1. **What is the difference between a web server and a web container?**

Webserver is the software that gets user requests and send them a response, it is stateless. Server translates Http request received from the browser into action locating a resource, where after It produces a Http response and gives information about the requested resource.

A Web Container manages components such as Servlets, JSP (it contains java code Container can store request in database and therefore be stateful).

2. **What is a servlet?**

A servlet is a Java class that extends HttpServlet class, it contains 2 overridden methods named: "doPost" and "doGet". Servlets create html in these overridden methods based on the user input. this provides dynamism in web applications and makes websites interactive.

3. **How do web servers and web containers interact with servlets?**
    - ***User** Types in a message in the browser*
    - ***Browser** formats this user input into a Http message and sends it to the server*
    - ***Server** checks if the request needs a static or dynamic response*
        - *if it is static it looks up in a folder where the predefined html's are, performs action and sends the output of this action wrapped into a Http response back to browser.*
        - *If the incoming request is dynamic the server it passes request to the **container***
            - ✓ *container loads the servlet, if no object was created before it creates one servlet instance using int() method .*
            - ✓ *Container creates HttpServletRequest and HttpServletResponse objects.*
            - ✓ When thread completes, converts response object into HTTP response message
4. **Who creates request objects?**
   The web Container creates HttpServletRequest objects.

5. What are the states in the servlet lifecycle?

- ○ *Load: check if there is already a servlet object created, if so use this, otherwise **create***
- ○ *Create: instantiation*
- ○ *Init: initialization using the HttpServlet class (parent class) init() method*
- ○ *Service: Implementation, define if the request is a get or post, this stage can have multiple calls.*
- ○ *Destroy: when all threads have gotten a response, the servlet object is send for garbage collection, resources (for example databases, files) are closed after use.*

6.Who calls init and when?

After an instance of the servlet is created the container calls the Servlet container calls the init method on the servlet object.

7.Which of init, service, and doGet should you override?

doGet and doPost

8. In what sense are servlets multi-threaded?

Servlets process multiple threads at the same time.

9. What are the implications of this for servlet instance variables?

A single object of the servlet is created an it is used by multiple treads