

4 - Midterm Review - Optional Credit

1. Learning Outcomes

On completion of this lab you will have:

- Reviewed some major theoretical topics and themes from the module

2. Organisation

Please complete the exercises individually.

3. Grading

This worksheet is worth up to 10% of your overall module grade as a optional submission to potentially replace the lowest grade obtained in worksheets 1-3

4. Submission

The deadline for submission is Sunday Apr 15, 2018 @23:59 through Webcourses.

5. Demonstration

No demonstration will be required for this submission.

6. Requirements

For this lab you will need to

- Review the module lecture material on Webcourses

7. Problem Sets

For your lab submission, provide a text document with your answers to the question below

1	Describe the Software Selection Maturity Scale? What is its relationship to technology adoption in the Enterprise?	10 Marks
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2	Compare and contrast the monolithic and SOA models of enterprise application software. Describe the benefits of a SOA composition approach to application construction.	10 Marks
3	Why have enterprises moved towards web technologies for service software construction? What are the principal benefits?	10 Marks
4	What are the advantages and disadvantages of HTTP statelessness as the basis of a service application protocol tier?	10 Marks
5	Describe the architectural constraints of the REST architectural pattern	10 Marks
6	Explain the relationship between resources, models and views? What is meant by view aggregation?	10 Marks
7	Describe the five RESTful operations, giving examples using HTTP. What is meant by idempotence? Mention which of the REST operations are idempotent and why.	10 Marks
8	Explain the problem of failure propagation in SOA systems. What are the desirable characteristics of an API versioning system? What are the two kinds of API compatibility?	10 Marks
9	Describe the major elements of the logical data model. Describe how it abstracts the details of database access in the application tier.	10 Marks
10	Describe in detail the pathology of a SQL injection exploit. What should the application developer to avoid this kind of vulnerability.	10 Marks