Spring framework on java 🡪

Spring core –

Dependencies injection (DI)

Inversion of control(IOC)

Spring config

Beans , context

Controller , service, repository classes just assume

Now , to control creation of objects ,flow of program are transferred from app code to framework , ioc came in picture that’s inversion of control , basically a principle for object handling authorities.

Whereas di , dependency injection , is a design pattern for ioc or kindof implementation of ioc .

Basically it allows creations of objects outside of class and provides them to classes in different ways like

Constructor injection – dependencies provides through class contructor

Setter injection – dependencies provides thorugh setter mehtods

Interface injection – dependencies provides thorugh an interface

Role of DI is to provide feature of loose coupling (means modularity or flexibility of code) and to enchance testing and maintainability of codes

DI is a implementation of IOC , there are others also ->

Service locater pattern , provides dependencies instance on req

Event driven architecture , flow of program determined by events

DI in spring boot >

Main class -> springApplication.run() -> this make ioc container on jvm , in which objects are managed.

Application context and beans are going to use , making class we required in ioc container as component

Bean -> a single object managed by the spring ioc container (components in app , services, repository, controller)

Beans ->multiple objects or multiple beans

In spring , the dependencies injection in beans, like setter, field , constructor injections

Annotations ->

@Components , @Service, @repository, @controller

@Autowired -> automatic dependencies injection

In spring resolve and injection of dependencies at runtime

@qualifier -> if multiple beans of same type exist , it used to specify which bean to inject

Spring core ->

Initialize simple project with maven , now for context use , add dependencies in pom.xml file with grp id , artifactid , version , now u can use them

Now creating object in ioc container we have to specify .xml file with initial name , there we define beans and bean for object creation in ioc container ->

Now there setter injection ->

For this we have to add property tag there define which parameter we have to define and then add value for class . see in bean with id = xyz , property tag having value , assign value for only that object having xyz id and for id=123 without property tag , value for that object 123 id , will be null or zero.

For constructor injection ->

Replace property tag with constructor-args tag , value there and for multiple arguments have index refrencing parametric order

Now as for variables value is used but for classes , we use ref

Spring boot web 🡪

Has frontcontroller by spring , which handles mapping of pages to which has to be sent to which controller