UNIVERSITY OF LINCOLN

School of Computer Science

Assessment Component Briefing Document

Title:	Indicative Weighting:
CMP3067M Social Applications Development Assessment 2 (Cloud Service)	50%

Learning Outcomes:

1. [LO1] critically assess the impact of web-based, mobile and pervasive computing technologies upon the social behaviour of the individual and society;
2. [LO2] evaluate the cultural, social and ethical issues arising from the emergence of personal, pervasive and ubiquitous computing;
3. [LO3] specify, design, implement social computing applications on mobile platforms utilising industry standard tools and technologies;
4. [LO4] evaluate social computing applications, based on mobile platforms, in terms of interaction design from a number of different user perspectives.

This assessment addresses all Learning Outcomes (LOs) above and is the second of two assessment components for the module.

Requirements

The objective of this assignment is to design and develop a software application that demonstrates a theoretical and practical understanding of cloud computing, by connecting a mobile application to cloud services. Cloud services are crucial to the development of scalable social applications with large numbers of users; their use also implies significant storage and authentication design implications. For the purposes of this assessment the following Windows Azure cloud services are of relevance, all of which are accessible through your free Azure Academic Pass:

- Windows Azure Hosted Service (PaaS)
  - Deploying applications and services native code to the cloud.
  - Configuring machine instances for the cloud.
- Data management
  - Azure SQL.
  - Tables NoSQL.
  - Blob (Binary Large Object).
- Access Control Service / Identity
  - Single sign-on using identity providers including Windows Live ID, Google, Yahoo!, and Facebook.
- Windows Azure Mobile Services

In technical terms, you must design and deliver a 'cloud-connected' Windows Phone application using the development tools covered in the module. Your application must make appropriate use of a number of Windows Azure cloud services listed above, as well as WCF (Windows Communication Foundation) services:

- at least two Windows Azure cloud services which must include ONE of the Data Management services.
- at least one WCF service designed by you and deployed to Azure PaaS.

You must design your application from the ground up but you are free to use (or re-use) code supplied in the workshops or any other public domain source so long as you acknowledge this where appropriate. In the short space of time you have available, unless your application is very simple, you will not be able to produce a fully-functional and polished prototype with original artwork or other artefacts. Therefore you must concentrate on delivering only a working prototype featuring basic interactivity and functionality, communication with the services and APIs, and a rudimentary mobile interface.

Documenting your application's development

You must supply written documentation discussing the design, development, evaluation and possible future enhancements of your application. Your introduction should state your application's scope and your motivation as to why you did it. Your application must attempt a working example that demonstrates underpinning development knowledge of implementing Windows Azure cloud and WCF services. You must justify the use of your chosen Windows Azure services and how they contribute to the improved scalability and enhanced user-experience of your application. You must then supply a short background section or literature review summarising other people's work using similar cloud services to the ones you have chosen for your application, example discussions can focus around the design implications and impact on user-experience from your chosen Azure services. Similarly, you must justify and discuss your use of WCF services and the rationale of calling these types of services from a mobile device. Discussion should include the benefits of RESTful API's and the security implications of data exchange between mobile devices and remote services.

Your design section should show, using sketches and/or a story-board, the basic design of your application, how it supports user engagement, how you designed any interface components and how/where and when you planned for user interaction. In particular you must make it clear how you took into account how your users will engage with the application and what would motivate them to use it. You may wish to use software like *Comic Life*[†] to create a story-board to illustrate some of these user-driven considerations. Of course you should also briefly describe the mechanics behind your application and the basics of your networking communications.

You should then briefly discuss your implementation and describe any particular difficulties you encountered in your programming. You should also give an evaluation of your application – in this section you should concentrate on reflecting upon how far you got with the realisation of your design, which aspects held you up and how you would plan to complete the implementation given enough time. In addition you should also give a reflective personal account of how well you think your application development went and what you will take away from it as a learning experience. Finally, you should discuss the ethical considerations of using cloud services in the context of data ownership, security implications and privacy issues.

It is also essential that you give a summary of any resources used or adapted (e.g. code adapted from text books, websites or lecture material) when building your application. You must also make sure that you cite material appropriately throughout your report but – especially – in the background section.

Marking of Submissions

This assessment is an individually assessed component. Your work must be presented according to the School of Computer Science guidelines. Please make sure you have a clear understanding of the grading principles for this component as detailed in the relevant Criterion Reference Grid. If you are unsure about any aspect of this assessment component, please seek the advice of the module teaching team (Prof Shaun Lawson slawson@lincoln.ac.uk, Dr Trevor Jones tjones@lincoln.ac.uk or Derek Foster defoster@lincoln.ac.uk).

Submission Instructions

The deadline for submission of this work is included in the School Submission dates on Blackboard. You must make an electronic submission of your work as a single ZIP file containing the following items:-

- a **complete Visual Studio project** folder containing your Windows Phone application
- a **PDF** of your report containing your application's documentation

Your report must be **no more** than 10 pages long and should contain the following sections:-

i. an **introduction** to your application stating its scope and why you did it [c. 1 page]

ii. a **background** section describing previous relevant work [c 2 pages]

iii. evidence of the **design** of your application [c 2 pages]

iv. a short description of your **implementation** including evidence of your application running [c 2 pages]

v. a personal **evaluation** of your application, its successes and failures and future aspirations, the ethical considerations of using cloud services for mobile devices [c 2 pages]

vi. a summary of any resources used or adapted (e.g. code adapted from text books, or lecture material) when building your application, [c 0.5 pages]

vii. a list of references used. [c0.5 pages]

Do not develop for any other mobile platform than Windows Phone 7.Do not develop for any other cloud platform than Windows Azure. DO NOT include this briefing document with your submission.

[†] *Comic Life* is available for free time-limited download at http://plasq.com/comiclife