University of London

Computing and Information Systems

CO2222 Data communications and enterprise networking

Coursework assignment 2 2019–2020

Introduction

This coursework assignment aims to develop your skills in designing and costing a simple network solution based on a set of requirements.

Learning outcomes

You should be able to:

- turn a set of requirements into a network design
- identify and evaluate potential network solutions
- produce a technical network design.

Tasks

A new provider is planning to enter the cycle hire market in a major city. The service available from the existing provider has become old and dated, and there is an opportunity to compete with them on improved technology and/or price. The new entrant has conducted a user survey and has identified the top four user requirements as:

User Requirements: Easy to locate closest available cycle.
Simple to use.
Flexible methods for payment.
Only pay for actual time the cycle is used.

The new entrant has commissioned you to conduct a feasibility study and propose a specification and design for a network to implement the User Requirements. Additionally, the new provider has identified four key requirements of their own that your proposed solution must satisfy:

Provider Requirements: Ability to unlock and lock remotely.
Real-time location tracking of all cycles.
Simple, secure payments.
Scalable up to 500,000 bicycles.

Task 1: Draw up a Network Requirements Analysis based on the above User and Provider Requirements, using the standard headings:

- Functionality
- Performance
- Cost
- Reliability

Task 2: Using your Network Requirements Analysis, develop a design proposal for the network stating clearly how it satisfies each of the four criteria in Task 1, and meets each of the User and Provider Requirements. Ideally, this should be presented in the form of a table with each of the 8 requirements clearly identified.

Task 3: Produce a reasonably detailed design of your proposed network. You should specify the technology to be used and the main components/suppliers to be used (e.g. hubs, routers, mobile providers), but you do not need to specify actual branded products (e.g. Cisco model xx).

Deliverables and marking

Your report should contain between 2,000 and 3,000 words and be submitted in **.pdf format**.

Please submit **one** pdf document, which is named using the following convention: YourName_SRN_COxxxxcw#.pdf (e.g. GraceHopper_920000000_CO2222cw2.pdf)

- **YourName** is your full name as it appears on your student record (check your student portal)
- **SRN** is your Student Reference Number, for example 920000000
- **COXXXX** is the course number, for example CO2222, and
- **cw#** is either cw1 (coursework 1) or cw2 (coursework 2).

It is important that your submitted coursework assignment is your own individual work and, for the most part, written in your own words. You must provide appropriate in-text citation for both paraphrase and quotation, with a detailed reference section at the end of your assignment (this should not be included in the word count). Copying, plagiarism, unaccredited and/or wholesale reproduction of material from books or from any online source is unacceptable, and will be penalised (see How to avoid plagiarism).

Your report must contain the following section headings and numbering scheme:

Section No	Heading	Contents	Marks
1	Introduction	Set the scene for the design.	5 marks
2	Network Requirements Analysis	Analysis under the four headings (2.5 marks per criteria).	10 marks
3	Network Proposal	Details of the proposed network and how it addresses all 12 requirements (8 x 7.5 marks each).	60 marks
4	Network Design	Technical details of the proposed network including an overall diagram and details of possible suppliers and costings.	20 marks
5	Conclusions	Summary of the main benefits of the design including an evaluation of whether it provides the basis for a competitive advantage over the incumbent provider.	5 marks
		Total	100 marks

[END OF COURSEWORK ASSIGNMENT 2]