



THE UNIVERSITY OF  
WESTERN  
AUSTRALIA

Department of Computer Science and Software Engineering

**SEMESTER 1, 2018 EXAMINATIONS**  
**CITS4407**  
**OPEN SOURCE TOOLS AND SCRIPTING**

FAMILY NAME: \_\_\_\_\_ GIVEN NAMES: \_\_\_\_\_

STUDENT ID: 

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 SIGNATURE: \_\_\_\_\_

This Paper Contains: **4 pages (including title page) and 4 questions**

Time allowed: **2 hours**

**INSTRUCTIONS:**

You are required to attempt all FOUR (4) questions.

Do not write verbose answers to any question.

As a guide, a question worth TEN (10) marks should be answered on at most two pages of your answer booklet.

**PLEASE NOTE**

*Examination candidates may only bring authorised materials into the examination room. If a supervisor finds, during the examination, that you have unauthorised material, in whatever form, in the vicinity of your desk or on your person, whether in the examination room or the toilets or en route to/from the toilets, the matter will be reported to the head of school and disciplinary action will normally be taken against you. This action may result in your being deprived of any credit for this examination or even, in some cases, for the whole unit. This will apply regardless of whether the material has been used at the time it is found.*

*Therefore, any candidate who has brought any unauthorised material whatsoever into the examination room should declare it to the supervisor immediately. Candidates who are uncertain whether any material is authorised should ask the supervisor for clarification.*

*Supervisors Only – Student left at:*

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- 1) With reference to both technical details and personal opinion, write a short reflective essay on the statement:

The Unix-based approach of providing many small utilities, that each perform their individual task well, facilitates a more productive computing environment than one involving large, GUI-driven applications.

(10)

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- 2) With reference to both technical details and personal opinion, write a short reflective essay on the question:

The widespread acceptance of open-source software, has seen its adoption in the business and government sectors, large social media websites, critical utility infrastructure, and the infrastructure of the Internet, itself.

This raises significant concerns about the information security risks related to open source software, primarily because potential adversaries have full access to the source code, and its documentation, being used within an enterprise.

Is such a widespread adoption of open-source software a dangerous thing?

(10)

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- 3) Using a number of example command sequences, explain how *pipes* work in Unix-based systems, and how they are supported by the standard shells.

What benefits do pipes provide in constructing command sequences?

If pipes were unavailable, explain how their use could be simulated using other shell features.

(10)

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- 4) With reference to both technical details and personal opinion, write a short reflective essay on the question:

Most universities worldwide employ open-source software in both their teaching and the operations of their campus-wide information services, often citing the financial benefits of doing so.

However, this is often in contrast to their students' past experiences and future careers, often dominated by the use of proprietary software.

What important ideas and approaches does the teaching of open-source software expose to students, and how are these likely to be employed in a student's future computing-focused career?

Do you believe that universities have a moral obligation to promote the use of open-source software within the computing industry?

(10)

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**END OF PAPER**

SEE OVER