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## **FULL STACK DEVELOPMENT**

**Question 5) Bean Configuration and Management:** Construct a bean configuration and Management program for defining and managing beans, including their lifecycle, scopes, and dependencies.

**CODE:**

### **AppConfig.java**

```
package com.example.lab5;

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;
import org.springframework.context.annotation.Scope;

@Configuration
@ComponentScan("lab5")
public class AppConfig {
    @Bean(initMethod = "init", destroyMethod = "destroy")
    @Scope("singleton")
    public MyBean myBean() {
        return new MyBean();
    }
}
```

### BeanInjection.java

```
package com.example.lab5;

import org.springframework.context.annotation.AnnotationConfigApplicationContext;

public class BeanInjection {

    public static void main(String[] args) {
        AnnotationConfigApplicationContext context = new
            AnnotationConfigApplicationContext(AppConfig.class);
        MyBean myBean = context.getBean(MyBean.class);
        myBean.doWork();
        DependentBean dependentBean =
context.getBean(DependentBean.class);
        dependentBean.performTask();
        context.close();

    }
}
```

### MyBean.java

```
package com.example.lab5;

import org.springframework.stereotype.Component;

@Component
public class MyBean {
    public MyBean() {
        System.out.println("MyBean: Constructor called");
    }
    public void init() {
        System.out.println("MyBean: Initialization logic");
    }
    public void destroy() {
        System.out.println("MyBean: Destruction logic");
    }
    public void doWork() {
        System.out.println("MyBean: Working...");
    }
}
```

### OUTPUT:

```
PS C:\Users\Pruthvi Raj\OneDrive\Desktop\bean-management\bean-management> mvn exec:java "-Dexec.mainClass=com.example.lab5.BeanInjection"
[WARNING] Unable to find the root directory. Create a .mvn directory in the root directory or add the root="true" attribute on the root project's model to identify it.
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.example:bean-management >-----
[INFO] Building bean-management 1.0
[INFO]   from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- exec:3.6.2:java (default-cli) @ bean-management ---
[INFO] [stdout] MyBean: Constructor called
[INFO] [stdout] MyBean: Initialization logic
[INFO] [stdout] MyBean: Working...
[INFO] [stdout] MyBean: Using MyBean to perform task.
[INFO] [stdout] MyBean: Working...
[INFO] [stdout] MyBean: Destruction logic
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 1.250 s
[INFO] Finished at: 2025-11-05T22:50:56+05:30
[INFO] -----
```