SPRING MVC

MVC Architecture:

- MVC stands for Model View Controller
- It is a software design pattern for developing web applications.
- It contains three parts
    - Model
    - View
    - Controller

Model:

The Model is responsible for managing the data of the application. It responds to the request from the view and it also responds to instructions from the controller to update itself.

View:

It means presentation of data in a particular format, triggered by a controller's decision to present the data. They are script-based templating system like JSP,ASP,PHP and very easy to integrate with AJAX technology.

Controller:

The controller is responsible for responding to the user input and perform interactions on the data model objects. The controller receives the input, it validates the input and then performs the business operations that modifies the state of data model.

Spring MVC

- A spring MVC is a java framework which is used to build web applications.
- It follows the model-view-controller design pattern.
- It implements all the basic features of a core spring framework like inversion of control, dependency injection.

Model in MVC:

A model container the data of the application. A data can be a single object or a collection of objects.

Controller:

A controller contains the business logic of an application. Here the @Controller annotation is used to mark the class as controller.

View:

A view represents the provided information in a particular format. Generally JSP+JSTL is used to create a view page although spring also supports other view technologies such as apache velocity, thymeleaf and free marker.

Front Controller:

- In spring web mvc, the DispatcherServlet class works as the front controller.
- It is responsible to manage the flow of the spring MVC application.
- All the requests will be received by the front controller and then it will assign the request to particular controller with the help view resolver.

Handler Mapping:

- In spring MVC, the dispatcher servlet acts as front-controller-receiving all the incoming HTTP requests and processing them.
- HandlerMapping is an interface that defines the Mapping between request and handler objects.
- Spring MVC framework provides some ready-made implementations.
- There is an otion to the programmer he can use the implementation which is already provided else developer can provide there own implementations to provide customized mapping strategies.

ModelAndView:

- ModelAndView is a class in java present in or.springframework.web.servlet.
- The object of ModelAndView is capable of holding the modell as well as view.
- The controller returns the ModelAndView object to DispatcherServlet.
- The DispatcherServlet resolver the view using view Resolveer and views.
- In this view is an object which contains view name in the form of string and model is a map to add multiple objects.

@ModelAttribute

- @ModelAttribute refers the properties of model object.
- This annotation binds the method parameters or methods return value to a named model attribute and them exposes it to the web view.
- It refers the property of model object.

@Controller

- Spring @Controller annotation is a specialization of @Component annotation.
- The @Controller annotation indicates that a particular class serves the role of a controller.
- Spring controller annotation is typically used in combination with annotated handler methods based on the @RequestMapping annotation.
- It can be applied to classes only.
- It is used to mark a class as a web request handler.

@RequestMapping

- @RequestMapping Annotation which is used to map HTTP request to handler methods of MVC and REST controller.
- In spring MVC application the Dispatcher Servlet is responsible to routing incoming HTTP requests to handler methods of controller.
- When configuring spring MVC, you need to specify the mapping between the request and handler method.
- To configure the mapping of web requests we use the @RequestMapping annotation.
- @RequestMapping annotation can be applied to class-level and method level in a controller.

@RequestParam

- @RequestParam annotation is used to accessing the query parameter value form the request.
- We have to pass the value in the form of key and value pair.