1. **Development environment**
2. **Testing environment**
3. **Staging environment**
4. **Production environment**
5. **Development environment:**
6. **The development environment is the first environment in software development which acts as the workspace for developers to do programming and other operations related to the creation of software and/or systems.**
7. **An integrated development environment (IDE) — a software package with extensive functions for authoring, building, testing, and debugging a program which is commonly used by software developers. Some programming software tools such as Microsoft Visual Studio, Eclipse, NetBeans, and other integrated development environments.**
8. **Testing environment:**
9. **The test environment is where testing teams evaluate the application/quality. program’s This also allows computer programmers to find out and solve any defects that may interfere with the application’s smooth operation or degrade the user experience.**
10. **The test environment is created by allocating storage, computing, and other resources needed for testing. This could include new physical/virtual devices set up for testing use cases defined by developers. For example, Selenium tests cannot run for the whole set of browsers through which you want your application to be accessible at the same time. This means that you either run tests sequentially or generate multiple test environments.**
11. **Staging environment:**
12. **When you generate the staging instance of an application, you are confident sufficient to reveal it to the immediate owner but not to users. You should run more tests before exposing to the latter group. The staging environment is similar to the pre-production in use.**
13. **The staging environment is frequently restricted to a small group of people. The only groups that can access the application in staging are those with whitelisted emails and IP addresses, as well as your developer team. The goal of a staging environment is to simulate production as much as possible.**
14. **Production environment:**
15. **When the end-user use a web/mobile application, the program is operating on a production server. It’s been created in the production environment.**
16. **Tests can be carried out while the product is in production, and new features can be introduced safely at the same time. Feature flags allow you to show a future version of an app to a select few users while the rest continue to utilize the current version.**

A diagram of software testing

AI-generated content may be incorrect.

1. **Difference between JPA and JDBC**

JDBC is a standard for Database Access

JPA is a standard for ORM

JDBC is a standard for connecting to a DB directly and running SQL against it - e.g SELECT \* FROM USERS, etc. Data sets can be returned which you can handle in your app, and you can do all the usual things like INSERT, DELETE, run stored procedures,

lots of mapping between data sets and objects

JPA is a standard for Object Relational Mapping. This is a technology which allows you to map between objects in code and database tables. This can "hide" the SQL from the developer so that all they deal with are Java classes,

 The most famous JPA provider is [Hibernate](https://hibernate.org/),

 Hibernate and most other providers for JPA write SQL and use JDBC to read and write from and to the DB.