

CARDIFF
UNIVERSITY

PRIFYSGOL
CAERDYDD

Initial Report

A System to Match Modern Language Partners

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Module Code: CM3203

Module Title: One Semester Individual Project

Module Credits: 40

1 Project description

The School of Modern Languages, Cardiff University each semester has approximately 400 students signed up as part of their language exchange programme. This programme offers the opportunity for a student studying a language to pair up with a native or fluent speaker of that Language and vice versa. This matching process is currently undertaken manually and is very time consuming. This project would require a Computer Science student to work closely with the relevant staff within the School of Modern Languages with the aim of developing a system which could electronically match language partners in an effective and less time-consuming manner.

Currently, students sign up to be part of the programme by answering an online survey, which collates the information into Excel files. Due to the time-consuming nature of the manual task, the only matching criteria the school is able to offer is a preference for a male, female, or either language partner. Where possible they also try to match students on similar degree programmes. The School hopes that with the development of this system additional matching criteria could be introduced.

Due to the popularity of this programme the School has a set of specific criteria they use to give students priority. An example of the criteria is that priority will be given to students on Languages for All courses and to apply, you need to have completed two or more courses and be at a minimum proficiency of Elementary in the language that they want to learn. These criteria are mentioned in the introduction to the survey, but often people ignore this. But it does help (in theory at least) to prioritise students. Ideally the computerised system should be able to filter and prioritise applicants.

The languages for all programme offers language courses at the following proficiency levels:

- Beginners part 1
- Beginners part 2
- Elementary part 1
- Elementary part 2
- Intermediate part 1
- Intermediate part 2
- Higher intermediate part 1
- Higher intermediate part 2
- Advanced part 1
- Advanced part 2
- Further advanced part 1
- Further advanced part 2
- Post Further Advanced

The levels increase in both proficiency and priority in the context of the LFA partner programme [1].

In the event that a non-LFA student wishes to find a buddy, the students will have priority decided by their CEFR level. CEFR stands for Common European Framework of Reference for Languages [2]. The CEFR is designed to provide a coherent and comprehensive basis for the education and use of non-native languages. The CEFR has the following levels of proficiency:

Proficient user	C2
	C1
Independent user	B2
	B1
Basic user	A2
	A1

Source: [3]

The final system should take the various levels of ability from both LFA students and CEFR students into account and match them to suitable partners so that they can learn the language they want to learn faster.

2 Aims and objectives

Core objectives

Produce software that takes students' answers to online survey and finds them a partner – This is the main purpose of the system that I'm producing. I'll be creating a system and algorithm that uses the provided survey data and matches people to suitable partners.

Prioritise students who are more proficient at the language they want to learn – This is important because more advanced students are going to benefit more from conversing with someone in the language that they're trying to learn. The proficiency of the students is judged on the level they are working at on the languages for all programme.

System must allow for human approval of matches and manual alteration must be supported – In the event that the system chooses a match that a staff member is not happy with, the staff member must be able to look at and select alternative matches.

System must allow for more than one partner - This is important as some people want to learn more than one language. It's extremely important that people can be matched with multiple suitable partners.

System must run on MFL computers at no additional cost – This is an important constraint to consider during the development of the system, as it could affect how I go about designing it. Staff must also be able to operate the system without any additional technical support.

Desirable objectives

Build the system in a way that allows additional matching criteria to be implemented into the process – It would be ideal if the new system allowed for additional matching criteria to be implemented into the current matching process. This is something that I will add if I manage to get all main functionality working without problems.

Offer matches for non language for all students. - These matches should be based on the students' CEFR level (As explained in project description). LFA students are the primary concern but it would be an added bonus if the system allows for CEFR students to be matched with partners too.

3 Work plan

Before project start (Late 2016)

- Initial meeting with client

Week 1 (23rd January 2017)

- Initial meeting with project supervisor

Week 2 (30th January 2017)

- Submit initial project plan (30/01/17)

Week 3 (6th February 2017)

- Produce a list of functional and non-functional requirements
- Risk assessment
- Perform research into architecture options (Java, Javascript, MySQL, PHP)
- Identify users and establish use cases

Week 4 (13th February 2017)

- Meet client and school IT staff to discuss the environment the system will be deployed into
- Choose architecture and create initial plans for system (UML diagrams)

Week 5 (20th February 2017)

- Create potential GUI designs to show to the client
- Meet with client to discuss GUI designs

Week 6 (27th February 2017)

- Build GUI Prototypes

Week 7 (6th March 2017)

- Build base system for handling supplied data

Week 8 (13th March 2017)

- Design algorithm for matching students
- Start programming implementation of algorithm

Week 9 (20th March 2017)

- Finish programming algorithm implementation
- Test algorithm.
- User testing

Week 10 (27th March 2017)

- Design and implement more aesthetically pleasing version of GUI
- Create help page for system

4 Ethical considerations

Having consulted the ethical approval guide ^[4] for any research performed at Cardiff University, I have ensured that there are no ethical problems with the research I'm carrying out and I do not need to seek the approval of the ethics board in order to complete this project. This is because the data I am working with is already anonymized.

References

[1] Languages for all: Assess your level

<https://intranet.cardiff.ac.uk/students/your-study/learn-a-language/languages-for-all/assess-your-language-level>

Last accessed 30/01/17

[2] Council of Europe website (2017), European language policy

http://www.coe.int/t/dg4/linguistic/Cadre1_en.asp

Last accessed 26/01/17

[3] Cambridge English website (2017), International Language Standards

<http://www.cambridgeenglish.org/exams/cefr/>

Last accessed 26/01/17

[4] Ethical Approval of Research: Procedures and Guidance

<http://users.cs.cf.ac.uk/I.Spasic/ethics/COMSC%20Ethics%20Procedure%20&%20Policy.pdf>

Last accessed 30/01/17