

Spring Framework

1. Write a program to print “Hello World” using spring framework.
2. Write a program to demonstrate dependency injection via setter method.
3. Write a program to demonstrate dependency injection via Constructor.

Problem Statement 1 : Write a program to print “Hello World” using spring framework.

Solution :

HelloWorld.java

```
package spring1;

public class HelloWorld {

    String name;

    public String getName() {

        return name;

    }

    public void setName(String name) {

        this.name = name;

    }

    @Override

    public String toString() {

        return "HelloWorld [name=" + name + "]";

    }

}
```

appctx3.xml

```
<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"

        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

        xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans.xsd">
```

```
<bean id="hw" class="spring1.HelloWorld">
    <property name="name" value="Ashish"/>
</bean> </beans>
```

TestHelloWorld.java

```
package spring1;
```

```
import org.springframework.context.support.ClassPathXmlApplicationContext;
```

```
public class TestHelloWorld {
```

```
    public static void main(String[] args) {
```

```
        ClassPathXmlApplicationContext app = new
ClassPathXmlApplicationContext("appctx3.xml");
```

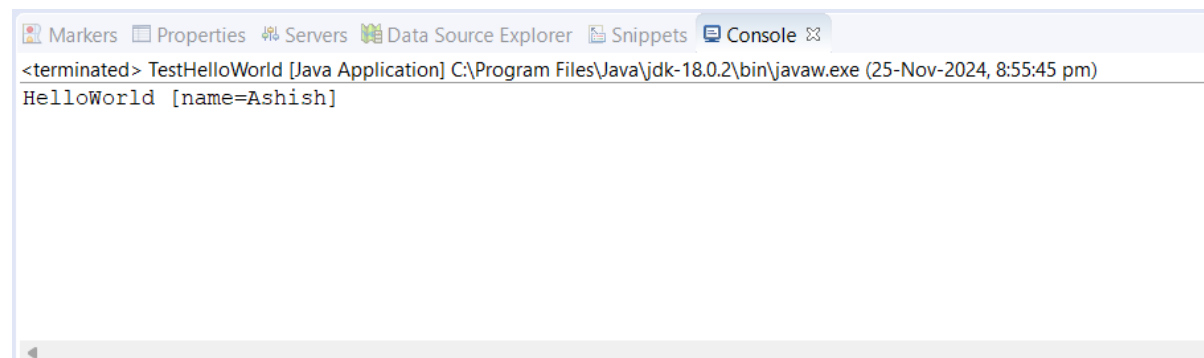
```
        HelloWorld hw = (HelloWorld) app.getBean("hw");
```

```
        System.out.println(hw.toString());
```

```
    }
```

```
}
```

Output:

A screenshot of an IDE's console window. The window has a title bar with tabs for 'Markers', 'Properties', 'Servers', 'Data Source Explorer', 'Snippets', and 'Console'. The 'Console' tab is active. The console output shows the command prompt '<terminated> TestHelloWorld [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (25-Nov-2024, 8:55:45 pm)' followed by the output 'HelloWorld [name=Ashish]'. The console has a scrollbar on the right side.

```
<terminated> TestHelloWorld [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (25-Nov-2024, 8:55:45 pm)
HelloWorld [name=Ashish]
```

Problem Statement 2 : Write a program to demonstrate dependency injection via setter method.

Solution:

Account.java

```
package spring2;

public class Account {
    int id;
    String name;
    int balance;

    public Account(int id, String name, int balance) {
        super();
        this.id = id;
        this.name = name;
        this.balance = balance;
    }

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getBalance() {
        return balance;
    }
}
```

```

    public void setBalance(int balance) {
        this.balance = balance;
    }

    @Override
    public String toString() {
        return "Account [id=" + id + ", name=" + name + ", balance=" + balance + "];"
    }
}

```

appctx2.xml

```

<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd">

    <bean id="Account" class="spring2.Account">
        <constructor-arg name="id" value="1"></constructor-arg>
        <constructor-arg name="name" value="Ashish"></constructor-arg>
        <constructor-arg name="balance" value="69000"></constructor-arg>
    </bean>
</beans>

```

AccountTest.java

```

package spring2;

import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;

public class AccountTest {

    public static void main(String[] args) {
        ApplicationContext con = new ClassPathXmlApplicationContext("appctx2.xml");
        Account acc = (Account) con.getBean("Account");
        System.out.println(acc.toString());
    }
}

```

Output:

<terminated> AccountTest [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (25-Nov-2024, 9:07:45 pm)
Account [id=1, name=Ashish, balance=69000]

Problem Statement 3 : Write a program to demonstrate dependency injection via Constructor.

Solution:

Singer.java

```
package spring1;

public class Singer {

    String name;

    int age;

    public String getName() {

        return name;

    }

    public void setName(String name) {

        this.name = name;

    }

    public int getAge() {

        return age;

    }

    public void setAge(int age) {

        this.age = age;

    }

    void displayInfo() {

        System.out.println("Name:" +name+" Age:" +age);

    }

}
```

```

appctx.xml
<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd">

<bean id="Singer" class="spring1.Singer">

<property name="name" value="Ashish"></property>
<property name="age" value="21"></property>

</bean>

</beans>

```

```

SingerTest.java
package spring1;

import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;

public class SingerTest {

    private static ApplicationContext ctx;

    public static void main(String[] args) {

        ctx=new ClassPathXmlApplicationContext("appctx.xml");

        Singer singer=(Singer)ctx.getBean("Singer");

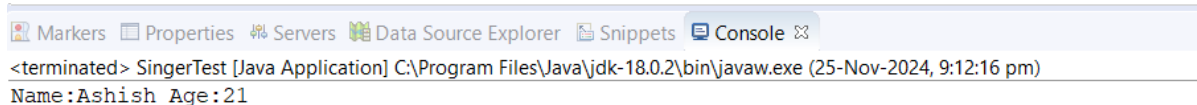
        singer.displayInfo();

    }

}

```

Output:



The screenshot shows an IDE interface with a console window. The console output indicates that the application has terminated successfully. The output text is: <terminated> SingerTest [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (25-Nov-2024, 9:12:16 pm) Name:Ashish Age:21. The IDE tabs at the top include Markers, Properties, Servers, Data Source Explorer, Snippets, and Console.

```

<terminated> SingerTest [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (25-Nov-2024, 9:12:16 pm)
Name:Ashish Age:21

```