

Short Answer:

Answer the following questions with complete sentences in your own words. You are encouraged to conduct your own research online or through other methods before answering the questions. If you research online, please consult multiple sources before you write down your answers. You are expected to be able to explain your answers in detail (Provide examples to each question).

1. What is Maven and why it is used?
2. What are some problems that we might face during project deployment when Maven is not used?
3. What is POM? And what information does POM contain?
4. What is Maven Repository? What is local Maven Repository? How to configure Maven Repository?
5. What is EAR, JAR and WAR? What are the differences?
6. What is Maven plugin? How to configure plugins?
7. What is Hibernate and why we need Hibernate?
8. What is Connection Pool?
9. What is ORM? Why it is helpful?
10. What is POJO and what is Java Bean? What are the differences?
11. What is Transaction (From Dev perspective)? How does Hibernate manage transaction?

Coding Questions:

Write code in Java to solve following problems. Please write your own answers. You are highly encouraged to present more than one way to answer the questions. Please follow best practice when you write the code so that it would be easily readable, maintainable, and efficient. Clearly state your assumptions if you have any. You may discuss with others on the questions, but please write your own code.

1. Create a Java program that uses Hibernate to interact with a MySQL database table
 - a. Create a MySQL user table (id, username, password)
 - b. Use Hibernate (annotation configuration) to connect and map a Java class to the user table.
 - c. Create another Java class which asks in a while-loop for one of three possible user inputs. Assume console input and output.
 - i. For example, the program might ask in each iteration of the while-loop "Please enter Get if you want to get a user by id. Please enter Post if you want to insert a user into the database. Please enter Exit if you want to exit".
 - ii. If the user entered Get
 1. The console should now ask for an id and then display to you the user with that id.

- iii. Post
 - 1. The console should ask for a username and password and create a new user and save it to the database. (You don't have to do validation to check if the username already exists)
 - iv. Exit
 - 1. Exit the while loop and end the program
2. Same question as problem 1 but instead of using annotation configuration use xml configuration to map your user instead.