

COSC1112/1114 OSP project 2013 - Self Assessment and Reflection

Learning Objective	Self Assessment (Circle one)	Summary of Evidence (Succinctly Summarize how you met the criteria of your assessment)
<p>1. Design, Develop, test and debug a complex system-level program on a resource constrained device. Use of appropriate development environments, debuggers, unit testing tools and version control tools.</p>	<p style="text-align: center;">Fail</p> <p style="text-align: center;">Marginal</p> <p style="text-align: center;">Adequate</p> <p style="text-align: center;">Good</p> <p style="text-align: center;"><u>Excellent</u></p>	<ul style="list-style-type: none"> • We built a highly complex solution with a lot of intricate parts. It involved computer vision, physical world movement, audio recording and inter-device communication. • We spent a lot of time profiling and adjusting our solution so it would perform well on a resource-constrained device. • We used IDEs (Xcode), text editors (vim), debuggers (lldb) and profilers (Instruments) to optimise our code. • We used git for version control.
<p>2. Explain how computing resources are used by the application software and managed by the software. Analyse the inherent trade-offs in complex system software design.</p>	<p style="text-align: center;">Fail</p> <p style="text-align: center;">Marginal</p> <p style="text-align: center;">Adequate</p> <p style="text-align: center;">Good</p> <p style="text-align: center;"><u>Excellent</u></p>	<ul style="list-style-type: none"> • We developed the software sub-components which were each responsible for manage a single resource. E.g. motion sensor was managed by one component, and camera interaction by another. • We implemented a solution that uses concurrency and synchronization techniques. • We developed a solution that improved performance through memory trade-offs (eg. Copy on write).

<p>3. Construct appropriate diagrams and textual descriptions to communicate a low level system design and how it integrates on of the following key concepts:</p> <p>a. kernel and hardware interaction; b. processes and interprocess communication; c. concurrency and synchronization; d. preemptive and non-preemptive scheduling; e. memory hierarchy, management, and cost-performance trade-offs; f. file system design and implementation; and / or g. system level security h. other (please justify based on lectures)</p>	<p>Fail</p> <p>Marginal</p> <p>Adequate</p> <p>Good</p> <p><u>Excellent</u></p>	<ul style="list-style-type: none"> • We wrote an extremely detailed project specification and final portfolio that detailed the solution through textual descriptions and diagrams. • Hardware diagrams are included in the portfolio and project specification. • Thread communication diagrams are included in the portfolio and project specification. • Text descriptions and code examples are included in the portfolio to cover synchronization. • Text descriptions and code examples are included in the portfolio to cover memory cost-performance trade-offs. • Gantt charts, sequence diagrams, video demonstration, and result tables are included in the portfolio.
<p>4. Describe the full range of considerations for effective and efficient teamwork</p>	<p>Fail</p> <p>Marginal</p> <p>Adequate</p> <p>Good</p> <p><u>Excellent</u></p>	<ul style="list-style-type: none"> • We developed a project plan with weekly deliverables. • Specific roles were assigned to each member based on their skills and abilities. • We sent out weekly emails regarding our current progress. • We kept online development logs so all members could review each other's progress. • We held group meetings to review our project and work on it together. • We shared code on GitHub.

Please answer the following questions, regarding your experiences during the OSP project.

Prompt	Your Response
1. Did you understand the project requirements? If not, what would have improved your level of understanding?	Yes. However judging from the peer demonstrations there was a variety of interpretations within the class of what was expected from the project. Perhaps some precise examples of what last year's class had build would have helped with project selection.
2. What aspects of the project did you enjoy?	I had always been curious how software communicated with hardware. I got a chance to find out how it works with this project. I also enjoyed working on the computer vision.
3. What aspects of the project did you not enjoy?	Paying for the hardware. Our group got carried away and purchased a lot of parts. Individually they weren't expensive, but once you tally everything together it shows we spent a lot.
4. To what degree did the Raspberry Pi project enhanced your knowledge of OSP?	I think it enhanced my knowledge of hardware more than operating systems, but the two are closely related.
5. Did you find that this project prompted you to investigate the OSP learning objectives more thoroughly than you would expect in a standard assignment?	I like put a lot of effort into all my assignments regardless of the delivery. So I will answer 'not really' to this one.
6. Would the use of the Raspberry Pi in this project inspire you to take on similar developments in the future?	I would love to explore robotics with the Pi more. The computer vision and movement was fun – so yes, I guess I would.

7. Were your team members chosen on the basis of friendship, skill, convenience, a combination of some of these, or some other factor(s)?	I had worked with Val previously and wanted to work with him on this project because I knew he had good skills in unix/hardware. We recruited Alfred by sending out a message that we were looking for a hard working postgraduate student.
8. In retrospect, how well do you think the skills of your team members were chosen?	Perfect. We worked really well together.
9. How cohesively did your team work?	We worked really well together.
10. Do you think everyone contributed evenly?	Yes. All members put 100% effort into this project.
11. If the workload was not shared evenly, was this a management issue (i.e. objectives not clearly defined, inefficient allocation of tasks, poor communication, etc) or a team member issue (i.e not willing / capable of contributing, etc)?	N/A
12. As a percentage, what grade do you think your project / portfolio deserves and why?	100% - We treated all aspects of this project with seriousness and professionalism. We endeavoured to exceed expectations with what we delivered in the project and portfolio.
13. What, if anything would you do differently if you were to do this project again?	I would reduce the size of the project so it was more focused on doing less things but better.

14. What, if any improvements could be made to the team selection process?	We found it hard to find a third group member that was willing to work hard for a HD. Perhaps if we the team selection was done online, rather than in labs?
15. What, if any improvements could be made to the availability of resources for the project?	Perhaps some general tutorials on how to use the raspberry pi. Like how to use the GPIO ports and how to draw appropriate power for peripherals without the hardware resetting.
16. What, if any improvements could be made to the prototype demonstration structure?	I would have liked the demonstration to be assessable and count towards he final mark.
17. Do you feel you received sufficient feedback on your project? If not, what type of additional feedback would have been beneficial?	Yes.
18. Do you feel you were treated fairly by staff, team members and other students during the project?	Yes.
19. Overall, how would you rate your experience over the OSP project?	It was a lot of hard work, but the seeing the end product in action was extremely rewarding.
20. Any additional thoughts or comments?	Thanks for making the course interesting.