University of Glasgow | Department of Computing Science

D3: REQUIREMENTS DOCUMENT

Deliverable ID	D3
Deliverable Title	Requirements Document
Project	PSD3 Group Exercise 1
Team	L
Authors	Michael Kilian Dan Tomosoiu Tony Lau Peeranat Fupongsiripan Hector Grebbel
Deliverable Date	31 October 2012
File Name	RequirementsSpecD3˙v1.tex
Version	1.0

Contents

1 Introduction **2**
- 1.1 Identification . . . 2
- 1.2 Related Documentation . . . 2
- 1.3 Purpose and Description of Document . . . 3
- 1.4 Document Status and Schedule . . . 3

2 Extended Problem Defintion **4**

3 System Scope **5**
- 3.1 System Actors . . . 5
- 3.2 Domain Model . . . 6

4 Use Case Descriptions **8**
- 4.1 Utilities / Account Management . . . 9
- 4.2 Coordinator Administration . . . 13
- 4.3 Advert Submission . . . 16
- 4.4 Advert viewing and applications . . . 19

5 Non Functional Requirements **23**

6 Summary **23**

A Glossary **23**

B Scenarios **23**

C Stakeholder Interview Documentation **23**

1 Introduction

Software Engineering (SE) and Electronic and Software Engineering (ESE) students in the School of Computing Science are required to complete an internship as part of their course, in the summer between level 3 and level 4. An internship is a short period of time that a student spends working within in a company in order to gain experience (from as little as a month up to a year). Internships in the software industry are normally paid, although the rate offered can vary from company to company. The School imposes requirements on these internships to ensure that the student receives an appropriate experience for their degree programme. More details of these restrictions can be found on the Software Engineering Summer Placement (SESP) moodle page.

Currently, available internships are advertised to students on an ad-hoc basis through the SESP moodle page. An organisation wishing to recruit an intern submits an advertisement to the course coordinator, who publishes it on the course mailing list. The format and content of the advert can vary widely, including information about the nature of the internship (what the successful applicant will do), duration, expected start date, compensation, person requirements and so on. The course coordinator checks each advert and comments on whether it is suitable for SE/ESE students, as students who are not enrolled on the SE/ESE scheme may also view the advertisements posted on the SESP moodle page in order to obtain information about possible internships.

Sometimes internships applications are managed through the Careers Service's Club21 website; sometimes through the e-Placements scheme; and sometimes the company has its own system of collecting applications. In addition, some advertisements are posted by academics in the school for students to work with them during the summer vacation.

The allocation of SE/ESE students to internships is tracked by the course coordinator separately, using a Microsoft Access Database. Students are required to inform the coordinator when they have secured a placement, which may or may not have been advertised on the SESP page. The coordinator must then approve the internship if it is suitable for the student's course.

The SESP course coordinator has decided that a unified system is necessary for collecting and publishing internship advertisements, and for tracking which SE/ESE students have been successful in securing them. An initial requirements analysis has found that the following features must be supported by the system:

- Submission of internship advertisements
- Review, comment and publication of internship advertisements by the course coordinator
- Review of advertisements by students
- Notification of successful selection for an internship by an SE/ESE student

1.1 Identification

1.2 Related Documentation

- Client interview questions
- Raw requirements list

1.3 Purpose and Description of Document

This document displays the use cases we have identified for the system. The long term aim of the document is to add to it as new requirements are identified and to use it as a basis for system design.

1.4 Document Status and Schedule

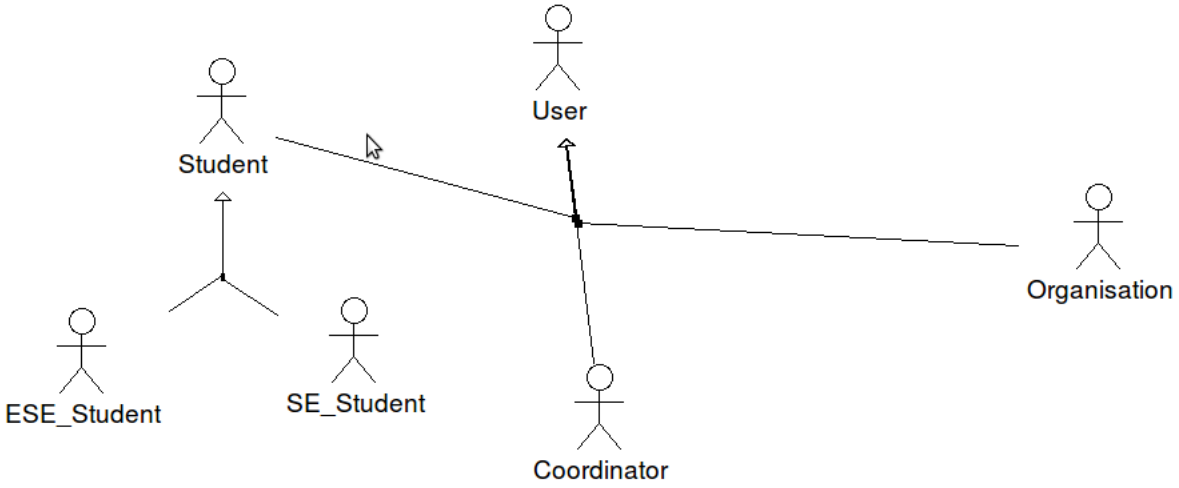
This document should be revised weekly at the very least and ideally should be updated whenever a new use case is identified or is deemed important enough to implement.

2 Extended Problem Defintion

3 System Scope

As specified in the initial business case, the system is only to be used within the department of computing science. The only outside interaction comes from companies who submit advertisements to the system.
The process of a student applying for a placement is the most complex with regards to scope. In many cases larger companies will have their own websites or online application processes which they will wish the student to take part in. In this case the student does not apply through the system and will aplly by using the details found in the corresponding advert for the placement. However smaller, independant companies may not have their own process. For such companies the system will handle direct applications by the student to the company.Finally the student may also find placements entirely on their own. When this occurs the student should submit information about the placement through the system, but the application to the placement is outside the system scope.

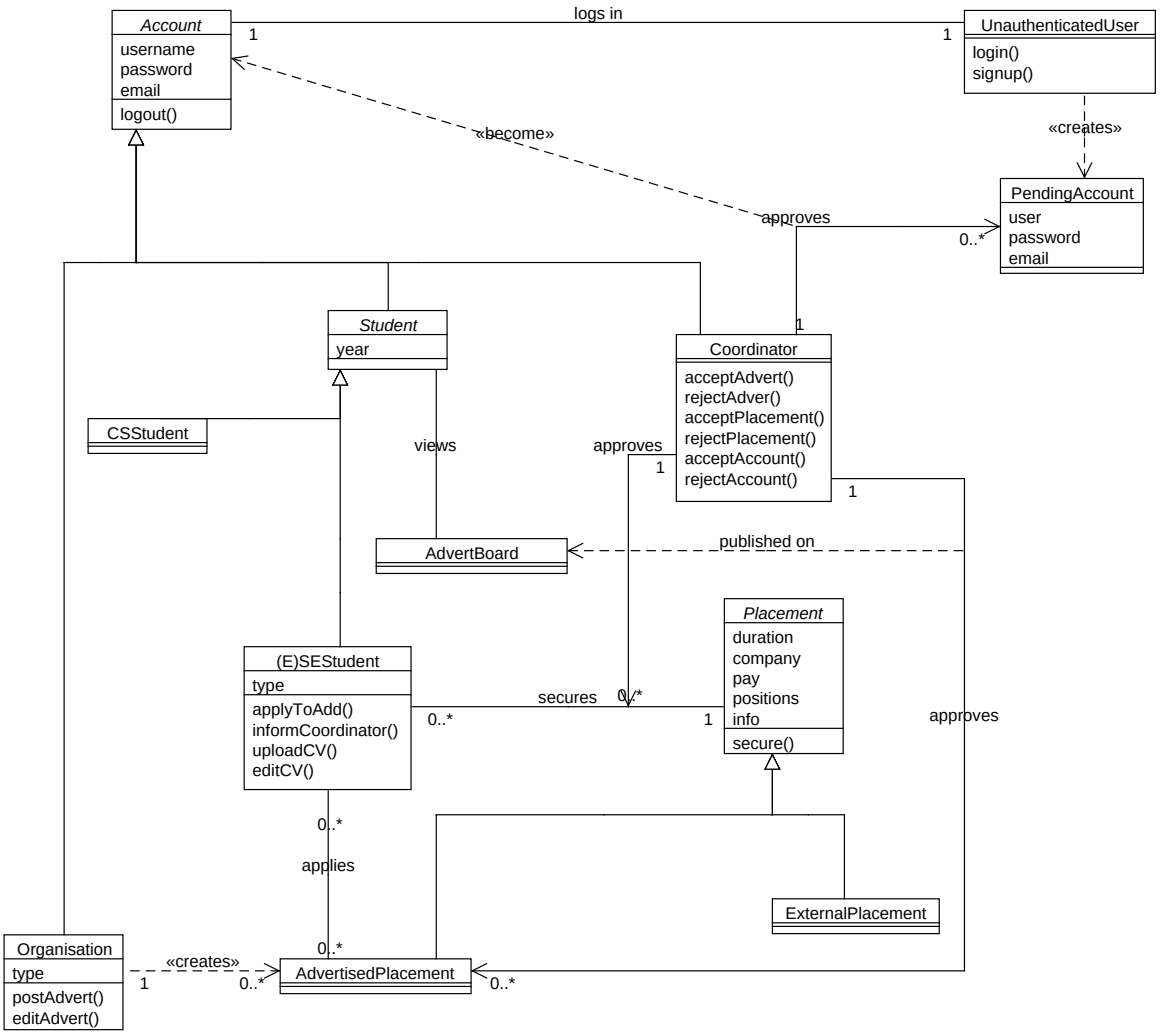
3.1 System Actors



The above diagram shows the actor roles present in the system:

- **Student:** all students enrolled in the system who can apply for placements. This can be further broken down into SE and ESE students, who will have different rules on what constitues a suitable placment.
- **Coordinator:** the course coordinator will have privileges to approve and reject files, view student progress, etc.
- **Organisation:** any group who advertises placements to the system. This may include external companies, intership schemes and university groups.

3.2 Domain Model



Unauthenticated users represents the guests that visit the system, prior to logging in.
Unauthenticated users can opt to sign up, which creates a PendingAccount instance, that needs to be approved by a Coordinator. Once the Coordinator approves it, the PendingAccount becomes one of the three types of Account, and can then be used for logging in.

Account is a generalisation representing user accounts. This branches off to three types of account - Organisation, Coordinator and Student.

Organisations represent either Companies or Academics (distinguished by type). They create AdvertisedPlacements that, once approved by a Coordinator, become visible on the AdvertBoard.

Students are either ordinary Computing Science students, in which case they can only view adverts, or (Electronic) Software Engineering students, which can also apply to the placements that are visible on the Advert Board.

Students can secure placements, either from the ones visible on the AdvertBoard, or from external sources. Coordinators need to approve the securing of placements.

4 Use Case Descriptions

This section describes the key features which are required for the system. These can be broken into four categories as follows:

- **Utilities / Account Management**
  - Login
  - Account Creation
  - Company Account Creation

  Coordinator Administration
  - Advert Approval
  - Mark placements as filled

  Advert Submission
  - Submission of adverts by organisations
  - Submission of external placements by students

  Advert viewing and applications
  - Viewing of adverts
  - Application for placement through system
  - Notification of successfully securing a placement

4.1 Utilities / Account Management

Use case	Login
Description	User logs in to system to be recognised and allow them to perform role specific actions
Rationale	Identified a need for different classes of user to have a different range of functionality presented. For example only the coordinator should be able to approve adverts.
Priority	Must Have
Actors	All
Extensions	
Includes	
Conditions	**pre** user must have an account created in the system
Non-Functional Requirements	Email details when details are lost.
Scenarios	• **Primary:** Mark enters his username and password into the corresponding fields and selects login. He is logged into the system successfully. • **Alternate 1:** Ross makes a typing mistake whilst entering his password and attempts to login. The system reports this error and prompts him to reenter his password. • **Alternate 2:** Craig wishes to login to the system but has forgotten his details. He chooses to have his password sent to him. He enters his email to which the account is registered and selects send. Using the details emailed to him he successfully logs in.
Risks	
User Interface	Username/Password input fields

Use case	Account Creation
Description	It must be possibe to create accounts on the system for all users. SE/ESE students have accounts created automatically.
Rationale	To interact on an individual basis with the system, it must have some way of telling who is using it
Priority	Must Have
Status	Not Implemented
Actors	Course Co-ordinator
Extensions	Company Account Creation
Includes	
Conditions	**pre** Account ID does not already exist **post** Account now present on system
Non-Functional Requirements	• Security • Graphical User Interface • Account details are editable
Scenarios	• **Primary:** Course Co-Ordinator creates an account for a student • **Alternative 1:** Automatic Enrollment for SE/ESE Students • **Alternative 2:** Course Co-Ordinator creates an account for a company
Risks	Account created with incorrect details
User Interface	A field based input for each value required

Use case	Company Account Creation
Description	A Company has an account, which allows them to submit adverts directly to the system for approval. It also allows students applications to be forwarded directly.
Rationale	This saves the course co-ordinator time, since he does not have to manually enter each advert. It also means applications reach the companies more quickly.
Priority	Should Have
Actors Organisation	Coordinator
Extensions	
Includes	
Conditions	
Non-Functional Requirements	
Scenarios	• **Primary:** A Company Submits an advert to the system • **Alternate 1:** A Student submits an application to an advert. This is then sent to the company who placed it directly.
Risks	This removes the ability for the couse co-ordinator to moderate students applications
User Interface	

4.2 Coordinator Administration

Use case	Advert Approval
Description	The advert approval use case changes the status of an advert to approved ready to inform course students
Rationale	Course coordinator needs to be able to assess advert to be visible for course coordinator
Priority	Must Have
Status	Not Implemented
Actors	Coordinator
Extensions	Email approved adverts to students
Includes	• Login • Viewing of adverts
Conditions	**pre** Advert must exist **post** Advert is marked as approved and becomes viewable to students.
Non-Functional Requirements	Prompt for confirm before approving advert
Scenarios	**Primary:** John logs in and search for unapproved adverts on the advert board. He determines whether the advert is suitable for the course. Then, he marks the advert as approved. **Alternate 1:** Kate logs in and search for unapproved adverts. Then she accidentally click approve advert without determining the purpose of the course carefully.
Risks	Advert may be accidentally approved before editing is complete or when advert is unsuitable.
User Interface	

Use case	Mark placements as filled
Description	User logs in to system and moves to view the advert board. They select their target application and mark it as taken by a student.
Rationale	There is obviously a need to communicate that a placement has been successfully filled so that other students dont waste their time making applications to it. However the client requested that in this situation the advert should not be removed, in case the placement becomes available again.
Priority	Should Have
Actors	Coordinator
Extensions	
Includes	Viewing of Adverts
Conditions	**pre** an advert exists for a placement which a student has filled **post** this advert is marked as taken
Non-Functional Requirements	Persistence of advert after marking it as filled
Scenarios	• **Primary:** Valerie logs in and has a placement she wishes to mark as fulfilled by a student. She scrolls through the advert board until she finds the advert, selects in and chooses an option to mark it as taken. • **Alternate 1:** Margaret logs in and searches the advert board for a placement she wishes to mark as taken. She mistakenly selects the wrong placement and proceed to mark it as taken. Upon realising her mistake, she reselects the advert and chooses to reopen the advert for submissions.
Risks	User could mistakenly mark an advert as taken and leave the system, making the advert appear closed to students (and therfore most likely leave a taken advert marked as unfulfilled), failing to notice their mistake.
User Interface	

4.3 Advert Submission

Use case	Submission of adverts by organisation
Description	Companies, and academics in the university need to be able to submit advertisments for internships. This allows an organisation to submit an advertisement for an internship without emailing the course coordinator directly.
Rationale	This is a core feature of the system. It was originally specified in the business case
Priority	Must Have
Status	Not Implemented
Actors	Organisation
Extensions	
Includes	Login
Conditions	**pre** The organisation must have already obtained a login for the system. The organisation must be logged in. **post** The advert is queued to be reviewed by the course coordinator before being visible to the users of the system
Non-Functional Requirements	Structured input form
Scenarios	**Primary:** Apple Inc. logs in successfully. They select the Submit Advertisement menu item and are taken to the correct page. They fill in all fields and click the Confirm button at the bottom of the page. A confirmation is displayed saying that the advert submission was successful. **Alternate 1:** Dr. Jones logs in successfully. He selects the Submit Advertisement menu item and is taken to the correct page. He enters details in the fields and clicks Confirm. An error message is displayed saying that not all fields have been filled out. Dr. Jones fill in the missing fields and clicks Confirm again. A confirmation is displayed saying the advert submission was successful.
Risks	
User Interface	

Use case	Submission of external placement by SE/ESE student
Description	An SE/ESE student submits an advertisement for an internship not already advertised on system
Rationale	An SE/ESE student must get an internship approved by submitting the internship details
Priority	Should Have
Actors	Student
Extensions	
Includes	Login
Conditions	**pre** The student must have already obtained a login for the system (by automatic assignment or from the course coordinator). The student must be logged in. **post** The advert is queued to be reviewed by the course coordinator
Non-Functional Requirements	Structured input form
Scenarios	**Primary:** Barry wants to submit an advert to be reviewed. He logs in to the system, clicks the submit advert button under the review section and fills in the details. It gives him a message confirming of success.
Risks	
User Interface	

4.4 Advert viewing and applications

Use case	Viewing of Adverts
Description	All users of the system must be able to view the advert board to review adverts. This may only show a subset of the all adverts depending on the users status
Rationale	Fundamental to system description. Initial need specified in business case and exact method for viewing adverts elaborated in client interviews
Priority	Must Have
Status	Not Implemented
Actors	• Organisation • Student • Coordinator
Extensions	
Includes	Login
Conditions	None
Non-Functional Requirements	
Scenarios	**Primary:** John logs in and attempts to find a suitable placement on the advert board. He scrolls down through the advert board until he finds a suitable placement, or there are no adverts left to view. He closes the interface.
Risks	
User Interface	

Use case	Application for placement through system
Description	User logs in and finds the advert they wish to apply for. They click onto the advert and select the option to apply through the system. They are presented with an interface through which they make their submission using their details and being allowed to attach any additional information. They then submit the application
Rationale	Some smaller companies may not have their own application process so in this scenario, the client has expressed a preference for applications to be handled through the system.
Priority	Should Have
Status	Not Implemented
Actors	Student
Extensions	
Includes	Viewing of Adverts
Conditions	**post** application has been submitted and made visible to company
Non-Functional Requirements	Structured input form
Scenarios	• **Primary:** Karl wishes to submit an application for an advert a friend told him about. He finds the advert on the board and chooses to submit an application. He enters all relevant extra data and sends off the application. He exits the system. • **Alternate 1:** Ian selects an advert and chooses to submit an application. When prompted to enter any extra details he accidentally clicks send. He is prompted to confirm he wishes to submit the application. Thanks to this warning he recovers the error and enters data. He submits the application
Risks	Student could send away incomplete or erroneous applications accidentally. No method exists to retrieve/edit such an application
User Interface	

Use case	Notification of successfully securing a placement
Description	User logs in and chooses the relevant placement. He chooses to submit a message that he has been accepted for the placement. He includes any relevant info and sends the message.
Rationale	Course coordinator must ensure that every course student has their work placement.
Priority	Should Have
Actors	Student
Extensions	
Includes	Login
Conditions	**pre** - Advert must exist **pre** - Advert must be approved by course coordinator **pre** - Organisation has to secure the placement position for student **post** - course student's status is marked as secure
Non-Functional Requirements	
Scenarios	**Primary:** Andrew logs in and look for desirable and approved advert. He clicks on secure the placement button and sends an email about the selected placement to course coordinator.**Alternate 1:** Margaret logs in and select desirable advert but she cannot click on secure the placement button because the organisation she applies for has not accepted her position.
Risks	It may take time for the organisation to secure student's position.
User Interface	

5 Non Functional Requirements

No non functional requirements for the system as a whole have been identified to date. This should be a priority in the next requirements gathering phase.

6 Summary

A Glossary

B Scenarios

C Stakeholder Interview Documentation

These documents are available in our team repository:

- Client interview questions
- Interview audio recording
- Client consent form