Qu 1) What is Spring?

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- Spring is a framework. The Spring Framework is an open-source framework that can be used to develop Java applications with ease and at a rapid pace.

- Spring provided a lightweight container that can be activated without using web server or application server software.

- The framework's core features can be used by any java application, but there are extensions for building web applications on top of the java EE (Enter-prise Edition) platform.

- The Spring Framework is divided into three categories:
  - → Spring IoC (Inversion of Control)
  - → Spring AOP (Aspect-Oriented Programming)
  - → Spring MVC (Model-View-Controller)

→ Spring IoC (Inversion of Control)

Spring IoC container is the core of Spring Framework. It creates the object configures and assembles their entire life-cycle.

PAGE No.
DATE / /

→ Spring AOP (Aspect - Oriented Programming)

Spring AOP enables Aspect - Oriented Programming in Spring application. In AOP aspects enable the modulamization of concerns such as transaction management, logging or security that cut accross multiple types and object.

→ Spring mvc (model - view - Controllex)

A Spring Mvc is a Java framework which is used to build web applications. It implements all the basic features of a core spring framework like the Inversion of Control, Dependency Injection.

DATE / /

Qu. 2> What is Spring Boot?

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- Spring Boot is an open-source micro framework maintained by a company called pivotal.

- Spring Boot enabled building production-ready applications quickly and provides non-functional features.

- With annotation configuration and default codes, Spring Boot shortens the time involved in developing an application.

- Spring Boot is a tool that makes developing web application and microservices with Spring Framework faster and easier through three core capabilities:

1. Autoconfiguration
2. An opinionated approach to configuration.
3. The ability to create standalone applications.

- These features work together to provide you with a tool that allows you to set up a Spring-based application with minimal configuration and setup.

DATE / / /

• Spring Boot is a Spring module that provides the RAD (Rapid Application Development) feature to Spring Framework.

• It is used to create a stand-alone Spring-based application that you can just run because it needs minimal Spring configuration.

		Embedded		XML <bean>		
Spring	+	HTTP	-	Configuration	=	Spring
Framework		Servers		or		Boot
		(Tomcat, Jetty)		@Configuration		

In Short, Spring Boot is the combination of Spring Framework and Embedded Servers.

Q4. 3> What is Webservice ?

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• Webservice is a technology to communicate one programming language with another.

• For example :- Java programming language can interract with PHP and .Net by using webserivces. In other words, webservice provides a way to achieve interoperability.

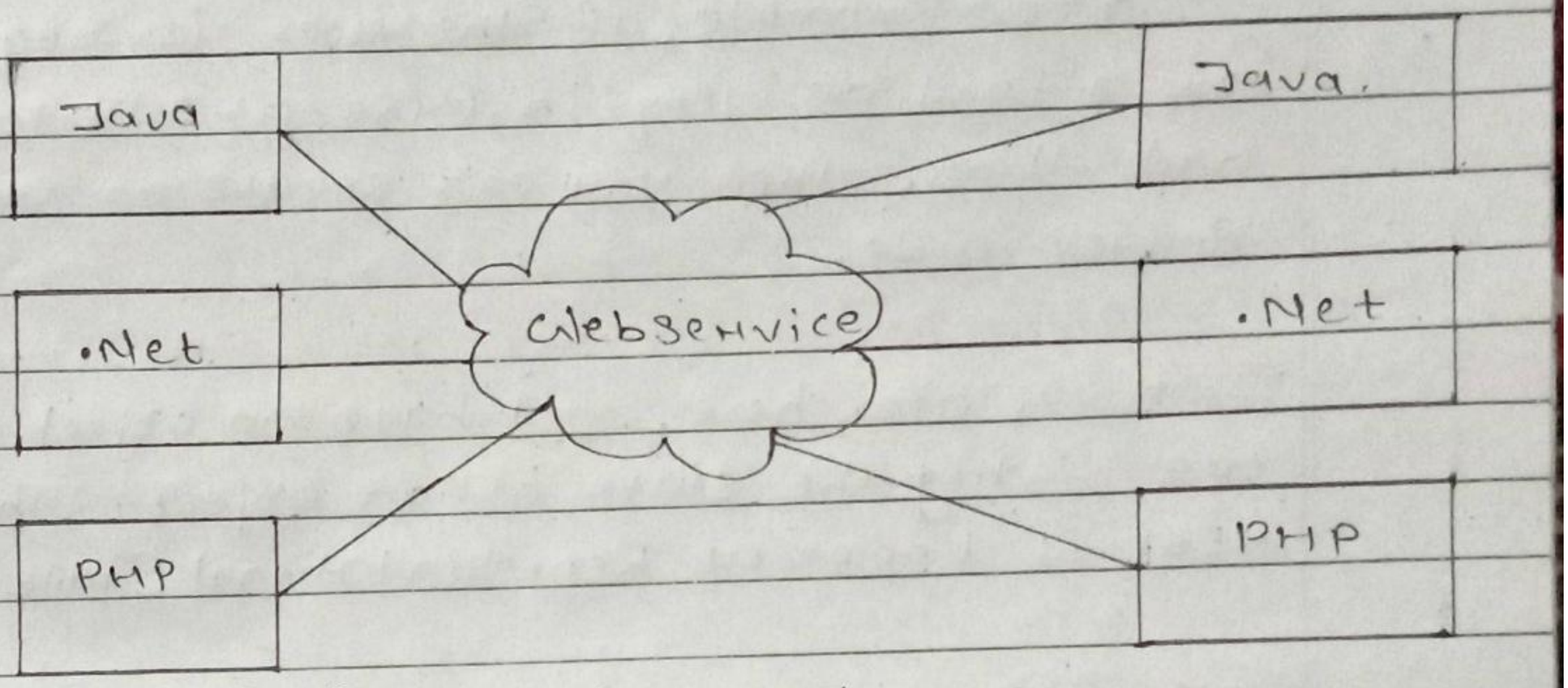

fig. :- Webservice

• There are two types of Webservice.

1) SOAP Webservice

2) RESTful Webservice

1) SOAP -> SOAP stands for Simple Object Access Protocol. Its a XML - based protocol for accessing Web services.

2) RESTful -> REpresentational State Transfer. REST is an architectural style not a Protocol.

Qu. 4) What is REST API ?

→

• The term REST stands for REpresentat-ional State Transfer. It is an architectural style that defines a set of rules in order to create web services. In a client-server communication, REST suggests to create an object of the data requested by the client and send the values of the object in respon-se to the user.

• For example, if the user is requesting for a food delivery in Pune at a certain place and time, then you can create an object on server-side.

• So, over here, you have an object and you are sending the state of an object. This is why REST is known as Representational State Transfer.

• The architectural style of REST helps in leveraging the lesser use of bandwidth to make an application more suitable for the internet. It is often regarded as the "language of the internet" and is completely based on the resources.

PAGE No.
DATE / /

Q4.5> What is JSON?

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• JSON Stands for Javascript Object Notation. is a lightweight, text-based, language-independent data exchange format that is easy for humans and machines to read and write.

• JSON can represent two structured types: Objects and arrays.

Object - An object is an unordered collection of zero or more name/value pairs.

Array - An array is an ordered sequence of zero or more values. The values can be string, numbers, booleans, null, and these two structured type.

Qu.6> → Difference between JDBC and Hibernate

	JDBC	Hibernate
①	JDBC is a technology.	Hibernate is a Framework.
②	JDBC work with rows with column. (RDBMS Approach)	Hibernate works with class's and variable (OOP Approach)
③	JDBC does not built-in functions. for performing CRUD operations on database.	Hibernate has built-in methods for peryorming CRUD operations.
④	JDBC code is database dependent code.	Hibernate code is database independent code.
⑤	Peryormance of JDBC is low.	Peryormance of Hibernate is fast.

PAGE No.
DATE / /

Qu·7) Advantages of Hibernate.

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(1) Hibernate works with class and variables (Object Oriented Approach). So, we don't need to have SQL knowledge (RDBMS).

(2) Hibernate framework is open source under the LGPL license and lightweight.

(3) HQL (Hibernate Query language) is the Object-oriented version of SQL. It generates the database independent queries. So, we don't need to write database specific queries.

(4) Hibernate framework provides the facility to create the tables of database automatically. So, there is no need to create tables in database manually.

(5) The peryormance of hibernate framework is fast because cache is internally used in hibernate framework.

(6) Fetching data from multiple tables is easy in hibernate framework.

Qu. 8) Can you explain some annotation in Spring?

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Following are the annotations in Spring -

1) @controller -

The @controller annotations indicates that a particular class serves the role of a contr-oller Spring controller annotations is typic-ally used in combination with annotated handle methods based on the @RequestMapping annotation.

2) @RequestMapping -

@RequestMapping is the most common and widely used annotation is Spring MVC. It is used to map web requests onto specific handler classes and/or handler methods. @RequestMap-ping can be applied to the controller class as well as methods.

3) @RequestBody -

The @RequestBody annotation is applic-able to handler methods of Spring controllers This annotations indicate that Spring should deserialize a request body into an object. This object is passed as a handler method parameter.

4) @pathvariable -

@pathvariable is a Spring annotations which indicates that a method parameter should

PAGE No.
DATE / /

be bound to a URL template variable.

5) @RequestParam -

In Spring, the @Requestparam annotations is used to read the form data and bind it automatically to the parameter present in the provided method. So, it ignores the requirement of HttpServeletRequest Object to read the provided data.

6) @RequestHeader -

In case you want to set default value of parameter you can do so using default parameter attribute of spring @RequestHeader annotation.

@RequestHeader that can be used to map controller parameter to request header value.

7) @ReponseBody -

The @RequestBody annotations tells a controller that the object returned is automatically serialized into JSON and passed back into the HttpResponse object.

Ques 9> Can you explain some annotations in hibernate

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1> @Entity –

It is used for declaring any POJO class as an entity for a database.

2> @Table –

It is used to change table details, Some of the attributes are

- name – override the tablename.
- Schema, Catalogue, enforce unique Constraint

3> @Id –

It is used for declaring a primary key inside our POJO class.

4> @Column –

It is used to Specify column mappings. It means if in case we don't need the name of column that we declare in POJO but we need to refer that entity you can change the name for the database table.

5> @GeneratedValue –

Hibernate automatically generate the value with reference to the internal sequence and we don't need to set the value manually.