

Assignment Questions 7

Q1. What is the use of JDBC in java?

JDBC is a Java database API that was created as an industry standard for making connections between Java applications and other databases. The Java JDBC connection in Java API defines all classes that handle various aspects of the database, such as connection details, result sets, and database metadata.

Q2. What are the steps involved in JDBC?

steps involved in the process of connecting to a database and executing a query consist of the following:

- Import JDBC packages.
- Load and register the JDBC driver.
- Open a connection to the database.
- Create a statement object to perform a query.
- Execute the statement object and return a query resultset.
- Process the resultset.
- Close the resultset and statement objects.
- Close the connection.
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Q3. What are the types of statement in JDBC in java?

The statement interface is used to create SQL basic statements in Java it provides methods to execute queries with the database. There are different types of statements that are used in JDBC as follows:

- Create Statement
- Prepared Statement
- Callable Statement

Q4. What is Servlet in Java?

Servlet technology is used to create a web application (resides at server side and generates a dynamic web page).

Servlet technology is robust and scalable because of java language. Before Servlet, CGI (Common Gateway Interface) scripting language was common as a server-side programming language.

Q5. Explain the life Cycle of servlet?

The web container maintains the life cycle of a servlet instance. Let's see the life cycle of the servlet:

1. Servlet class is loaded.
2. Servlet instance is created.
3. init method is invoked.
4. service method is invoked.
5. destroy method is invoked.

Q6. Explain the difference between the RequestDispatcher.forward() and HttpServletResponse.sendRedirect() methods?

Difference between SendRedirect method and RequestDispatcher forward method are:-

1. The forward () method of the RequestDispatcher works on the server-side, while the SendRedirect() method works on the client-side.
2. Request dispatcher works on the request object, while SendRedirect() works on the response object.
3. The forward() method is also significantly faster than the SendRedirect(). This is because, unlike the forward() method, the SendRedirect() method necessitates two browser requests instead of one.
4. When the SendRedirect() method is used, the original URL is always changed. However, when the forward() method is applied, the original URL remains unchanged.

Q7. What is the purpose of the doGet() and doPost() methods in a servlet?

The doGet method is called by the server (via the service method) when the client requests a GET request. It is used to retrieve information from the server.

The doPost method is called by the server (via the service method) when the client requests a POST request. It is used to send information to the server.

Q8. Explain the JSP Model-View-Controller (MVC) architecture.

MVC stands for **Model View Controller**. It is a design pattern which is used to separate the business logic, presentation logic and data. It can be used to design a web application in a standard manner ie: It will provide a pattern to design

web application. It is able to define which element is used for which purpose. As per MVC, our application will be divided into *three layers*.

1. Model Layer:

- Model Layer is the data layer.
- It consists of all the data of our web application.
- It represents a state of an application.
- The Model Layer is responsible to connect with the database as well as stores the data into a database.
- It consists of all the classes in our application which have the connection to the database.

2. View Layer:

- It represents the presentation layer
- It normally represents the User Interface (UI) of the application.
- We can use HTML, CSS, JS etc to create presentation layer.

3. Controller Layer:

- It is an interface between the view layer and the model layer.
- It receives the request from View Layer.
- It read the data which is coming from the presentation layer.
- To read data from the presentation layer, we can use Servlet, JSP, Filter, etc.
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Q9. What are some of the advantages of Servlets?

The advantages of Servlet are as follows:

1. **Better performance:** because it creates a thread for each request, not process.
2. **Portability:** because it uses Java language.
3. **Robust:** JVM manages Servlets, so we don't need to worry about the memory leak, garbage collection, etc.
4. **Secure:** because it uses java language.

Q10. What are the limitations of JSP?

Disadvantages of using JSP

- It is very difficult for developers to perform database connectivity in JSP.
- As the JSP is compiled on the server, it is not memory and time-efficient.
- It is hard to track errors in JSP files because they are an extension to Servlets. ...

- As JSP is an HTML file, it doesn't provide many features.