Research

1. What is Dependency Injection?

Dependency Injection is a pattern to implement inversion of control. It is the act of connecting(injecting) objects with other objects is done by an assembler instead of by the objects themselves.

Sub.) What is Inversion of Control?

IOC is a software engineering principle in which control of objects or portions of a program is transferred to a container or framework.

Sub.) What are the benefits?

-Decoupling execution of tasks from its implementation.

- Another benefit of DI is the ease when it comes to testing

Dependency injection can be performed on Constructor of a class, a field, and method parameters.

2. What is Dagger?

Dagger is an Open source dependency framework which automatically generates boilerplate codes

3. What if the difference in Dagger 1 vs Dagger 2?

Some major difference between dagger 1 and dagger 2 is

No more reflection- everything is done as concrete calls

No more runtime graph composition

Traceable - code easier to follow due to no more reflection.

Allows us to **use any well formed scope annotation** Compared to dagger 1 single scope

Modules require less configuration

4. What is a dependency graph?

Dependency Graph is a graph that shows a root item/object and its dependencies.

5. What are the following annotations for in dagger 2:

Inject - inject annotation allows instances of classes to be constructed by dagger. (can be used on a constructor, field or object).

Component - used to annotate the interface that returns the root object of the graph

Module - responsible for providing objects that can be injected

Provides - we use this for cases @inject cannot be used. Since **@inject cannot** be used to **inject an interface**, **inject classes from libraries,** and inject on objects that require configuration outside the constructor.

6. What are the main types of dependency injection and what is the difference in them?

1. constructor injection: the dependencies are provided through a class constructor.
2. setter injection: the client exposes a setter method that the injector uses to inject the dependency.
3. interface injection: the dependency provides an injector method that will inject the dependency into any client passed to it. Clients must implement an interface that exposes a setter method that accepts the dependency.

Dependency Injection

Helps with Testing

Problem with dependency injection

Dagger2

- Dependency Injection framework
- Dependency Graph is created at build(keeps track of what we are referring to) must rebuild after making changes.
- Dagger 2 annotations

    @Inject - inserting the dependency in objects

    @Component - graphing of modules

    @Module - dependency instantiated

    @Provide - tells component which module is involved

    @Scope - scope of the dependency