

## Java-Based Configuration

Java-based configuration in Spring allows us to configure beans using Java classes instead of traditional XML configuration.

### Steps:

1. Create a class annotated with `@Configuration`. This class will contain methods that return instances of the beans you need.
2. Use `AnnotationConfigApplicationContext` to initialize the Spring container and provide it with the configuration class.
3. Retrieve beans from the container using `context.getBean()`.

### Configuration Class:

```
import org.springframework.context.ApplicationContext;
import
org.springframework.context.annotation.AnnotationConfigApplicationContext;
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;

// Configuration class
@Configuration
public class AppConfig {
    @Bean
    public Desktop desktop() {
        return new Desktop();
    }
}
```

## Bean Class:

```
// Bean class
class Desktop {
    public Desktop() {
        System.out.println("Desktop Object Created");
    }

    public void compile() {
        System.out.println("Compiling using Desktop");
    }
}
```

## Main Class:

```
// Main class to test the configuration
public class App {
    public static void main(String[] args) {
        ApplicationContext context = new
        AnnotationConfigApplicationContext(AppConfig.class);

        // Retrieve the Desktop bean from the context
        Desktop dt = context.getBean(Desktop.class);
        dt.compile(); // Output: "Compiling using Desktop"
    }
}
```

## Key Points:

- **@Configuration:** Marks the class as a source of bean definitions.
- **@Bean:** Defines a bean, and the method name (desktop) becomes the bean name by default.
- **AnnotationConfigApplicationContext:** Initializes the Spring context with the provided configuration class.