

Student Number:

**Software Development**

**U4O2 SAC**

#### Written Report

#### Interactions and Impact

**DUE DATE**

**Monday 16th September 2019**

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| *Sections* | Pages | Total Marks |
| U4O2 Interactions and Impact Case Study  Assessment Criteria | 2 – 3  4 - 5 | **100** |

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| **Materials**:   * Question book of **5** pages. * Word Processor  Instructions  * Ensure your student name / number are correct. * All written responses must be written in English. |

**Work Placement Case Study 2019**

University of Macquarie Third Year Placement Program for Software Engineering allows students to apply their programming skills in the workplace. The Professional and Community Engagement (PACE) program provides students the chance to gain practical experience while studying. Students can work with one of over 2,500 host organisations to contribute their knowledge, ideas and a fresh perspective to real-world projects, allowing them to learn from leading industry experts. Their contribution will benefit the host organisation and the community it supports. These organisations are also the main employers of Macquarie’s Software Engineering graduates as a result to this program. The PACE program provides students with real world experience so that future employers do not need to train new graduate employees. The PACE program is also assessed in the same way as all other university courses. Participating students can be assessed on a variety of activities such as:

* laboratory practicums
* analysis and design reporting
* community development projects
* quality assurance projects
* smaller software research projects
* team software development

Until now students participating in the PACE program had to take paperwork to their host organization. Often these documents would get misplaced or incorrectly filled in. The paperwork provided the host organisations with the student personal information as well as their enrolment details and their unit results.

The paper work also provided the host organisations with the information about the kinds of tasks the students should be involved in as well as how to assess their progress. Due to issues with this manual documentation process, Macquarie decided to create an online portal for all this information to be collected and stored online.

CSIRO is a host organisation that employs many Software Engineering graduates from Macquarie University. They participate in the PACE Program and many of the graduates of the program go on to be employed at CSIRO. The transition from student to employee can be time consuming as a lot of the information provided at the beginning of the PACE program needs to be re-submitted into the CSIRO Human Resources System (HRS). This delay can impact on project work and getting these new staff members on the pay roll. To be employed by this government organization, each individual must be vetted, their university results checked with their institutions and all paper work (resume, tax declaration form and other agreements) must be completed and submitted to HTS before they can be put on as a full time staff member.

CSIRO staff members must have a Staff ID and a security pass. They have a computer system profile and access to the CSIRO network and an HRS file which monitors each individual’s work leave, pay rate, hours worked, overtime, and tax. The HRS processes salaries and other employment related data.

The PACE Portal is a new initiative by Macquarie University in conjunction with CSIRO to allow PACE students to be able to submit work and access their assessment results from both their university lecturers and their host organisation. As students complete the tasks in the PACE program, their work place supervisors and other administration staff can assess their work and enter their results on the PACE Portal. This can include their attendance on a day to day basis and their involvement with other tasks within the organization. CSIRO’s objective with their involvement in the development and roll out of the Portal is to streamline the appointment process of participating students in the PACE program to full time employees. Macquarie lecturers can design assessment tasks that the PACE work supervisors can assess. With added validation, supervisors in the work place will be able to mark student progress effectively on the portal. The PACE portal is hosted on a web server in the Macquarie University Computer Department.





**THE REPORT**

**Create a report to analyse and explain the dependencies between two information systems and evaluate the controls required in information systems to protect the integrity of its source data.**

**MARKING SCHEME Total: 100 Marks**

1. **Introduction: (10 Marks)**

* Outline the goals and objectives of both systems in the case study. (4 Marks)
* Describe the interactions that occur within System 1. (3 Marks)
* Describe the interactions that occur in System 2. (3 Marks)
* Describe the interactions between the two systems. (3 Marks)

1. **Data Integrity: (16 Marks)**

* (System 1) Describe the impact of reduced data integrity on System 1 and how it can happen (accidental, event-based or intentional). (4 Marks)
* Discuss the data management practices that System 1 should have in place to ensure data integrity. (4 Marks)
* (System 2) Describe the impact of reduced data integrity of System 2 and how it can happen (accidental, event-based or intentional). (4 Marks)
* Discuss the data management practices that System 2 should have in place to ensure data integrity. (4 Marks)

1. **Legislation: (12 Marks)**

* Identify the legislation that relates to this case study (both systems). (4 Marks)
* Describe how each legislation is relevant to the case study. (4 Marks)
* Describe the obligations of the system managers. (4 Marks)

1. **Physical & Logical Controls: (10 Marks)**

* Identify the physical and logical control required to ensure data integrity within this case study. (6 Marks)
* Describe how the interaction between the two systems requires added security. (4 Marks)

1. **Tracing Transaction: (6 Marks)**

* List (1 Mark each) and describe (2 Marks each) the tools and techniques that can trace transaction in both systems

1. **Evaluation: (8 Marks)**

* Describe methods that could be used to critically evaluate the extent that the system objectives are met. (2 Marks per method and 2 Marks for how it can evaluate the system.)

1. **Network Diagram: (8 Marks)**

* Create a network diagram of the interaction between these two systems.

(3 Marks for each of the two systems and 2 Marks for correctly connecting them)

1. **Correct Use of Terminology in each section (10 Marks)**
2. **Correctly identifying all conflicts within the systems (10 Marks)**
3. **Explanations are clear and thorough (5 Marks)**
4. **The document is of a formal format fit-for-purpose (5 Marks)**