# The University of Leeds
# School of Computing

**COMP5850M Coursework 2 (Research) - 2016/2017**

**Deadline: Wednesday 26 April 2017, 10:00**

## 1 Introduction

This piece of coursework requires you to research on the latest development in a domain which adopts some aspects of cloud computing, emphasising on a number of aspects such as architectures, technologies, performance etc. The following deliverables are expected:

(a) a **research report** on the chosen domain (8 pages maximum including diagrams and references).
(b) a 1-slide **presentation** on *the most exciting things you have found out about the investigation.*

Around 20 hours of work is expected from an individual over this period.

## 2 Useful Resources

Useful resources are available on COMP5850M module area on the VLE: `https://vlebb.leeds.ac.uk`

## 3 Research Topics

You need to pick a domain to investigate. Following are the choices:

(a) Internet of Things: Cloud Computing Support
(b) Industry 4.0: Cloud Computing Support
(c) Edge Computing
(d) Auto-scaling in the cloud
(e) Cloud computing patterns
(f) Energy Efficiency: Energy-aware Virtual Machine Management
(g) Energy Efficiency: software engineering for the cloud
(h) Green Service Level Agreements
(i) Smart storage cloud
(j) Security challenges in the cloud
(k) Pricing schemes for the cloud
(l) Standardisation and Interoperability issues in cloud computing

## 4 What to Do Next

You need to seek approval from Karim Djemame (email k.djemame@leeds.ac.uk ) on the choice of domain before **Wednesday 22nd March 2017**. Please specify up to **three** domains in your order of preference. Some choices may be over-subscribed so we would limit a domain to two students. You will be notified of your allocated domain by **Friday 24th March 2017**.

# 5 The Report

Your research report should:

(a) explain the drivers for the developments in your chosen domain;

(b) discuss the underpinning technologies or concepts;

(c) provide a sketch of a typical architecture to support such environment;

(d) provide an example of an application in the domain;

(e) conclude with a discussion on the future direction; and

(f) include a thorough list of references.

This list of sections in your report is by no means exhaustive. You should structure your report according to the domain you are investigating. However, the marking scheme provides information on what is expected in your report.

# 6 Other

You should ensure the on-going knowledge sharing activities for this piece of work is supported. You probably are aware that this assessment will be subjective as it is the work/opinion of one student. Hence what we are looking for is a systematic approach to evaluation and an effective presentation of the reasoning supported by relevant sources.

# 7 Submission

Use IEEE conference paper template for your report. Word and Latex templates are available on the VLE in the coursework folder. Submit the report through the link **cwk2 - Answers submission**. Word and pdf file formats are acceptable (pdf is encouraged).

# 8 Marking Scheme

| | |
|---|---|
| **Report** | |
| Drivers | 5 |
| Technologies | 5 |
| Architectures | 10 |
| Example | 5 |
| Future directions | 5 |
| Write-up | 5 |
| Systematic approach | 5 |
| Quality of evaluation | 5 |
| | **45** |
| **Presentation** | |
| 'Wow' factor | 5 |
| | **50** |

This marking scheme is given as indication and will be tuned depending on the research topic.

**Weight:** this coursework accounts for 20% of the assessment.

# How to write a good research report

This is only given as indication for a technical paper on 10 pages. Some sections may not apply, e.g. experimental setting.

(a) Title ( $<$ 8 words) must hit the hot topic - short, clear and eye-catching. Authors and Affiliations (in 1-2 lines after the title)

(b) Abstract (max. 100 words) must state the research objectives, summarize the findings, and highlight the innovative contributions.

(c) Introduction (including the title, abstract) on 1 page must motivate the readers to read the rest of the paper and prepare them with the necessary background

(d) Problem Statement and Formulation (2 pages) of the problem being solved, basic assumptions, formulate the problem with technical specifications

(e) Architecture, algorithms, solution methods, protocols, analytical results and illustrated example, etc. (2 pages)

(f) Experimental setting (computer simulators, benchmarks, and datasets used (1 page))

(g) Experimental Results in plotted figures or tabulations plus their interpretations and performance analysis (2 pages)

(h) Related Work and Conclusions (1 page)

(i) References - List of relevant papers (1 page)