UNIVERSITY OF DUNDEE
SCHOOL OF COMPUTING ETHICS COMMITTEE APPROVAL FORM

Title of project: Graphical Enigma Simulator

Name of Lead Investigator (Student in case of project work): Majed Monem

Module Code if applicable: AC40001 Module Name: Individual Project

Research Supervisor / Other Academic Staff involved: Prof. J. Arnott

Email address: m.a.monem@dundee.ac.uk Funding Body (if applicable): N/A

Estimated start date: 5th Sept 2014 Estimated end date: 4th May 2015

Date submitted: November 2014 SoCEC Ref no. (LEAVE BLANK) _____

DECLARATION:

I have read and understand the University of Dundee Guidelines for ethical practices in research and the School of Computing Code of Practice for Research involving Human Participants. I confirm that my research abides by these guidelines as embodied in the statements in Part A below.

Print Name Majed Monem .....Date .....
(Lead Investigator)

Students must ensure that their supervisors review their application before submission as this can prevent delays in being able to commence a study.

I confirm that I have reviewed this application and consider this application ready for submission.

Print Name John Arnott.....Date .....
(Supervisor)

PART A

The declaration above confirms that you will:

- Provide an information sheet to participants which describes the main procedures to participants in advance so that they are informed about what to expect;
- Tell participants that their participation is voluntary (both in information sheets and consent forms);
- Obtain written informed consent for participation and provide participants with a copy;
- Ask participants for their consent to being observed, should the research be observational;
- Ensure that participants are able to read and understand the participant information sheet;
- Tell participants that they may withdraw from the research at any time without penalty and for any reason;
- Give participants the option of omitting questions they do not want to answer if a questionnaire is used
- Tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs;

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK t +44 (0)1382 344145 f +44 (0)1382 345509

- Tell participants that all recordings, e.g. audio/video/photographs, will not be identifiable unless prior written permission has been given by the participants;
- Debrief participants at the end of their participation (i.e. give them a brief explanation of the study).

PART B

Please answer the following questions:

			YES	NO
1	Will your project involved deliberately misleading participants in any way?			X
2	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort? If Yes, give details on a separate sheet and state what you will tell them to do if they should experience any problems (e.g. who they can contact for help).			X
3	Do participants fall into any of the following special groups? Note that you will also need to obtain satisfactory Disclosure Scotland (or equivalent) clearance when working with vulnerable people.	Children (under 18 years of age)		X
		People with Intellectual or communication difficulties		X
		People in custody		X
		People engaged in illegal activities (e.g. drug-taking)		X
		Non-human animals		X
		NHS Patients		X

PART C

You must provide the information listed below:

1.	Title of project. Graphical Enigma Simulator
2.	Purpose of project, background and its academic rationale. The purpose of this individual project is to develop a graphical simulation to demonstrate the inner works of the Enigma machine. This simulation will give a detailed insight into how the Enigma machine encrypted plain text into cipher text. Animations will aid the demonstration of the encryption process taking place. The Enigma machine was invented by a German engineer in 1918 and later adopted by Nazi Germany before and during World War II. It was used by the Germans to communicate with their allies using encrypted messages. Various versions of the Enigma machine were developed with varying rotors, however most of the machines consisted of three rotors. With this project, the aim will be to demonstrate to students how exactly the encryption process operated within an Enigma machine. The simulation will aid their learning alphabetical substitution methods.
3.	Brief description of methods (e.g. interviews) and data analysis. For this project I will be looking to use participants with different levels of expertise of the Enigma machine. A mixed set of students who are studying within the School of Computing will be providing an analysis on the user interface and their general opinion of usability. The participants will be using

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK t +44 (0)1382 344145 f +44 (0)1382 345509

the simulator to complete the basic task of encrypting plain text to cipher text. A demonstration of the encryption process will also be presented to them.

The participants will be known as participant 1 to participant n; the personal details of each participant will be kept separately and only available to the researcher and supervisor should they require it.

I intend to:

- carry out an evaluation of the simulator
- each participant to complete a Simple Usability Questionnaire Form
- each participant to complete a demographics questionnaire(optional)

The evaluation will require the participant to carry out the basic operation of entering plain text and watch the simulator demonstrate the encryption process. They will also perform the decryption process, turning cipher text into plain text. The participant will be timed whilst doing each task. This will last approximately 10 - 20 minutes.

Once the participant has completed the evaluation they will be given a simple usability scale questionnaire to complete. This will allow the analysis of how the participants found the simulator. This should take the participant approximately 15 minutes to complete.

The plan is to analyse the data gained from this questionnaire and evaluation.

For the timed tasks we will be using the times taken to analyse how quickly the participants are able to carry out the same task.

4. Participants

This study will require participants who are studying within the School of Computing.

4a Recruitment methods:

An email will be circulated to every student and staff member within the School of Computing, requesting if they wish to assist in evaluating the simulator.

4b Number: 5 – 10.

4c Age: 18+

4d Gender: N/A

4e Exclusion/Inclusion criteria: Participant should study/work within the School of Computing.

5. Consent and participant information arrangements:

Consent form and an information sheet have been attached to this simulator.

6. Debriefing / Feedback:

Upon debriefing, details of the project and explanation of the participant's role of the evaluation shall be explained.

After the participant has complete the study, they will be asked to fill out a Simple Usability Scale questionnaire.

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK *t* +44 (0)1382 344145 *f* +44 (0)1382 345509

7.	A clear but concise statement of how you will ensure confidentiality, any ethical considerations raised by the project and how you intend to deal with them. Each participant will be given a unique ID at the first meeting (e.g Participant 1) and referred to only by this ID throughout the rest of the study. The participant's details will be kept separate from all other data gathered during the study. Data gathered will be stored in an anonymous manner and no photo or video footage will be recorded of any participant.
8.	Participants forms (See code of practice for examples and standard consent form). I have attached [1] information sheet/s. I have attached [1] consent form/s I have attached [0] combined information/consent form/s I have attached [0] release form/s. I have attached [2] demographics questionnaire.
9.	If external ethical approval has been granted, please attach approval letter and tick box ❑.

There is an obligation on the lead researcher to bring to the attention of the Ethics Committee any issues with ethical implications not clearly covered by the above checklist.

Email this form and accompanying attachments as a zip file with your name and date submitted to soc-ethicsmembers@dundee.ac.uk

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK *t* +44 (0)1382 344145 *f* +44 (0)1382 345509

School of Computing
University of Dundee

Evaluation of Graphical Enigma Simulator

I would like to invite you to take part in my research study. Before you decide, I would like you to understand why the research is being done and what it would involve for you. I will go through the information sheet with you and answer any questions you have.

Do I have to take part in the study?

It is up to you to decide to join the study. I will describe the study and go through this information sheet with you. If you agree to take part, I will then ask you to sign a consent form. You will be given copies of these forms to keep. You will be provided time to ask any questions you may have. Please also feel free to ask questions at any time during the study.

What happens if I wish to withdraw from the study?

There are no obligations. You are free to withdraw at any time, without giving a reason and without penalty.

What will I have to do?

You will be seen by myself, the researcher, in the School of Computing, University of Dundee, in a user based lab study session.
I will begin by asking questions from a demographics questionnaire to get general information about you. You will then be asked to perform an encryption process by simply working through the application and using the encryption method which will examine the usage of the application. You will be timed whilst doing the task to see how long you take to complete the task and also being observed for any errors which may occur. After completing the tasks you will be asked a short series of questions which should take at most twenty minutes to help me understand what you might expect or find helpful from an application which will help to aid in the exploration of a new environment. With a specifically tailored set of questions, I will be able to build the requirements for the system and develop it to its full potential.
You will then be asked to answer a set of evaluative questions and will have an opportunity to tell me about your experience with the task and give me your thoughts and opinions to help in further development of the application. Similar to the previous questionnaire this will also take approximately fifteen minutes.
This brings the overall participation time to approximately forty minutes.

What are the possible disadvantages and risks of taking part?

There are no risks associated with this study and I hope that the task will be enjoyable. The timing and location of sessions will be discussed in consultation with you.

What are the possible benefits of taking part?

In my experience, people enjoy taking part in research as they are helping to develop new technology. Your involvement will help me to understand how the simulation and user interface can be improved, which can potentially help people understand the inner workings of the Enigma machine and make any enhancements.

What if there is a problem?

If you have a concern about any aspect of this study, you should speak to myself, the researcher, and the supervisor whose contact details are available below. If you remain unhappy and wish to complain formally, you

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK *t* +44 (0)1382 344145 *f* +44 (0)1382 345509

can do this by speaking to Dr Janet Hughes, Dean and Head of School of Computing, University of Dundee [phone: 01382 385195 or email: jhughes@computing.dundee.ac.uk].

Will my information be kept confidential?

Yes. I will follow ethical and legal practice and all information about you will be handled in confidence. To ensure anonymity, personal records will only be available to myself, the researcher, for the duration of the study and will not be kept together with the results or be presented in the report. If your data is used for publications or presentations, no reference to your identity will be made.

Who has reviewed this study?

The School of Computing's Ethics Committee, which has responsibility for scrutinising all proposals for non-clinical research on humans at the University of Dundee's School of Computing, has examined the proposal and has raised no objections from the point of view of ethics.

Who can I contact in connection with this research?

Feel free to contact the researcher:

Majed Monem: m.a.monem@dundee.ac.uk

Supervisors:
John Arnott: j.l.arnott@computing.dundee.ac.uk

Thank you

Thank you for taking the time to read this Information Sheet and for considering taking part in this study.

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK t +44 (0)1382 344145 f +44 (0)1382 345509

CONSENT SHEET

School of Computing
University of Dundee

Evaluation of Graphical Enigma Simulator

Participant ID_____

		Please initial box
1.	I confirm that I have read and understand the information for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw from the study at any time without giving any reason and without penalty.	
3.	I understand that data collected during the study may be looked at by individuals from the research team where it is relevant to my taking part in this research. I give permission for these individuals to have access to my data.	
4.	I agree to take part in the above study.	

Name of Participant	Signature	Date
Name of Researcher taking Consent	Signature	Date

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK t +44 (0)1382 344145 f +44 (0)1382 345509

DEMOGRAPHICS QUESTIONNAIRE

School of Computing
University of Dundee

Demographics Questionnaire Participant ID_____

Evaluation of Graphical Enigma Simulator

All questions are optional

1. Age: _____
2. Sex: M F (circle one)
3. Previous knowledge of Enigma Machine?: Yes No (circle one)
4. Which Operating System do you use the most: Windows Mac Linux (circle one)

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK *t* +44 (0)1382 344145 *f* +44 (0)1382 345509

QUESTIONNAIRE

School of Computing
University of Dundee

Questionnaire Participant ID_____

Evaluation of Graphical Enigma Simulator

(Using a Simple Usability Scale questionnaire)

	Strongly Disagree				Strongly Agree
1. I think that I would like to use this simulator frequently.	1	2	3	4	5
2. I found the simulator unnecessarily complex.	1	2	3	4	5
3. I thought the simulator was easy to use.	1	2	3	4	5
4. I think I would need the support of a technical person to be able to use this simulator.	1	2	3	4	5
5. I found the various functions in the simulator were well integrated.	1	2	3	4	5
6. I thought there was too much inconsistency in this simulator.	1	2	3	4	5
7. I imagine that most people would learn to use this simulator very quickly.	1	2	3	4	5
8. I found the simulator very awkward to use.	1	2	3	4	5
9. I felt very confident using the simulator.	1	2	3	4	5
10. I needed to learn a lot of things before I could get going with this simulator.	1	2	3	4	5

School of Computing, College of Art, Science & Engineering
UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK *t* +44 (0)1382 344145 *f* +44 (0)1382 345509