Assessment1

Zhang Chao t0916014

Part 1: IBM Bluemix and Cloud Foundry

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

Answer:

Cloud Foundry, which is known as PaaS, is an open-source, multi cloud application platform to help users or developers create and deploy their apps.

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

Answer:

Cloud Foundry automatically transforms source code into containers, scales them on demand, and manages user access and capacity. It also owns a broad community and can connect many other services, such as DB2, Watson, and so on.

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)

Answer:

Firstly, users have to take note of the <u>manifest.yml</u> file. When deploying their app back to IBM Cloud, this file is used to determine the application's URL, memory allocation, number of instances, and other crucial parameters. Then, they can open the command interface and change to the directory where their code is located. After that, they can connect and log in to IBM Cloud with <u>API</u>, their <u>username</u>, <u>org name</u>, <u>space</u> as well as <u>password</u>. All of these items ensure Cloud Foundry software determine dependencies for the application.

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

Answer:

The VCAP_SERVICES environment variable contains information about external connection. Developers can leverage on it to interact with service instances in IBM Cloud or IBM Watson. The fields in this environment variable are set when you bind a service to an application.

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)

Answer:

(1) the modified node.js code (index.js) is as follows:

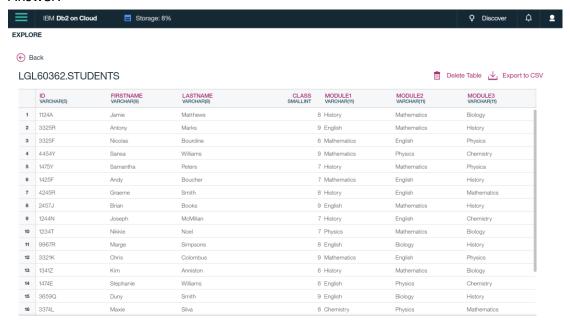
(2)the output in the web page(click https://assessment1.mybluemix.net/ to view) is as follows:

```
Congratulations. Your connection to Db2 is successful.
the first three fields of the database table
                                                                     Table_Name
                                                       Afghanistan
                                                      Albania
Algeria
ALB
              Albania
              Algeria
ASM
              American Samoa
                                                      American Samoa
AGO
              Angola
                                                      Angola
              Antigua and Barbuda
Arab World
                                                      Antigua and Barbuda
Arab World
ATG
ARB
              Argentina
Armenia
                                                       Argentina
                                                      Armenia
ABW
              Aruba
                                                      Aruba
              Australia
                                                      Australia
AUT
              Austria
                                                      Austria
AZE
BHR
              Azerbaijan
                                                       Azerbaijan
                                                      Bahrain
              Bahrain
              Bangladesh
                                                      Bangladesh
Barbados
              Barbados
BLR
              Belarus
                                                      Belarus
              Belgium
                                                      Belgium
BLZ
              Belize
                                                      Belize
BMU
              Bermuda
                                                      Bermuda
BTN
              Bhutan
              Bolivia
                                                      Bolivia
                                                      Bosnia and Herzegovina
Botswana
BIH
              Bosnia and Herzegovina
              Botswana
BRA
              Brazil
                                                      Brazil
                                                       Brunei Darussalam
BGR
              Bulgaria
                                                      Bulgaria
```

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)

Answer:



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

Answer:

4 students

