## 1.1 Fact Finding

1. Describe the fact-finding techniques you would use to identify the important facts required to develop the database.

The requirements will be gathered through documented information received from the Research Higher Degree Admissions officer as well attained through follow up meetings and via FLO discussion boards to clarify any issues or attain more detailed information on some areas.

This is anticipated that there will be an opportunity for the users/customers to refine their understanding of the requirements as more implementation ideas and details are presented to them by our group and others. The users/customers in this case are Associate Professor Paul Calder as the Director of Higher Research Degree Studies in CSEM and Dr Denise de Vries as a member of staff who also responds to many unsolicited enquiries about HRD.

The Flinders University Office of Graduate Research accepts form-based applications (<http://www.flinders.edu.au/graduate-research/future-students/how-to-apply.cfm>) that all successful HRD applicants have to go through. The requirements of this existing system can be used to help define the checklist of documents and other outputs of our new system.

This system will have to store information about areas of research. There is an existing scheme in use in academia in Australia called the Field of Research codes. This system is available at this Bureau of statistics website: <http://www.abs.gov.au/Ausstats/abs@.nsf/Latestproducts/6BB427AB9696C225CA2574180004463E?opendocument>. Flinders University staff web pages contain examples of how academics describe their research interests. The website <http://www.flinders.edu.au/graduate-research/find-a-supervisor.cfm> demonstrates how areas of research can be mapped to potential academic supervisors.

The CSEM school website shows the list of RHD awards they run.

1. What does the application do?

*To create a Database university staff use to track research higher degree applications at an early stage, i.e. before the applications are managed by the more formalised form-based system run by the Office of Graduate Research. The project is limited to the creation of a usable full functional database that can be accessed through the command line. No Graphical User interface GUI, will be required for this stage of development. However initial requirements are hinting towards a integrated addon to email clients (e.g. Microsoft Outlook).*

1. Create an appropriate mission statement for the database system.

To create a Database that will facilitate in the submission of research higher degree applications for which there does not currently exist any formal data storage mechanism. The Database will represent the data relationship required and meet the needs of the Research Higher Degree Admissions office.

To support CSEM staff working together to quickly select and guide high-quality Research Higher Degree applications from initial, direct, informal contact to the formal university RHD application process.

1. Create a diagram to represent the scope and boundaries of the database system.

Web page - Application entered (online?/Email?) using a predefined form

Web page - Application tested for consistence/form

Email - Automated notification that the application has been received and its current status

* Following

DB:

Application submitted/added

Application reviewed/viewed/downloaded

Application Approved Application not approved

Application removed

Application details emailed to a potential supervisor through trigger

Application accepted by supervisor by email notification (as primary s

Applicant notified of acceptance

External systems to the DB

Current students enrolled

The uni’s form-based RHD application system - applications that have got to the stage of using the formal system should have a pointer to that record in that system

Checking to see if a record has already been created for a given applicant/application should be part of the wider DB application. First/surname can be confused in some language/cultural groups; multiple email addresses could be used; postal address may not be known at the time a record needs to be created.

1. Who are the target users and audience?

The Database is intended to be used by the Research Higher Degree Admissions Office and possible by applicants wanting to check their application status (yet to be confirmed)

Any member of CSEM staff may receive initial contact from a potential RHD applicant. Thus, any member of CSEM staff will be able to create an applicant record, including searching for any existing potential duplicate record.

Any member of CSEM staff may then pursue any application, recording more information about the applicant and correspondences with the applicant.

Any member of CSEM academic staff will need to be able to

The CSEM Higher

1. Define the user views required.

Applicant:

Single Application status (viewed by the applicant - online maybe)

Admin Officer:

Check/lookup a applicant by name – get details

Append application to applicant

Create a new applicant & application

Review applicants

Download application

Change application status

Database Admin:

Remove expired applications

Remove old applicants

Professional Staff:

Create a new application

Search all existing applications & applicants

to prevent creating duplicates

to view/update existing applications

Get the current status and most recent changes to an application

Retrieve documents associated with applications

Attach and describe new documents to existing applications

Record notes about correspondences and other comments, including name of the responsible officer, date and time

Generate outbound correspondence (acknowledgement/RFI) appropriate to a particular applicant

View a checklist of the recorded and outstanding information require of an application

Hand-over the management of particular applications to other members of staff

Have visibility of sharing management of applications

Record status descriptors (ongoing, terminated, elevated) and other decisions made about applications, including who was involved in reaching and recording the decision, reasons, and a timestamp.

Academic Staff:

All the functions of the Professional Staff view

Receive notifications of new applications that have matching research field keywords.

Register as an interested potential supervisor

RHD Studies Staff:

All the functions of the Professional Staff views

Report statistics on the number of applications being actively managed and their status

Report statistics on the speed of processing RHD applications, to help decide if the system is meeting performance requirements

## 1.2 Requirements Collection and Analysis

1. ~~Find out more about the requirements. For example, what type of decisions will be made? What are some of the outcomes? Should these be able to be added or is there an already known finite number? What format will all these data have? Ensure that ALL the requirements are included in the specification.~~

GENERAL REQUIREMENTS

- To be able to handle a wide range of file types (doc, pdf, odt, jpg, gif, png and others)

- store the following information

* Applicant details
* proposal
* CV
* Scholarship info (+state) / Financial guarantee declaration
* Transcripts & TOEFL results
* Books, Thesis’s, journals and conference papers
* Passport, citizen ship, right to study etc.
* Applicant correspondences (time replied by who)
* Other

- files are not stored in the database but rather a folder on a server is used to store the files.

Specific Requirements

* Add an applicant
* Edit/update an applicant’s information
* Remove an applicant
* Add an application
  + Include append an application to existing applicant
* Edit/Update an application
* Remove an application
* Change an applications status
* Lookup an applicant
* Download an application or part thereof.
* View applicant status reports
* View an application
* Remove all outdated applications
* Remove all old applicants say older than 3 years

Information checklist:

* Full name
* Date of birth
* Flinders Uni student ID if applicable
* address
* contact details
  + email
  + phone
* citizenship details
  + Au citizen; NZ citizen; perm. resi. Au; temp. visa; none of above
  + country of birth
  + year of entry into Au if applicable
  + passport scan
* visa / right to study details
* sex
* CV
* publications
* academic transcripts / degrees completed
  + name
  + institution
  + year
  + info about current/previous enrolments in RHD
* areas of research
* award sought (MSc, PhD etc)
  + [Doctor of Philosophy](http://www.flinders.edu.au/calendar/vol2/pg/PhD.htm), [Master of Engineering](http://www.flinders.edu.au/calendar/vol2/pg/M%28Res%29.htm), [Master of Science](http://www.flinders.edu.au/calendar/vol2/pg/M%28Res%29.htm) (Computer Science), [Master of Science](http://www.flinders.edu.au/calendar/vol2/pg/M%28Res%29.htm) (Mathematics).
* research proposal (~500 words)
* proposed date of commencement
* part-time/full-time
* internal/external
* funding details
  + scholarship
  + financial guarantee
* GPA
  + standardised or at least fully described
  + <http://en.wikipedia.org/wiki/GPA>
  + <http://en.wikipedia.org/wiki/Academic_grading_in_Australia#Grade_point_average>
* English language proficiency
  + IELTS/TOEFL
  + main language spoken at home
* Contact details for ~2 academic referees
  + Name, position, address, email

All these could progress though a certainty ranking:

* unknown/unstated
* stated
* official document image provided in LOTE
* either:
  + official document image provided in English, or
  + approved translation of official document provided

Areas of research:

* FoR codes
* Academic personal website lists
* Dynamic keywords?

Decisions taken

|  |  |  |
| --- | --- | --- |
| Is this an application worth pursuing? | Yes | Ongoing |
|  | No | Terminated |
| Who are the most likely principle / associate supervisors? | At least one potential supervisor | Ongoing - assigned |
|  | No known potential supervisors | Ongoing - unassigned |
| Are any applicants currently waiting a response from the university / school? | Yes | Stalled - school’s move |
|  | No | Ongoing |
| Has the applicant taken too long to respond to our most recent request? | Yes | Stalled - applicant’s move |
|  | No | Ongoing |
| Has the applicant provided all the information we require? | Yes | Issue request to begin Office of Graduate Research formal application |
|  | No | Issue request for information (from template letter) |
| Has the applicant started a formal application with the Office of Graduate Research? | Yes | Elevated |
|  | No | Pending formal application |
| Who should be notified about a new/changed application? |  |  |
|  |  |  |

## 1.3 Database Design

At each step of Database design, produce the appropriate documentation.

### 1.3.1 Conceptual Design - update the conceptual design

1. Identify entity types

Applicant

Application (basic details + status)

Applicant degree

Application proposal ~~included in application~~

~~Applicant competencies (most relevant work history)~~ included in files

Supervisor

Research Area

1. Identify relationship types

Applicant has

One or more degrees

One or more proposals

One or more competencies

Three to six research areas

Zero to two preferred supervisors

Zero or more signed on supervisors

A supervisor has

One or more applicants

One or more research areas

1. Identify and associate attributes with entity or relationship types
2. Determine attribute domains
3. Determine candidate, primary, and alternate key attributes
4. Use enhanced modelling concepts
5. Check model for errors and redundancy
6. Validate conceptual model against user transactions
7. Develop draft test plan
8. Review conceptual data model