Exercise (Spring Container)

What is the output ?

Q1

```java
1 usage
@SpringBootApplication
public class SpringPollApplication {

    public static void main(String[] args) { SpringApplication.run(SpringPollApplication.class, args); }


    @Bean
    public String getMessage1(){
        System.out.println("hey from message1");
        return "1";
    }
}
```

Print (hey from message1)

And return 1 to getMessage1 method

Put 1 as String in Contianer

Q2

```java
1 usage
@SpringBootApplication
public class SpringPollApplication {

    public static void main(String[] args) { SpringApplication.run(SpringPollApplication.class, args); }


    @Bean
    @Qualifier("1")
    public String getMessage1(){
        System.out.println("hey from message1");
        return "1";
    }
    @Bean
    public String getMessage2(@Qualifier("1") String data ){
        System.out.println("hey from message2");
        return data ;
    }
}
```

Start with method getMessage1 because does not take a parameter
then Print (hey from message1)
Return 1 to getMessage1
Return 1 to Qualifier("1")
Put the String(1) to Contianer
Then
getMessage2 runs
take the returned value in method have Qualifier("1") (getMessage1)
as parameter here = "1"
then print hey from message2
then return "1" to getMessage2
Put the String(1) to Contianer

Q3

```java
@Bean
@Qualifier("1")
public String getMessage1(){
    System.out.println("hey from message1");
    return "1";
}

@Bean
@Qualifier("2")
public String getMessage2(@Qualifier("3") String data ){
    System.out.println("hey from message2");
    return data;
}

@Bean
@Qualifier("3")
public String getMessage3(){
    System.out.println("hey from message3");
    return "3" ;
}
```

Here I have three scenario

1-

Start with getMessage1 or getMessage3 because does not take a parameter

In this scenario well take getMessage1
Print (hey from message1)
Return 1 to getMessage1
Return 1 to Qualifier("1")
Put the String(1) to Contianer
Then
getMessage3 run because does not take a parameter and
getMessage2 should be run after Qualifier("3") is run
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")
Put the String(3) to Contianer
Then
getMessage2 run
take the value of Qualifier("3") as input here = "3"
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer

2-

Start with getMessage1 or getMessage3 because does not take a parameter

In this scenario well take getMessage3
Start getMessage3 run because does not take a parameter
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")

Put the String(3) to Contianer
Then
getMessage2 run
take the value of Qualifier("3") as input here = "3"
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer

Then
getMessage1 run
Print (hey from message1)
Return 1 to getMessage1
Return 1 to Qualifier("1")
Put the String(1) to Contianer

3-

Start with getMessage1 or getMessage3 because does not take a parameter

In this scenario well take getMessage3
Start getMessage3 run because does not take a parameter
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")
Put the String(3) to Contianer
Then
getMessage1 run
Print (hey from message1)
Return 1 to getMessage1
Return 1 to Qualifier("1")
Put the String(1) to Contianer
Then
getMessage2 run

take the value of Qualifier("3") as input here = "3"
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer

Q4

```java
@Bean
@Qualifier("1")
public String getMessage1(){
    System.out.println("hey from message1");
    return "1";
}

@Bean
@Qualifier("2")
public String getMessage2(@Qualifier("3") String data ){
    System.out.println("hey from message2");
    return data;
}

@Bean
@Qualifier("3")
public String getMessage3(){
    System.out.println("hey from message3");
    return "3" ;
}
```

```java
@Component
public class MainController {

    1 usage
    String data;

    public MainController(@Qualifier("1") String data){
        this.data=data;
        System.out.println("hey from Main controller");
    }

}
```

Here I have 6 scenario

1-

Start with getMessage1 or getMessage3 because does not take a parameter

In this scenario well take getMessage1
Print (hey from message1)
Return 1 to getMessage1
Return 1 to Qualifier("1")
Put the String(1) to Contianer
Then
getMessage3 run
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")
Put the String(3) to Contianer
Then
getMessage2 run
take the value of Qualifier("3") as input here = "3"
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer
Then
Constructer MainController run
Take value of Qualifier("1") here = "1" as input
Assign "1" to variable data
Print (hey from Main Controller)
Put the MainController to Contianer

2-

Start with getMessage1 or getMessage3 because does not take a

parameter

In this scenario well take getMessage1

Print (hey from message1)

Return 1 to getMessage1

Return 1 to Qualifier("1")

Put the String(1) to Contianer

Then

getMessage3 run

Print (hey from message3)

Return 3 to getMessage3

Return 3 to Qualifier("3")

Put the String(3) to Contianer

Then

Constructer MainController run

Take value of Qualifier("1") here = "1" as input

Assign "1" to variable data

Print (hey from Main Controller)

Put the MainController to Contianer

Then

getMessage2 run

take the value of Qualifier("3") as input here = "3"

Print (hey from message2)

Return 3 to getMessage2

Return 3 to Qualifier("2")

Put the String(3) to Contianer

3-

Start with getMessage1 or getMessage3 because does not take a parameter

In this scenario well take getMessage1

Print (hey from message1)

Return 1 to getMessage1

Return 1 to Qualifier("1")
Put the String(1) to Contianer
Then
Constructer MainController run
Take value of Qualifier("1") here = "1" as input
Assign "1" to variable data
Print (hey from Main Controller)
Put the MainController to Contianer
Then
getMessage3 run
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")
Put the String(3) to Contianer
Then
getMessage2 run
take the value of Qualifier("3") as input here = "3"
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer

4-
Start with getMessage1 or getMessage3 because does not take a
parameter
In this scenario well take getMessage3
Start getMessage3 run because does not take a parameter
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")
Put the String(3) to Contianer
Then
getMessage2 run

take the value of Qualifier("3") as input here = "3"

Print (hey from message2)

Return 3 to getMessage2

Return 3 to Qualifier("2")

Put the String(3) to Contianer

Then

getMessage1 run

Print (hey from message1)

Return 1 to getMessage1

Return 1 to Qualifier("1")

Put the String(1) to Contianer

Then

Constructer MainController run

Take value of Qualifier("1") here = "1" as input

Assign "1" to variable data

Print (hey from Main Controller)

Put the MainController to Contianer

5-

Start with getMessage1 or getMessage3 because does not take a parameter

In this scenario well take getMessage3

Start getMessage3 run because does not take a parameter

Print (hey from message3)

Return 3 to getMessage3

Return 3 to Qualifier("3")

Put the String(3) to Contianer

Then

getMessage1 run

Print (hey from message1)

Return 1 to getMessage1

Return 1 to Qualifier("1")

Put the String(1) to Contianer

Then
getMessage2 run
take the value of Qualifier("3") as input here = "3"
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer
Then
Constructer MainController run
Take value of Qualifier("1") here = "1" as input
Assign "1" to variable data
Print (hey from Main Controller)
Put the MainController object to Contianer

6-

Start with getMessage1 or getMessage3 because does not take a parameter

In this scenario well take getMessage3
Start getMessage3 run because does not take a parameter
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")
Put the String(3) to Contianer
Then
getMessage1 run
Print (hey from message1)
Return 1 to getMessage1
Return 1 to Qualifier("1")
Put the String(1) to Contianer
Then
Constructer MainController run
Take value of Qualifier("1") here = "1" as input
Assign "1" to variable data

Print (hey from Main Controller)
Put the MainController object to Contianer
Then
getMessage2 run
take the value of Qualifier("3") as input here = "3"
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer

Q5

```java
15
16      @Bean
17      @Qualifier("1")
18      public String getMessage1(MainController mainController){
19          System.out.println("hey from message1");
20          return "1";
21      }
22
23      @Bean
24      @Qualifier("2")
25      public String getMessage2(@Qualifier("3") String data ){
26          System.out.println("hey from message2");
27          return data;
28      }
29
30      @Bean
31      @Qualifier("3")
32      public String getMessage3(){
33          System.out.println("hey from message3");
34          return "3" ;
35      }
```

```java
import org.springframework.beans.factory.annotation.Qualifier;
import org.springframework.stereotype.Component;

1 usage
@Component
public class MainController {

    1 usage
    String data;

    public MainController(@Qualifier("2") String data){
        this.data=data;
        System.out.println("hey from Main controller");
    }

}
```

1 -

Start with getMessage3 because does not take a parameter
Print (hey from message3)
Return 3 to getMessage3
Return 3 to Qualifier("3")

Put the String(3) to Contianer
Then
getMessage2 because it take the input from getMessage3
Qualifier("3") here = 3
Print (hey from message2)
Return 3 to getMessage2
Return 3 to Qualifier("2")
Put the String(3) to Contianer
Then
Constructer MainController run
Take value of Qualifier("2") here = "3" as input
Assign "3" to variable data
Print (hey from Main Controller)
Put the MainController object to Contianer
Then
getMessage1 run
take MainController object as input
Print (hey from message1)
Return 1 to getMessage1
Return 1 to Qualifier("1")
Put the String(1) to Contianer