Software Engineering Group Project Handbook

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G52GRP Software Engineering Group Project Handbook 2016

Introduction

The Software Engineering Group Project is one of the most important components of your UG degree. Many Alumni comment to us that this is the module that has had the most value to them as they start their working life. For many of you this will be your first experience of working on a sizeable Software Engineering project involving a group of people. Hopefully many of you will gain more experience of this through a summer placement or an internship and some will have already worked in industry or have even formed your own small companies. Do not fear, there will still be a lot for you to learn about working with diverse people who may or may not think like you.

The purpose of the project (learning outcomes it says in the module description) are for you to have practical experience in working in a team and working for a customer. You have learned about software engineering methods and tools in last year's lectures and will use some of them again in the first semester of the second year in other modules. However, the purpose of this module is to be practical. It gives you experience of working with other people. For many of you this will involve working with people from outside of the University in the form of industrial partners. For all of you it will be working on something which someone else has asked you to do. You will have to find out what they actually want and implement it according to their approval. The main things you will learn in this module therefore fall in the area of "soft skills".

One of the first things you will need to do is write a CV that is meant to convince the project sponsor that they should interview you for taking on the project. You will need to agree with your group what you are all capable of and choose to write an Expression of Interest in four projects that have been advertised. You will need to judge your team's skills and the likelihood of you being able to do the project. So you will have to get together with that team and be honest about what you can offer. There will be roles for more than just software development. You may be the best programmer in the group but that will not make you the best person to lead the team. The ability to organise and motivate others will be far more important for that role. (An example call for Expressions of interest and an Example response to this call are given in the Appendix section.)

You will need to organise yourselves very quickly to do a "pitch" for why your team should be picked to do your chosen project. If your pitch is not good enough you may not get any of your choices and everyone has to do a project!

This is your chance to practice for a job interview. Often such interviews will put you into a group of people you have never met before and make you do a similar sort of pitch on a subject you have never heard of before. This will illustrate to you the soft skill of preparing presentations.

At the end of the project we hold a demonstration day. You may have seen your seniors doing this last year. It is modelled on the sort of trade show that you will often be asked to attend in your early years of your working life. Here the skill of one to one communication will be needed. You will effectively be acting as a sales person for your project.

If you have done all this before then you will have the opportunity to improve the soft skill of passing on to others good advice on how to work in teams and prepare such things.

You will also produce an individual report that will reflect on your group work and how you feel you worked. You will also give reviews of the peers in your group and this may contribute to how their marks being awarded.

A major component of the project will be to practice some of the software engineering techniques that you have covered theoretically or at a lower level of complexity in other modules. You will be expected to use some form of software repository system. For most projects you will use either the school GitLab server or an external Git server such as GitHub or BitBucket. There will be some externally sponsored projects where another repository will be used. Most of these will still be like Git in the way they work. There is a lot of documentation on Git available on the Internet. See for example https://git-scm.com/documentation. There will also be a couple of lectures on the use of Git in the early part of the first semester. You will also be introduced to the idea of a Trello board as an example of project process management board.

Supporting lectures.

As well as the lectures on Git there will be other lectures to help you understand what you need to do. In the first week there will be a lecture given by the Careers service on how to produce a CV. There will also be two lectures in the second semester on how to prepare for you open day stand and how to get posters printed. We will also give you input on how to prepare your final reports. Examples of what we are expecting of both the group and individual final reports are also given in the appendices below.

In addition to the specific lectures on how to do relevant tasks a number of guest lectures will take place in which industry partners will give input on how project management and software engineering work in their real world situation.

Activities

The project will have a number of distinct stages and deliverables. On the first week the teams will meet in the assigned lecture theatre on the assigned day. *This year (2016) the lectures will take place on Friday at 13.00 in LT2. The first lecture will be on October 7.*

Expression of Interest

The first activity will be to write a response to a call for expressions of interest. At the beginning of the course all these will be accessible via the Moodle page. You should get together as a team and discuss the projects on offer and decide a shortlist of ones you are interested in. Then you have to produce your expression of interest in the projects. A fictitious project description and a fictitious expression of interest are given in the appendices at the end of this document. You need to apply for four and you need to model the application on the original call – so don't just recycle the same one for each application you make, make sure you illustrate how you have the skills needed for the given project. Most need the same skills but you will need to do your reason for choosing each of the projects. This will be a first opportunity to divide the work up between the group members. You will, of course, have to do your own CV. You will have a lecture on the first lecture day on how to write CVs given by a member of staff from the careers office. There is also a dummy CV for one of the members of the fictitious group members in the appendices. Each member needs to provide one of these for the expression of interest. The main aim of this document will be to explain why you are interested in the given project and why the project sponsor should choose your team.

The next activity is to give a pitch for the projects. The project sponsors will look at all the applications and choose two groups they want to call to give an oral pitch of their expression of interest. The sponsors will make their decision and you will be given notice the week before the pitch of which ones you have to give. Some of you may not get any of the projects you want and may be attached to a project that does not get a satisfactory match by the time of the pitch. The majority of the projects have an industrial sponsor with some sponsors offering more than one project. You will be given a project by the Friday after the pitch day (October 28th this year).

Formal meetings and Sprints

One the project proper starts you will have to make arrangements for regular meetings with your project supervisor. If you are to be working on an industrially sponsored project you will need to liaise with the project sponsor for meeting times and arrangements with them also. Some will take place via video conferencing, some by physical visits to the companies and some by the companies visiting you. Regular meetings should take place between you and your supervisor and sponsor so that the supervisor and sponsor are kept in touch with project progress. Formal meetings should take place at least every

two weeks. Informal meetings with just the group present will take place regularly and more frequently. Attendance at formal meetings is compulsory and non-attendance will be taken into consideration when your supervisor reviews the individual reports. Attendance at informal meetings should not be avoided without some good cause and the need for non-attendance should be noted. Groups should ensure that they are not meeting informally regularly on a day and time when one or more members will regularly not be able to attend – for example when they have a class the others do not. Records of formal meetings in the form of minutes should be taken and kept on the GitLab repository on the school server. They should also be kept in a document repository agreed with the project supervisor and sponsor can access. Less formal meetings should also be recorded when important decisions have been made.

During the project formal "to do" lists will be introduced. This will be in the form of a set of business objectives worked out with the sponsor/supervisor at the first meeting. From these a backlog will be formed that is agreed by the team and the sponsor/supervisor. Generally a two week "sprint" will be set up and objectives for what will be demonstrated at the end of that sprint will be decided. A Kanban will be started. It is suggested that a Trello board is used for this purpose. Instructions on use of Trello will be given in a lecture with accompanying notes. The sprint backlog will be split up into tasks and checked out by team members with responsibility. Each time a task is completed this will be recorded by moving the task to a done list. Calculation of "burn down" can then be made so that it will be obvious when a task is ahead of or behind expected delivery. At the next sprint meeting (formal meeting) the demo will take place. There should also be a post mortem to decide what has gone well and what could be done better. This is designed to ensure that the targets for the end of the next sprint become gradually more realistic as the project progresses. Do not be afraid to share with the sponsor/supervisor when other class activities (course work for other modules for example) are going to be a pressure. This module is worth 10 credits per semester (20 in total) and you should only give this amount of work. Do not make this an excuse. 10 credits is supposed to take 100 hours of work per person for the semester. That means 600 person hours for a group of six. Work will take place over roughly 10 weeks so that is 10 hours per week each!

Each group should elect a team leader at their first meeting. As in the example Expression of Interest in the appendix this need not be the best coder in the group. There is a lot more to this type of project than coding and the best person is probably someone who has good people skills and understands people who don't speak in CS acronyms. You will also need to elect a git master – see below.

GitLab

All groups will have a GitLab account. All members should sign up for this and will find they have been allocated to their appropriate project by the week after the pitch day *(October 28 this year).* The team will have to appoint a Git Master

and inform their supervisor of this. The supervisor will have the power to assign the member as a Git Master. This person will be responsible for making sure the state of the Git repository is kept up to date and no one commits anything to the master branch on Git that has not passed all unit tests and regression tests. Lectures will be given on the use of Git and Trello during the year. Many projects will use another repository for their working code development (for example teams might use GitHub making it more accessible to an external sponsor). However, the Git Master will be responsible for ensuring that all revisions to code etc. are regularly mirrored on the GitLab repository. You may want to use Google+ or OneNote to store your documents. This is allowed. It is not advisable to use Facebook. This is publically accessible – even when you form a private group – and you never know who will read this. (See below.)

Non-disclosure agreements (NDA) and IP

Those working on industry sponsored projects will need to sign non-disclosure agreements and agreements over IP usage with their sponsor. The School will work with the sponsor to ensure this is done legally. As a result no data or information pertaining to your project should be kept in a publically accessible form unless in line with the terms of the NDA.

As students at the University the Intellectual Property on any work you do as a formal part of your course belongs to the University. If the outcome of your project has any commercial potential then a separate agreement will govern its exploitation. An example non-disclosure agreement is shown in the appendix.

Deliverables

The formal deliverables for this module – the things you get marks for – are as follows:

- Initial expressions of interest
- Personal CV
- Performance at the pitch
- Ethics form and continued adherence to ethics agreement (extend ethics form where appropriate)
- Git and or other repository. Will include all minutes and other non-software documents as well as regular commits of developments. Further advice on the expectations of the repository are given below. Progress on the development of this will be assessed at the end of semester one and again at the end of the module.
- Formal code/software including testing and documentation (for example Javadocs)
- Final report. An example of what this should look like is given in the appendices based on the project from the example EoI. A pro forma for this will be available from the Moodle site.

- An individual report and peer assessments as described before (pro forma on Moodle and example in the appendices).
- The Open Day – formal open day in the form of a trade show.

Marks for Group Assessed Elements

Element	Percentage of group mark	Due Date (2016/17 session)
Expression of Interest	10%	17 October 2016
Pitch presentation	10%	28 October 2016
Ethics form/forms	*	14 November 2016
Interim Development progress assessment (Content of repository etc.)	10%	16 December 2016
Software/Code/Use of Repository/Testing	30%	12 May 2017
Documentation of Software/Group Report	20%	12 May 2017
Open Day stand	20%	17 May 2017

*While Ethics documentation will carry no actual marks non completion of this documentation (and follow up documentation for projects considered to require it) will nullify any marks obtained for any other section.

Ethics Documentation

Research Ethics review

The University of Nottingham requires all students engaged in research that involves human participants or human data (including biological data) to complete an Ethics Review. The ethics process and forms you need to complete are available here: School Ethics Forms on workspace.

All groups must complete the CS Preliminary Ethics Checklist. *Only one form is needed per group.*

If your research involves human participants, involves the use of personal data that is not in the public domain, or biological materials you will also need to complete the CS Research Full Checklist. The checklists must be submitted to the project supervisor before activities may commence. Students should work closely with their supervisors in order to complete the checklists. Once your supervisor is satisfied that the forms are complete, they will send it to cs-ethicsadmin@cs.nott.ac.uk for approval. You will be required to revise your ethics application if it does not satisfy the requirements of ethical research.

Marks for Individually Assessed Elements

Element	Percentage of individual mark	Due Date (2016/17 session)
CV	20%	17 October 2016 (To be submitted with the Group EOI)
Peer Assessment	20%	12 May 2017 (Must be attached with the individual report)
Individual report	60%	12 May 2017

Calculation of final marks

The final mark for an individual will be made up from a group mark and the individual mark. The group mark will count for 80% of the final mark and the individual mark counts for 20%. The group mark will be modified according to the peer assessments.

Important! Late submissions, be it of printed copies or electronic copies of reports and software, will be penalised at the standard university guidelines of 5 % per working day.

Assessment Guidelines

The Group Project Repository deliverable is marked by the module convener based on the extent to which the the specified tasks have been achieved by the due date and, where applicable, how well these tasks have been achieved.

For those in industrially based projects the opinion of the deliverable from the point of view of the customer will be taken into account by the supervisor but the supervisor and members of staff will be responsible for the marks that the project recievers.

The following guidelines are applied when judging the quality of the Group Reports and Software:

- *Exceptional (90–100 %)* The reports, software and use of software engineering tools (repository, Trello board etc.) should exhibit all the characteristics of an Excellent grade. Additionally, the project should have been carried out in an utmost systematic and professional manner, as evidenced by a problem analysis and subsequent requirements specification of stunning clarity and insight, a system design of highest possible quality that manifestly meets all requirements and given at a level of precision and detail that directly could be translated into an implementation, an implementation of highest possible quality and completeness whose conformance to the original specification has

been verified rigorously, and impeccable project management in terms of planning, workload management, meeting deadlines, making the best possible use of each team-member's skills and strengths, and with absolutely minimal (technical or otherwise) guidance from the supervisor. For the industrially sponsored projects supervisors will seek input from the sponsor to indicate whether in their opinion the project was exceptionally exceeding their expectations in every way.

- *Outstanding (80–89 %)* The reports, software and use of software engineering tools (repository, Trello board etc.)should exhibit all the characteristics of an Excellent grade. Additionally, the project should have been carried out in a very systematic and professional manner, as evidenced by a problem analysis and subsequent requirements specification of significant clarity and insight, a system design of very high quality that manifestly meets all requirements and given at a level of precision and detail that more or less directly could be translated into an implementation, an implementation of highest possible quality and completeness whose conformance to the original specification has been verified thoroughly, and very skilled project management in terms of planning, workload management, meeting deadlines, making vary good use of each team-member's skills and strengths, and with very little (technical or otherwise) guidance from the supervisor. For the industrially sponsored projects supervisors will seek input from the sponsor to indicate whether in their opinion the project was undertaken in extension of their expectations.

- *Excellent (70–79 %)* The reports, software and use of software engineering tools (repository, Trello board etc.) should display a complete and thorough understanding of the conceptual and practical issues surrounding the project topic, including related work. The project should have been carried out in a systematic and professional manner, as evidenced by a clear and insightful problem analysis and subsequent requirements specification, a system design of high quality that meets all requirements and substantially provides enough detail for implementation. Software should be completed in all respects and exhibit very high quality. There should be evidence of a high degree of testing. Supporting documentation should be complete and approaching the standard of

high quality professional documentation. For the industrially sponsored projects supervisors will seek input from the sponsor to indicate whether in their opinion the project was undertaken with complete attention to their expectations.

- *Good (60–69 %)* The reports, software and use of software engineering tools (repository, Trello board etc.) should show a good understanding of the conceptual and practical issues surrounding the project topic, including an adequate grasp of related work. The quality of the analysis, requirements specification, and design should be good, and the writing of the reports should be good in general. Software should be competently written. Evidence of testing should be presented. The software should be a complete and usable package which not only illustrates the principles of the work but also exhibits good levels of quality. Supporting documentation should be excellent for all purposes; it should be complete, well written, well presented and generally exhibit high quality. For the industrially sponsored projects supervisors will seek input from the sponsor to indicate whether in their opinion the project was fully completed with little still needing to be completed.

- *Average (50–59 %)* The reports, software and use of software engineering tools (repository, Trello board etc.) would be expected to display an adequate understanding of the key conceptual and practical issues, although weakness may be present in some areas. Some account taken of related work. The quality of the analysis, requirements specification, and design would exhibit significant weaknesses; the design would not as it stands constitute an adequate basis for implementation. The writing would exhibit some flaws. Software should be adequate to illustrate principles; it may display weakness in areas not central to the work and lack comprehensive testing. Supporting documentation would be well presented yet lack completeness; the quality of the documentation should be very good. For the industrially sponsored projects supervisors will seek input from the sponsor to indicate whether in their opinion the project was following their expectations but lacking in some ways.

- *Adequate (40–49 %)* The reports, software and use of software engineering tools (repository, Trello board etc.) would display an incomplete understanding of the central

issues relating to the project topic. The reports would lack a clear structure and strong argument, and the quality of analysis, requirements specification, and design would be below average. The writing would be mediocre. Software would be incomplete, poorly commented and difficult to understand; it would exhibit poor levels of quality. Supporting documentation would be adequate. For the industrially sponsored projects supervisors will seek input from the sponsor to indicate whether in their opinion the project was adequately completed.

- *Poor (below 40 %)* The reports, software and use of software engineering tools (repository, Trello board etc.)would display a very poor understanding of the project area; there would be no clear structure and the analysis may be weak or incomplete. The reports would be poorly written and presented. Software would be limited in capability, and difficult to use. Supporting documentation would be inadequate for most purposes. For the industrially sponsored projects supervisors will seek input from the sponsor to indicate the extent to which the group failed to meet their expectations.

The Open Day is marked primarily on

- how well demonstrations work;
- the overall quality of the display;
- the professionalism of those manning the stall (attitude, ability to demonstrate and explain).
  All members of staff will be expected to provide marking on these criteria for every stall they visit.

The Individual Report is primarily marked on

- The quality of the reflective statement for each section (see the pro forma in the appendix.) This will include the quality of the peer assessment statements – whether the opinion of other members is balanced and well explained against the criteria presented.

- The Individual Report is *not* marked on the contribution of an individual: peer assessment takes care of that. But showing a clear understanding of ones role in the project, the true value of one's contribution, and what was learned about working as a team, including honest self-assessment and peer assessments, is important.

Peer Assessment

As explained above, **peer assessment** is a key aspect of the overall assessment. It is used to distribute the collective group mark to each individual according to merit as perceived by the peers, i.e. the other group members. A written justification supporting the ratings is also required for each member – see the example in the appendix. The peer assessments are submitted in **complete confidence.** The following aspects should be taken into account when judging your fellow students' contributions:

- General Contribution to the project – coding, relationship with customers, data gathering and so on.
- Attendance at meetings
- Creativity – ideas for the project. Creativity on preparing for open day, contribution to designs etc.
- Work rate – did they do the work given to them or did others have to substitute for them? If they did not attend well they may still have delivered the required work as and when desired.
- How did they perform as a team member? Someone who did a lot of coding but did nothing to help the others to play their role should not get extra credit.

Thus it is not just the amount of contributed work that is being evaluated, say in terms of words in the reports or lines of source code, but a wide spectrum of contributions all of which are important for a successful end result. This also means that everyone gets a chance to contribute according to their specific skills and get proper recognition for this. Clearly, someone who excels in designing the system architecture and implementing it has made a

very important contribution. Likewise, someone who is a great writer and took the lead on getting the group reports together has also made a big contribution. But someone who was instrumental in mediating between conflicting views, say, and thus helped holding the group together has clearly also made a very valuable contribution to the group as a whole.

The contribution of each peer will be rated on a 5-point scale ranging from 1 for "None" via 2 for "Inadequate", 3 "Adequate", 4 "Superior" to 5 "Excellent", where **"Adequate"** means that the assessed person has done what is **expected**: no less, no more. Note that it is the **relative** performance of group members that matters as the peer marking only serves to redistribute the assigned collective group mark. For example, if everyone rate everyone else "Excellent", the end result is that everyone gets the same mark for their contribution to the group work which is going to be equal to the collective group mark.

Assessing your peers is a privilege and big responsibility. Be fair and objective in your evaluations. **Do not** come to any agreements with your peers to "give each other 3 or 4" or any other thing. Make sure you make your judgements based on your real views. How well you express your opinion of your peers' contributions will have an impact on your own individual report. You also will not be able to control what others actually write and the marks you give. People are not always able to say what they really think if they are face to face with you. In the past, the members of the School Faculty have been very impressed with the quality and honesty of the peer assessment, and there have been few problems. Each supervisor is charged with carrying out a sanity check on the peer marks based on what they have learnt during the interaction with the group members throughout the year, as well as from the group and individual reports. Should there be obvious problems with some of the peer marks, then the supervisor together with the module convenor will override any or all of those marks where necessary.

Specific issues in assessing software and use of software engineering tools.

In addition to the marks you obtain for the software and software engineering in your project some of our industrial sponsors will provide project prizes for the best code quality and the best overall project. These will be independent of the marks you get from the staff markers.

Code quality does not just look at whether the code works. We will also look at aspects of code complexity. Is the software well commented? Does it have a good and clear layout? Have you used consistent and appropriate naming

conventions? Can someone else easily understand your project software so they could extend it? If, for example, you are using Java, have you used Javadoc compatible comments? Do the methods all have one function? All software should have been undertaken using testing. You should clearly have used test driven development where possible (some user interface components may be difficult to unit test so you may need to have clear user test patterns). Where possible – especially where a UI is being designed – beta testing should be reported. Bug reports should always be listed. In using the repository it should be clear that you have had a good structure of using such things as delivery branch, development branches and issues. Git has the opportunity to set milestones. Trello or similar software must be used to keep a Kanban for your project. There must be evidence of the development process you have used. Deliverables should be planned on a two week cycle through term time and results of demo days and post mortems will be recorded. Regular commits of developments should be made. There will be regular evidence of merging. There will be evidence that all commits have made sure that they do not commit with known bugs. General SE tools should be used and so should UML in designing the software including the use of Use Cases in defining unit tests. Evidence of all software testing should be recorded.

A repository of some form (Google+, OneNote etc) should be used for all documentation. Commits to this repository should include meeting minutes for formal meetings with the supervisor/sponsors. You should also be clear that all decisions made at "daily stand ups" are recorded. Lack of attendance at meetings can only be reported in Peer assessments if they are recorded in documentation. User manuals and so on should also be kept on this repository.

Appendix 1 Example call for Expressions of interest

Call for Expressions of Interest	
Date of Issue	28 Sept 2015
Expected Completion Date	27 April 2016
Project Title	Website and app to support parents of preterm infants
Company	NUH-NHS Trust Preterm Baby Unit QMC Nottingham
Contact Person	Dr Shalini Ojha
Contact Email	Shalini.Ojha@nottingham.ac.uk
Project Background information	
Preterm infants, i.e. those born earlier than expected are at increased risk of ill health and frequently have poor nutrition, growth and development. Parenting a preterm infant can be very stressful. Preterm infants often spend long periods in the hospital and even after the medical crises have passed, and the infant is discharged home, parents may continue to experience distress as they attempt to care for their fragile infant whose development and behaviour may be different to term-born infants. Good nutrition is a key concern for parents. Our work with the parent-partnership focus groups revealed that families of preterm infants would benefit from support in this area. Weaning is the process by which babies start taking foods other than breast or infant formula milk. This time can be very stressful for parents of preterm infants. It is difficult for parents to decide when the baby is ready to be weaned and there is a lack of information about what would be the correct method and food to use while weaning. We would like to design a website to provide information about nutrition and weaning in preterm infants. This site will include information on how to identify when the child is ready to be weaned, culturally acceptable food items that can be used, how to feed infants, and other information about nutrition after weaning. The website should be also available via an app which may be downloadable on a range of smartphones. Currently there are some leaflets that provide information about how to wean preterm infants. The most frequently used is available at https://www.cshsurrey.co.uk/sites/default/files/uploads/documents/services/Weaning%20pret erm.pdf We would like to create a website with this information and investigate if giving parents information through a website and an app may be more useful than giving out leaflets. For the website: we would like to have a platform that has text and pictures, videos as well as the option for parents to share their experiences. The materials will be provided by the Neonatal Team at the Queen's Medical Centre.	
Requirements	
Group must provide	
CV for each member of team	
Description of skills that make the team suitable to complete the project	
Expected Skills	

Highly Desirable	Desirable
Programming in suitable language for producing a web site	Experience in producing web sites

Knowledge of languages used in programming mobile platforms	Experience developing for IOS and Android
Knowledge of Database Management Software	Experience using MySql
Ability to work with patient parents	Experience working in a team including not just technical members
Knowledge of versioning software for maintaining software integrity	Experience with Git
Date of Submission of EOI	4 October 2015
Date of Pitch	11 or 12 October 2015
Notification of award	15 October 2015

For any further information the team representative should in the first instance email the contact person stated above at the email address provided.

Appendix 2 Example Expression of Interest in response.

Expression of Interest

Project Title	Website and app to support parents of preterm infants
Organisation or Supervisor	NUH-NHS Trust Preterm Baby Unit QMC Nottingham
Contact person	Dr Shalini Ojha
Contact email	Shalini.Ojha@nottingham.ac.uk

Team Members	
Name	**Email Address**
Harry Potter	psyhp17@nottingham.ac.uk
Hermione Granger	psyhg2@nottingham.ac.uk
Ron Weasley	psyrw14@nottingham.ac.uk
Albus Dumbledore	psyad@nottingham.ac.uk
Rubeus Hagrid	psyrh1@nottingham.ac.uk
Severus Snape	psyss@nottingham.ac.uk

**Description of Team Skills (You m
ust provide clear evidence of to what extent the team has the Highly Desirable and where possible the Desirable Skills detailed on the Original Project form)**

Our interest in this project has been sparked by a general desire to respond to need. The needs of pre-term babies are significant and being able to produce a product that would help their parents is inspiring for us all.

We have a wide range of experience working with organisations due to out of school activities engaged in by a number of our members. Our team leader Harry Potter had a very difficult early life and this gave him experience of work under severe conditions which has given him great empathy for others.

We all have a range of experience in web design and with the related languages. Servus Snape undertook work between school and university where he was involved in setting up an extensive network.

We have experience in background research which will help us to make good use of contacts in the Bliss organisation. Hermione is particularly skilled in the "magic arts" and particularly those that will help her to get to the bottom of users real requirements and motivation.

Other members of the group also have noted experience. Ron, Harry and Hermione have all worked together on a number of successful projects, which though very challenging at times, have all ended successfully.

Albus has worked in a number of leadership roles and has a deep understanding of managing teams. However, his experience with the languages needed for this project is extensive and has the abilities to ensure

the system back end works well. He is particularly skilled in the use of various SQL languages including MySQL and MicrosoftSQL. Both of which would be suitable for this project.

Rubeus is a real team worker and has experience developing both IPhone and Android applications and will undoubtedly fit the needs of these developments.

We believe we are the right team for this project because we have all of the skills required.

Highly Desirable and Desirable Skills:

Programming in suitable language for producing a web site; Experience in producing web sites –

We have developed web sites in HTML5 and PHP

Knowledge of languages used in programming mobile platforms ; Experience developing for IOS and Android –

Members of the team have produced mobile apps in IPhone and Android format. We have learned Java in the first year and have above average grades in this.

Knowledge of Database Management Software; Experience using MySql –

As explained above one of our team has experience in a number of dialects of SQL.

Ability to work with patient parents; Experience working in a team including not just technical members –

Again background experiences of two of our members make them particularly useful in working with patients in these difficult situations. Members of the group have commonly worked in areas outside of the norm experienced by computer science students.

Knowledge of versioning software for maintaining software integrity; Experience with Git –

Servus has worked extensively in industry with different versions of Git making him a Git expert.

(488 words)

Date of Submission of EoI	14 October 2016
Date of Pitch	28 October 2016
Notification of award	2 November 2016

Please make sure to attach one page CVs for each member of the group.

Appendix 3 Example Individual Report G52GRP 2016/2017

Individual Project Report	Harry Potter
Date of Submission	17 May 2017
Expected Submission Date	17 May 2017
Project Title	Website and app to support parents of preterm infants
Sponsoring Company	NUH-NHS Trust Preterm Baby Unit QMC Nottingham
Contact Person	Dr Shalini Ojha
Contact Email	Shalini.Ojha@nottingham.ac.uk
Project Supervisor	Dr Peter Blanchfield
Supervisor Email	Peter.blanchfield@nottingham.ac.uk
Project Background information	

Preterm infants, i.e. those born earlier than expected are at increased risk of ill health and frequently have poor nutrition, growth and development. Parenting a preterm infant can be very stressful. Preterm infants often spend long periods in the hospital and even after the medical crises have passed, and the infant is discharged home, parents may continue to experience distress as they attempt to care for their fragile infant whose development and behaviour may be different to term-born infants. Good nutrition is a key concern for parents. Our work with the parent-partnership focus groups revealed that families of preterm infants would benefit from support in this area. Weaning is the process by which babies start taking foods other than breast or infant formula milk. This time can be very stressful for parents of preterm infants. It is difficult for parents to decide when the baby is ready to be weaned and there is a lack of information about what would be the correct method and food to use while weaning. We would like to design a website to provide information about nutrition and weaning in preterm infants. This site will include information on how to identify when the child is ready to be weaned, culturally acceptable food items that can be used, how to feed infants, and other information about nutrition after weaning. The website should be also available via an app which may be downloadable on a range of smartphones. Currently there are some leaflets that provide information about how to wean preterm infants. The most frequently used is available at
https://www.cshsurrey.co.uk/sites/default/files/uploads/documents/services/Weaning%20pret erm.pdf
We would like to create a website with this information and investigate if giving parents information through a website and an app may be more useful than giving out leaflets. For the website: we would like to have a platform that has text and pictures, videos as well as the option for parents to share their experiences. The materials will be provided by the Neonatal Team at the Queen's Medical Centre.

Skills required	
Highly Desirable	**Desirable**
Programming in suitable language for producing a web site	Experience in producing web sites

Knowledge of languages used in programming mobile platforms	Experience developing for IOS and Android
Knowledge of Database Management Software	Experience using MySql
Ability to work with patient parents	Experience working in a team including not just technical members
Knowledge of versioning software for maintaining software integrity	Experience with Git
Date of Award of Project	15 October 2016

Individual Report

Answer the following from your own perspective
Why did the group decide to apply to do this project?
We had all experienced working with web design and wanted to have more practice. We also had two members who wanted to do mobile device programming. We were also taken by the idea of doing something useful in our project. The idea of working with a charity for patients was an attractive one**.** **(max 100 words)**
What role did you play and why?
I was immediately selected as group leader. Albus had a lot of experience as leader of groups but wanted to spend time doing coding. I was experienced in coding web sites but no more than the rest. My programming scores were not the greatest in the group but I had worked with two of the others in previous projects and they thought I would be a good leader. I thought Severus would also want to be leader but he was happy to work with me. I also felt we really needed someone who was a people person and apart from Hermione none of the others were. She was keen for me to take the leadership role and then she was able to do the actual work with the parents. **(max 150 words)**
What difficulties did you experience in doing this role?
Mostly the challenge was to coordinate the group who had different ideas of what was most important. Our client was also undecided about what the project could do. She was very busy but I was quite persistent and so managed to get meetings with her. We had regular meetings with her – once a week or every two weeks. At the end it was difficult as she was very busy. However, we managed to conjure up some times. Hermione and I worked together well in interviewing the parents. It would have been more difficult without her. Severus was sometimes difficult to work with and I had to develop an understanding of how best to deal with him to get the best results for the team. **(max 150 words)**
What was your general experience of working in a group?
It was a generally good experience. Some members tended to think the technical work was the most important as this was what they were good at. They did not understand that the project would not have worked without Hermione and me getting to talk to the parents and the project sponsor. They

got annoyed that the sponsor was not always available when they needed them I had to explain the way this worked. On the whole I think we had a good time and learned a lot!

(max 150 words)

If there were particular difficulties in working in this group what did you do to try and resolve these?

Servus wanted to get his own work done for other projects and would criticise others for not doing programming work. This was difficult from my perspective as I knew that the needs of the project were wider than his programming and he did not. As I said above I was able to work with him and get him to understand the work others were doing. The others got upset because he would often not come to meetings and that was difficult when we all needed to know where the project was getting to.

(max 150 words)

What level of attendance did you have for meetings with the project sponsor and or supervisor?	**I attended All meetings**	**Tick.**
	More than 2/3 of meetings	
	Less than ½ of meetings	
	Other	

Peer Review

Names	Performance	
Hermione Granger	General Contribution to the project	She was great at communicating with the parents and helped a lot in deciding what the actual requirements were. She did not do much programming but was always keen to help.
	Attendance at meetings	Attended more than 2/3 of all meetings
	Creativity	She did not contribute a lot to the software development but had a really good contribution to the Open day stand.
	Work rate	She generally worked well and got things done when asked without a lot of prodding
	How did they perform as a team member	Generally well. She really did not seem to get on well with Servus though I think in the end she saw he was a loyal and positive member of the team.

Ron Weasly	General Contribution to the project	I have to admit to bias here as Ron was my best friend even before we came to university. I think his performance was excellent. We had worked together on a number of previous projects so we communicated very well.
	Attendance at meetings	More than half but less than 2/3. He would often forget we were having meetings rather than deliberately not come
	Creativity	Ron is more of a team worker than an ideas person. He always tried hard
	Work rate	He worked really hard often staying up to the early hours to get work finished.
	How did they perform as a team member	Ron is very friendly and gets on and does things. He likes most people though he seemed a bit nervous of working with Servus.
Albus Dumbledore	General Contribution to the project	He was really good at the SQL programming and without him we would not have got finished. He really knows his languages and was able to back up Servus when he needed help.
	Attendance at meetings	Less than ½. Generally this was through forgetting and being too busy at work on the project as much as other things.
	Creativity	He is a brilliant ideas person and always has answers. He is a bit introverting and will not come out with his solution until he is fully sure whether it is right.
	Work rate	Despite not coming to meetings he was always ahead of the rest in being ready.
	How did they perform as a team member	He got on with everyone. He seemed to have a special belief in Servus and kept saying he would work out well in the end.
Rubeus Hagrid	General Contribution to the project	Rubius is a hard worker and always looked out for others. He seemed to have a level of experience beyond the rest of us in the work processes.
	Attendance at meetings	Attended all the meetings
	Creativity	Rubius is another team worker rather than someone who is generating ideas. He could always help everyone.

	Work rate	High. Sometimes tiring he has the energy of a giant.
	How did they perform as a team member	He was great at solving issues between team members. Especially when Servus was being criticised by others.
Servus Snape	General Contribution to the project	He tended to work on his own and come up with software faster than the rest of us were ready. He found that frustrating as he knew he could do most of the work quicker if he did it on his own. I did my best to help him to see the idea of the project was as much about team work as developing your own skills.
	Attendance at meetings	Less than half – usually because he believed he knew more than the rest of us but also he was trying to get ahead on his other work.
	Creativity	High. He really is a wizard of a programmer and we all could have learned a lot from him. Shame he was not as approachable as the others
	Work rate	High. Despite not attending many meetings he always had the work done when it was needed and usually ahead of time
	How did they perform as a team member	He did not seem a team player at all during most of the term but when it came to the Open day he came in to his own, making sure we were all ready to answer questions. As Albus said he did work out well in the end.