

6 Software and Security Engineering (arb33)

EvaCam is an Internet-enabled camera platform intended for use by consumers to continuously monitor their homes for suspicious activity. EvaCam allows users to view both live and recorded video footage from cameras installed in their homes via a web server. Users can also receive email notifications whenever suspicious activity is detected by an analysis server. You have been hired as an engineering manager to oversee the development and production use of the software running on the camera, the web server and the analysis server. The camera hardware is built by another team, and the web server and analysis server are hosted by a major cloud provider.

- (a) List, with justification, the major technical components of the development environment you would commission to support your team of software engineers. [5 marks]
- (b) Describe a suitable example unit test, integration test and end-to-end test for EvaCam. [3 marks]
- (c) The senior management team demand your developers produce bug-free code and suggest this can be achieved by ensuring 100% code coverage with unit tests. Explain why this goal is unachievable and outline, with justification, an appropriate testing strategy. [7 marks]
- (d) Describe the key differences in any release process you might design for the EvaCam camera, web server and analysis server. [5 marks]