. I felt very confident using the system. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

28. I needed to learn a lot of things before I could get going with this system. *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

29. Do you have anything else to add about the system?

Thanks
for
your
time

The goal of this study is to try and educate participants about tracking and advertising systems in web browsers, as well as try to understand their current knowledge of these systems. Furthermore, the questions in this survey will help us evaluate the usability of the app and how users liked the app.

Your participation is greatly appreciated, as it is very important that we get responses to the survey. Otherwise, we might not be able to get meaning out of the evaluation.

Feel free to continue playing the game if you found it fun. Otherwise, you can delete the new browser account by clicking on the settings icon in the same interface you added the new account from.

If you are interested to learn more about targeted advertising systems and the privacy issues involved with it, an excellent paper by Estrada-Jimenez et. al. that explains them in great detail can be found here:
https://www.researchgate.net/publication/311938960_Online_Advertising_Analysis_of_Privacy_Threats_and_Protection_Approaches

If you have any queries about the project, or wish to withdraw from the study feel free to email me: 2329664k@student.gla.ac.uk

30. Do you have anything else to add about the project in general?

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