ATAR Calculator

Project Charter

Jonathan Hein, Sean Ackerley, Declan Holmes

Project Charter

Purpose

This document is intended to inform its reader as to the requirements, design and testing to be undertaken in the 'ATAR Calculator' project. This document details the needs, scope, justification and resources for this project.

The audience intended for this charter is the project sponsor, stakeholders and senior leadership.

Project Objectives

The proposed 'ATAR Calculator' project aims to provide a stream line, easy to use interface for the mapping of HSC raw scores to an ATAR score. Further it will display to the user all available tertiary courses available to them with their current ATAR score.

To meet this end, the project will utilize HTML, Java, Javascript, PHP and MySQL. It is intended for the products output in the process of this project to be hosted on an external webhost.

The project intends to deliver its solution within the space of 13 weeks.

The objectives for the project are detailed as follows:

- The solution will provide:
    - An easy to use web page as a user interface.
    - A means to calculate an ATAR score from input class raw scores.
    - A means to populate a database table with currently offered courses in the state of Victoria, Australia.
- The solution will be:
    - Efficient.
    - Bug free.
    - Maintainable.

Boundaries:

The solution will:

- Allow for up to 8 assessable subjects to be entered for calculation of an ATAR score.
- Calculate a scaled score for each entered high school/higher education/VET subject raw score entered.

- Ensure at least one, and at most two English subjects are used in the calculation of an ATAR score.
- Ensure at most two mathematics subjects are used in the calculation of an ATAR score.
- Present those courses available for a given ATAR score.
- Allow users to refine the courses presented to them.
- Display correctly on desktop and mobile devices.

High Level Requirements

1	Delivered solution provides an efficient means for the calculating an ATAR score.
2	Delivered solution is bug free.
3	Delivered solution utilizes a simple to use and navigate web page interface for users to interact with.
4	A means must be provided for the populating of relevant database tables necessary for the function of the calculator.
5	Adequate support documents for the use and maintenance and operation of the solution delivered.

Major Deliverables

Manuals	Documentation pertaining to the use and maintenance of the provided project solution.
Software	Functional software for the population of database tables and calculation of ATAR scores.
Webpages	Webpage user interface that allows a user to calculate their ATAR score and retrieve a list of courses available to them with their ATAR score.
Webserver	The webserver used to house the database and serve the webpage interface.

Duration

Project Plan	**10 days**	**Mon 16/03/15**	**Fri 27/03/15**	
Inception	**7 days**	**Mon 16/03/15**	**Tue 24/03/15**	
Project Begin	0 days	Mon 16/03/15	Mon 16/03/15	
Requirements Gathering	7 days	Mon 16/03/15	Tue 24/03/15	3
Elaboration	**7 days**	**Mon 16/03/15**	**Tue 24/03/15**	**3**
Communication Planning	7 days	Mon 16/03/15	Tue 24/03/15	3
Construction	**7 days**	**Wed 18/03/15**	**Thu 26/03/15**	**3**
Create Documentation	7 days	Mon 16/03/15	Tue 24/03/15	3
Transition	**4 days**	**Tue 24/03/15**	**Fri 27/03/15**	**3**
Documentation Review	4 days	Tue 24/03/15	Fri 27/03/15	3
Project Plan Phase Finish	0 days	Fri 27/03/15	Fri 27/03/15	10
Website	**49 days**	**Sat 28/03/15**	**Thu 4/06/15**	**11**
Inception	**2 days**	**Sat 28/03/15**	**Mon 30/03/15**	**11**
Website Design Begin	0 days	Sat 28/03/15	Sat 28/03/15	11
Identify Scope	2 days	Sat 28/03/15	Mon 30/03/15	14
Elaboration	**14 days**	**Tue 31/03/15**	**Fri 17/04/15**	**15**
Website Design	**14 days**	**Tue 31/03/15**	**Fri 17/04/15**	**15**
Front-End	14 days	Tue 31/03/15	Fri 17/04/15	15
Back-End	14 days	Tue 31/03/15	Fri 17/04/15	15
Reviewing	14 days	Tue 31/03/15	Fri 17/04/15	15
Design Stage Complete	0 days	Fri 17/04/15	Fri 17/04/15	18,19,20
Construction	**33 days**	**Mon 20/04/15**	**Thu 4/06/15**	**21**
Development Begin	0 days	Mon 20/04/15	Mon 20/04/15	21
Development	**33 days**	**Mon 20/04/15**	**Wed 3/06/15**	**23**
Front-End	33 days	Mon 20/04/15	Wed 3/06/15	23
Back-End	33 days	Mon 20/04/15	Wed 3/06/15	23
Testing	33 days	Mon 20/04/15	Wed 3/06/15	23
Development Stage Complete	0 days	Thu 4/06/15	Thu 4/06/15	25,26,27
Transition	**0 days**	**Thu 4/06/15**	**Thu 4/06/15**	**28**
Website Launched	0 days	Thu 4/06/15	Thu 4/06/15	28
Website Doc Finished	0 days	Thu 4/06/15	Thu 4/06/15	28
Project Closure	**3 days**	**Thu 4/06/15**	**Mon 8/06/15**	**31**
Inception	**1 day**	**Thu 4/06/15**	**Thu 4/06/15**	
Closure Meeting	1 day	Thu 4/06/15	Thu 4/06/15	31
Elaboration	**1 day**	**Fri 5/06/15**	**Fri 5/06/15**	
Project Summarising	1 day	Fri 5/06/15	Fri 5/06/15	34
Construction	**1 day**	**Mon 8/06/15**	**Mon 8/06/15**	
Finalise Documentation	1 day	Mon 8/06/15	Mon 8/06/15	36
Transition	**0 days**	**Mon 8/06/15**	**Mon 8/06/15**	
Project Closure	0 days	Mon 8/06/15	Mon 8/06/15	38

Failure Mode and Effect Analysis

Purpose of Document: To present analysis of potential risks and failures.

Mode: How the risk will present itself

Effect: The effect the risk will have

Contingency Plan: The contingency for the event of the risk

Severity: How severe the risk is

Likelihood: How likely the risk is to occur

Detection: How detectable the risk is

Score: Points indicating overall priority by multiplying Severity, Likelihood, and Detection

Failure Mode and Effect Analysis						
Mode	Effect	Contingency Plan	Severity	Likelihood	Detection	Score
Scope Creep	Scope becomes out of control	Establish scope early and carefully consider features	8	3	7	210
Documentation Loss	Causes delays	Usage of Google Drive to centralize and secure documentation	9	2	4	72
Hardware failure	Delays development of project	Usage of university computer resources	5	5	10	250
Insufficient Documentation	Fails major deliverable	Ensure documentation reviews	10	3	0	0
AWS goes down	Prevents progress	Contact the project supervisor and team, discuss options	10	3	10	300
Team member illness	Causes delays/prevents progress	Contact project supervisor and team, discuss options	8	5	10	400
Loss of code	Severely delays project	Maintain backups of code	10	2	5	100
Software failure	Delays development of project	Focus team on correcting issue	7	5	5	175

Risks & Contingencies

Risk	Contingency
Project team member falls ill.	Assess the likely period of which the team member in question will be unable to contribute at full capacity and delegate said team members work load to others as necessary.
It becomes clear that the requirements were initially misunderstood/misinterpreted.	Conduct meeting with product owner to ensure requirements are properly understood by all members of the project team. Create additional requirements documentation.
It is clear the project is unable to see completion within its established time frame.	Bring the project and its generated solution to a stable state, document adequately and prepare for it to be under taken by another team.
Lack of developers with knowledge of scripting languages (PHP, JavaScript etc.).	Acquire necessary training resources, and schedule time to bring the project team members up to speed.
Lack of developers with knowledge in MySQL.	Acquire necessary training resources, and schedule time to bring the project team members up to speed.
Project requirements change to such an extent that the project is no longer achievable given the current schedule.	Discuss and negotiate with the product owner with an emphasis on clarifying what the most important aspects of the given requirements are and find a solution that can be achieved within the given schedule.
Project team member is rendered unable to work due to their workstation breaking down.	Investigate an alternative workstation for the duration that the project members' workstation is down.

Stakeholders

- Product owner: Adam Ward
- Supervisor: Falk Scholer
- End users
- Project team:
    - Declan Holmes
    - Sean Ackerley
    - Jonathan Hein

ATAR CALCULATOR SYSTEM DESIGN DOCUMENT

1 Purpose and Scope

This design document will detail the system overview and design of the ATAR Calculator software application.

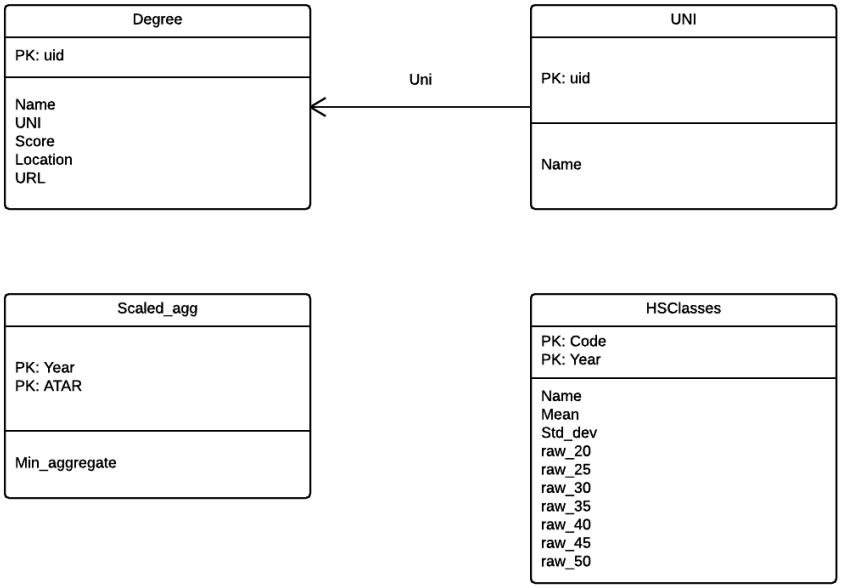
1.1 Project Executive Summary

The ATAR Calculator software application will provide a simple interface for a user of any level of technology comprehension to calculate an ATAR score and find university programs that their ATAR qualifies for.

1.2 System Software Design

The software application is a very small-scale project. It utilizes PHP, Javascript, and CSS with a simple mySQL database directory contained within the main directory.

2 FILE AND DATABASE DESIGN



TEST PLAN

Author: Declan Holmes, Sean Ackerley, Jonathan Hein

Scope

This test plan identifies and describes the tests for the developed solution for the 'ATAR Calculator project'.

The following modules will be tested:

- MySQL database
- ATAR calculation
- Web page interface
- Course retrieval program

The most critical performance measures are as listed:

- Response time for ATAR to be calculated and course listing to be returned.
- Response time for Course retrieval program to complete.

Requirements for test

The following lists what will be tested:

- Database integrity tests
    - Verify accessibility to MySQL.
    - Verify data in database correctly reflects the courses listed on the VTAC website.
    - Verify data is retrieved correctly from the database.
- User interface tests
    - Verify website interface is stream line and intuitive to use.
- Performance tests
    - Verify ATAR calculation response time falls within expected limits.
    - Verify Course retrieval program response time falls within expected limits.
- Function tests
    - ATAR scaled score is correctly calculated.
    - ATAR aggregated score is calculated with the following business rules:
        - At least one subject must be an English subject.
        - At most, two English subjects can be used in the calculation of ATAR score.
        - At most, two math subjects can be used in the calculation of ATAR score.

- The top five entered subjects and English subject will make up the ATAR score.

Test Strategy

Test Objective: Verify accessibility to MySQL database server. **Technique:** Attempt to access the database through both the myadminphp interface and directly through a terminal session. **Completion Criteria:** The database is accessible by both the above mentioned methods.
Test Objective: Verify data entries in the courses table of the database correctly reflect the courses listed on the VTAC website. **Technique:** Perform a side by side comparison of the data populating the courses table against the courses listed on the VTAC website. **Completion Criteria:** The data residing in the courses table correctly reflects the courses listed on the VTAC website.
Test Objective: Verify the integrity of the information retrieved from the database to be presented on the ATAR calculator project web page interface. **Technique:** Test each section of the web page interface that presents information residing in the database with varying arguments (if the query for that section requires them). **Completion Criteria:** Information is correctly represented on the web page interface by comparison to its relative entry in the database.

Test Objective:
Ensure web page user interface is intuitive to use.

Technique:
Compare web page presentation to industry standards.
Test with user unfamiliar to the project.

Completion Criteria:
Web page interface conforms to industry standards.
Test users transaction time falls within expectations.

Test Objective:
Verify ATAR calculation response time falls within expectations.

Technique:
Complete web page interface form and time response.

Completion Criteria:
ATAR calculation response time is below the maximum limit specified.

Test Objective:
Verify course retrieval program response time falls within expectations.

Technique:
Time the programs run-time from beginning to end.

Completion Criteria:
Course retrieval program response time is below the maximum limit specified.

Test Cases

Authors: Declan Holmes, Sean Ackerley, Jonathan Hein

1.

Module Name: MySQL database	Design Date: 26/5/2015	Execution Date: 26/5/2015	Test Title: Database access	Tested By: Declan Holmes

Test Description:

The objective of this test is to test the accessibility of the database necessary to the function of the developed solution.

Pre-conditions:

- MySQL database is deployed on server.
- myPHPAdmin is configured on server.

Test Steps:

MyPHPAdmin Access:

1. Navigate to the myPHPAdmin browser interface.
2. Input login information.
3. Attempt to access database.

Terminal Session:

1. Open terminal session to hosting server.
2. Check for responsivity with the MySQL server.

Expected Results:

Upon the input of correct credentials, access is granted to the user for the database.

Actual Results:

As expected, upon the input of the correct credentials, access was granted to the database by means of both the above two methods.

2.

Module Name: MySQL database	Design Date: 26/5/2015	Execution Date: 26/5/2015	Test Title: Courses table against VTAC courses	Tested By: Declan Holmes

Test Description:

This test aims to verify the correctness of data residing in the courses table against those listed on the VTAC website (the source from which the data entries are taken.).

Preconditions:

- Test 1 has been completed successfully.

Test Steps:

1. Open database table 'Courses'.
2. Navigate in browser to VTAC course list.
3. For the first 100, middle 100 and last 100 courses in the 'Courses' table:
    a. Course name
    b. Course institution
    c. Course URL
    d. Course location
    e. Course ATAR requirement

    Against its relative entry in the VTAC course list.

Expected Results:

Every target course listed in the database table correctly reflects their relative entry in the ATAR course list.

Actual Results:

Every target course listed in the database table correctly reflects their relative entry in the ATAR course list.

3.

Module Name: MySQL database/ Web page	Design Date: 26/5/2015	Execution Date: 26/5/2015	Test Title: Database access Integrity HS	Tested By: Declan Holmes

Test Description:

This test is designed with the intention of verifying the correctness of data retrieved from the 'HSClasses' table when accessed from the web page interface.

Pre-conditions:

Test 1.

Test Steps:

1. Open database connection.
2. Open 'HSClasses' table residing on database.
3. Navigate by browser to ATAR calculator web page.
4. For each subject drop down box displayed on the ATAR calculator page, verify that all entries in the 'HSClasses' table are present.

Expected Results:

All entries in the 'HSClasses' table are presented correctly in the drop down boxes presented on the ATAR Calculator web page.

Actual Results:

All entries in the 'HSClasses' table are presented correctly in the drop down boxes presented on the ATAR Calculator web page.

4.

Module Name: Web page	Design Date: 26/5/2015	Execution Date: 26/5/2015	Test Title: Webpage accessibility	Tested By: Declan Holmes

Test Description:

Test for compliance of web page accessibility against ARIA specifications for keyboard navigation and image string association.

Test Steps:

1. Navigate to ATAR Calculator web page interface.
2. Test for keyboard navigation by means of tabbing.
3. Test for images on site having alternative string values.

Expected Results:

Navigation by keyboard is supported as well as alternative text for images embedded in the site page.

Actual Results:

Navigation by keyboard is supported as well as alternative text for images embedded in the site page.

5.

Module Name: Web page	Design Date: 26/5/2015	Execution Date: 26/5/2015	Test Title: Webpage accessibility	Tested By: Declan Holmes

Test Description:

This test is to determine whether the ATAR calculation falls within the expected threshold of 1.5 seconds.

Test Steps:

1. Navigate to ATAR Calculator web page interface.
2. Select any subject from any of the drop down boxes displayed.
3. Enter a score into the drop down boxes corresponding score field.
4. Examine the time taken to calculate the ATAR.

Expected Results:

ATAR calculation falls within the expected threshold of 1.5 seconds.

Actual Results:

ATAR calculation falls within the expected threshold of 1.5 seconds.

6.

Module Name: Web page	Design Date: 26/5/2015	Execution Date: 26/5/2015	Test Title: Webpage accessibility	Tested By: Declan Holmes

Test Description:

This test is to determine whether the program for populating the courses table in the database run-time falls within the expected threshold of 1.5 seconds.

Test Steps:

1. Execute CoursesUpdatev*.jar on the server that houses the database.
2. Examine the time taken for it to complete.

Expected Results:

Program run-time falls within the expected threshold of 5 minutes.

Actual Results:

Program run-time falls within the expected threshold of 5 minutes.

7.

Module Name: Display tablet/ Web page	Design Date: 26/5/2015	Execution Date: 26/5/2015	Test Title: Display on tablet device	Tested By: Declan Holmes

Test Description:

This test is designed with the intention of verifying that the solution to the ATAR calculator project displays correctly on tablet devices.

Pre-conditions:

All previous tests.

Test Steps:

1. Open page on apple ipad.
2. Examine integrity of webpage.

Expected Results:

ATAR calculator displays correctly on apple ipad device.

Actual Results:

ATAR calculator displays as intended on ipad device.

8.

Module Name: Display mobile/ Web page	Design Date: 21/6/2015	Execution Date: 21/6/2015	Test Title: Display on mobile device	Tested By: Declan Holmes

Test Description:

This test is designed with the intention of verifying that the solution to the ATAR calculator project displays correctly on mobile devices.

Environment:

Apple IPhone.

Pre-conditions:

Test 1.

Test Steps:

1. Open page on apple iPhone.
2. Examine integrity of webpage.

Expected Results:

ATAR calculator displays correctly on apple iPhone device.

Actual Results:

ATAR calculator displays as intended on iPhone device ONLY if held in the sideways positon, that is to say, the ATAR calculator webpage will not display as intended on a mobile device if held in the horizontal position.

9.

Module Name: English subjects/ ATAR Calc	Design Date: 21/6/2015	Execution Date: 21/6/2015	Test Title: Max/Min English	Tested By: Declan Holmes

Test Description:

This test is designed with the intention of verifying that the calculation of an ATAR on the ATAR calculator webpage ensures that at least one and at most two English subjects are entered.

Pre-conditions:

Test 1.

Test Steps:

1. Open ATAR calculator in browser.
2. Try to calculate an ATAR with zero English subjects as inputs.
3. Try to calculate an ATAR with more than two English subjects as inputs.

Expected Results:

The ATAR calculator will not calculate an ATAR if zero English subjects have been entered.

The ATAR calculator will only consider the two highest English subjects if more than two have been entered.

Actual Results:

The ATAR calculator will not calculate an ATAR if zero English subjects have been entered.

The ATAR calculator will only consider the two highest English subjects if more than two have been entered.

ATAR Calculator Project Peer Review

Student ID: 3342769

Name: Declan Holmes

Legend:

NS - Not Satisfactory

SS - Somewhat Satisfactory

VS - Very Satisfactory

	3356601	3164846
Meetings	vs	vs
Communication	vs	vs
Contribution	vs	vs
Professionalism	vs	vs

ATAR Calculator Project Peer Review

Student ID: s3164846

Name: Jonathan Hein

Legend:

NS - Not Satisfactory

SS - Somewhat Satisfactory

VS - Very Satisfactory

	3342769	3356601
Meetings	vs	vs
Communication	vs	vs
Contribution	vs	vs
Professionalism	vs	vs

ATAR Calculator Project Peer Review

Student ID: s3356601

Name: Sean Ackerley

Legend:

NS - Not Satisfactory

SS - Somewhat Satisfactory

VS - Very Satisfactory

	s3342769	**s3164846**
Meetings	VS	VS
Communication	VS	VS
Contribution	VS	VS
Professionalism	VS	VS