SWS3004: Cloud Computing with Big Data
School of Computing Summer Workshop
National University of Singapore
Lab Assessment (IBM Bluemix) (20%)

submission deadline: 24 July 2018, 9:00AM
(submit through IVLE workbin)

Objective: Assess basic understanding of using IBM Bluemix cloud services (PaaS and SaaS)

Answer the questions (while **including necessary screenshots**) in a Word Document (.doc or .docx) and submit to IVLE submission link. (You may submit in PDF format)

Part 1: IBM Bluemix and Cloud Foundry

1. What is Cloud Foundry software in the context of cloud? (2 marks)

2. In which way does Cloud Foundry help us when developing and updating web applications using boilerplates such as Node.js Boilerplate? (2 marks)

3. How does Cloud Foundry software determine dependencies for the application which is uploaded/pushed by a user via the Cloud Foundry command line interface (CLI)? (2 marks)

4. What is the use of VCAP_SERVICES environment variable in IBM Bluemix applications? (2 marks)

Part 2: Web Application Development (DB)

5. Hands-on exercise Example 1 demonstrated a simple example of using a web application to output the result of an SQL script using Node.js. In the example, we output the whole database table into the web interface. **Modify the Node.JS** code such that the output contains **only the first three fields** of the database table, and, push the updated app to cloud. (include necessary screenshots including the web page) (5 marks)

Part 3: On-cloud Data Analytics (SaaS)

6. Download the test-db.csv (contains data of students in a school) from the course web page. Upload the test-db.csv file as a new table in the same database you created in **Example 1** in the hands-on exercise. (please include screenshots) (4 marks)

7. Using an SQL script, find the number of students that are in grade 9 and studying history. (please include screenshots) (3 marks)