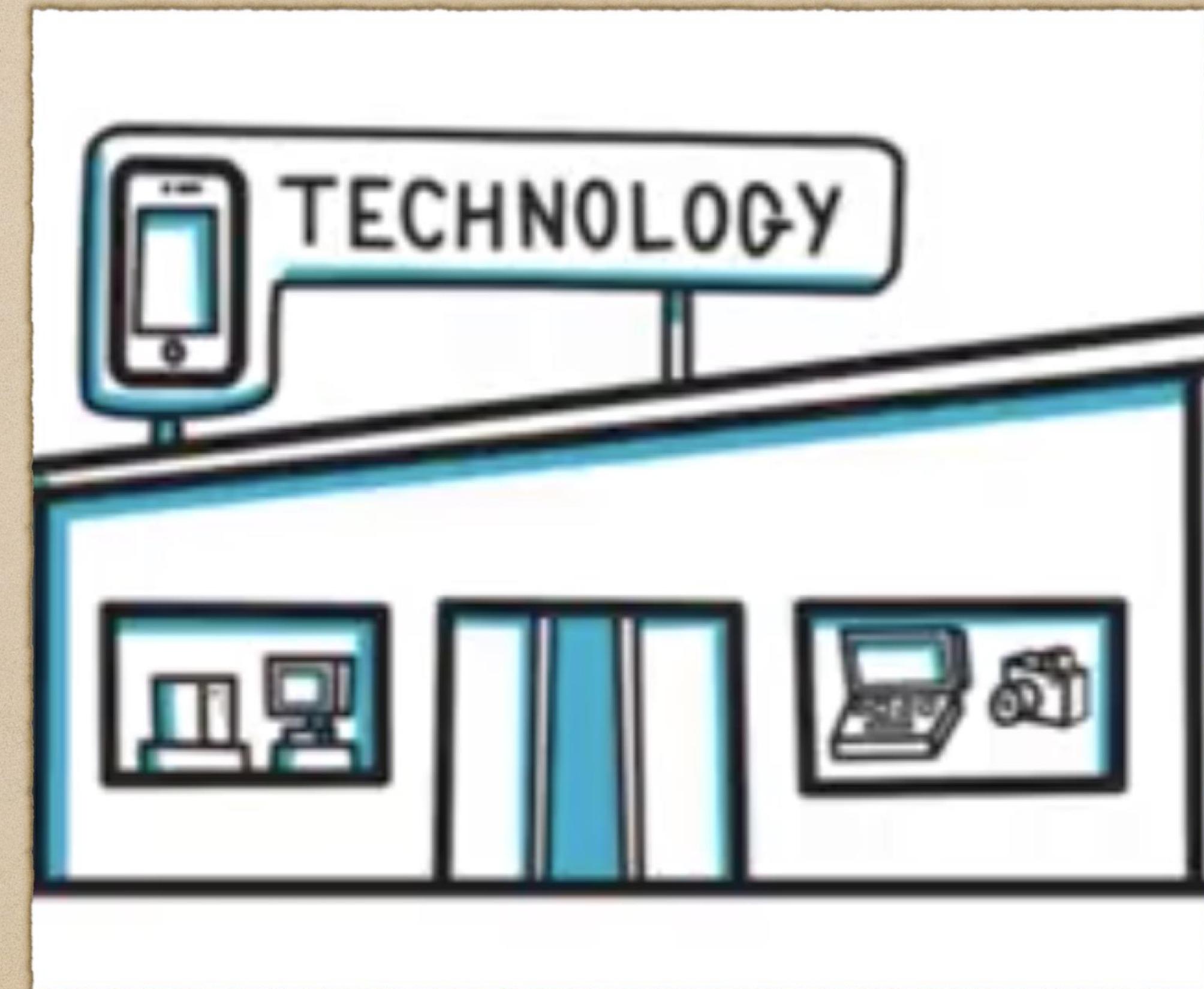


Introduction

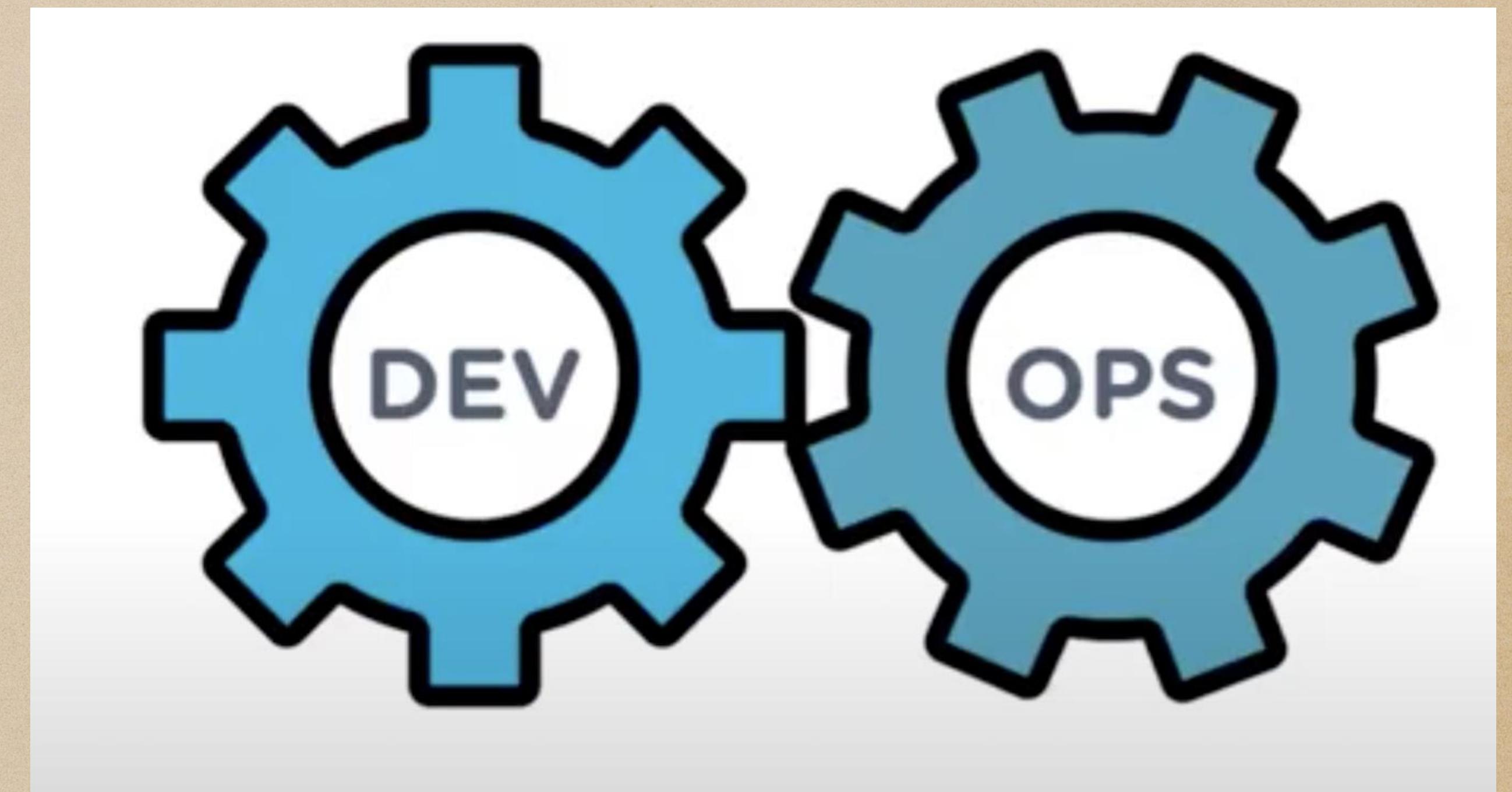
Simple Process

- Plan the procedure
- Write code for functionality
- Make the code executable
- Run test
- Run software on client system
- Monitor the working of the software and give feedback



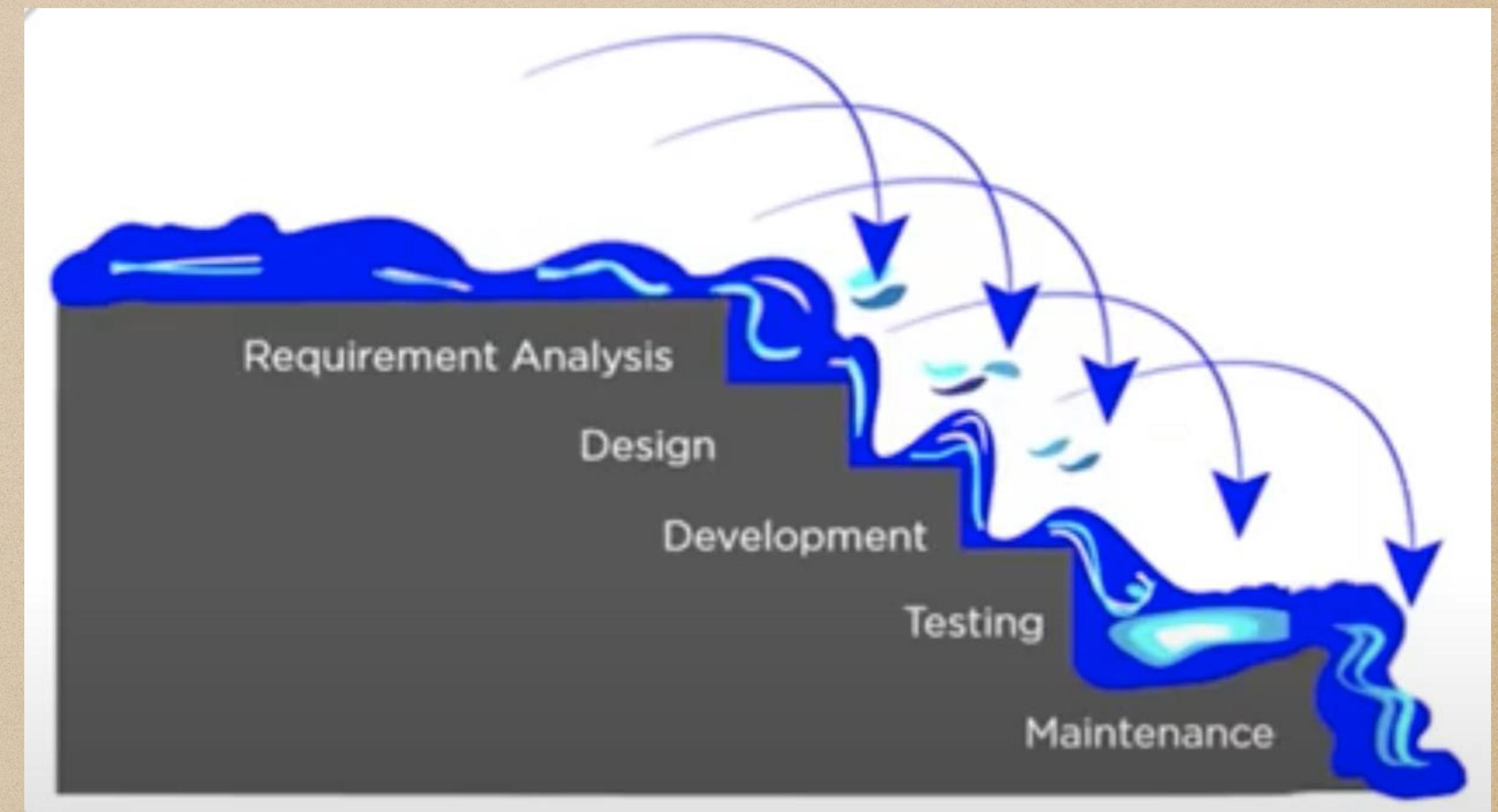
Type of models

- Waterfall Model
- Agile Model
- What is DevOps?
- DevOps Tools
- DevOps Advantages



Waterfall Model

- Waterfall model is traditional approach of software development
- In waterfall model, development happens in a step by step manner



Waterfall Model

Requirement analysis

Requirements

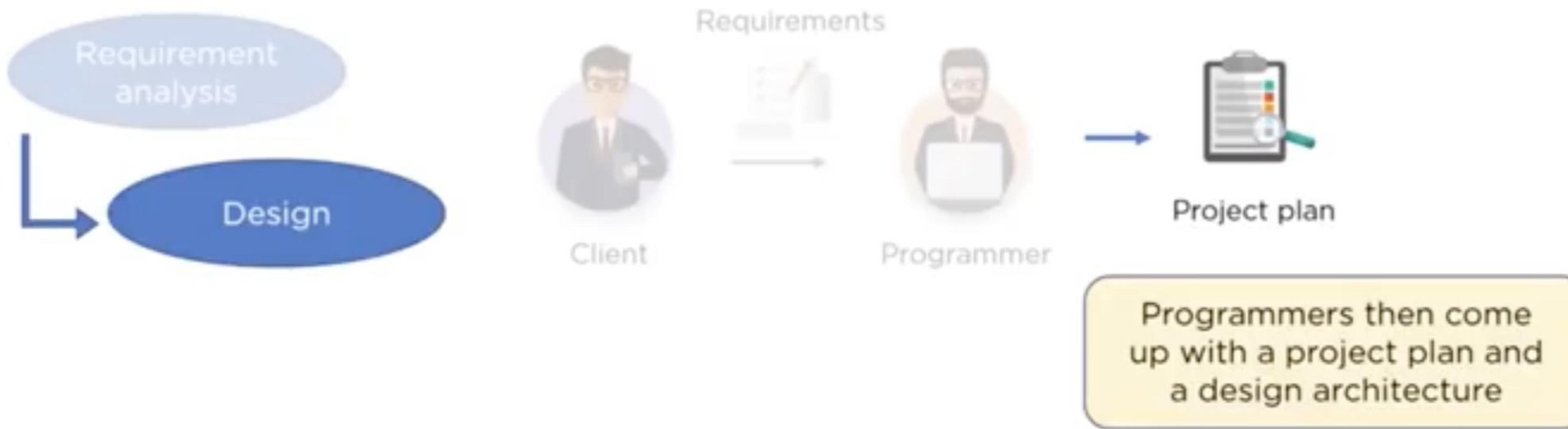


Client

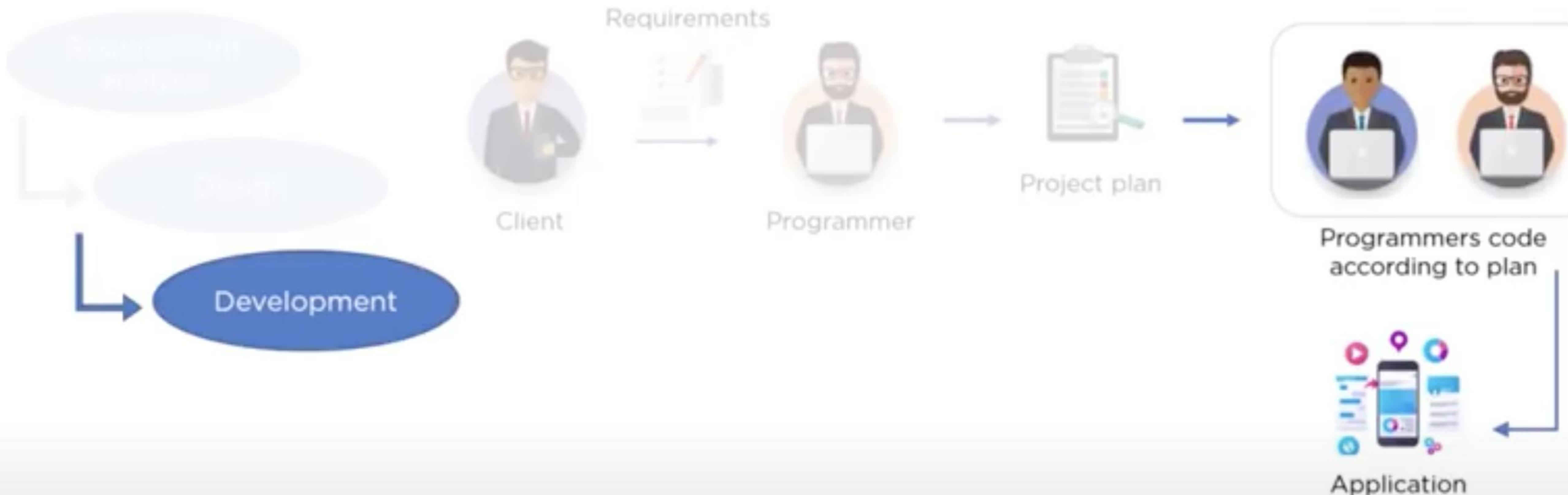
Programmer

Programmers accept
the client requirements
and analyze it

Waterfall Model

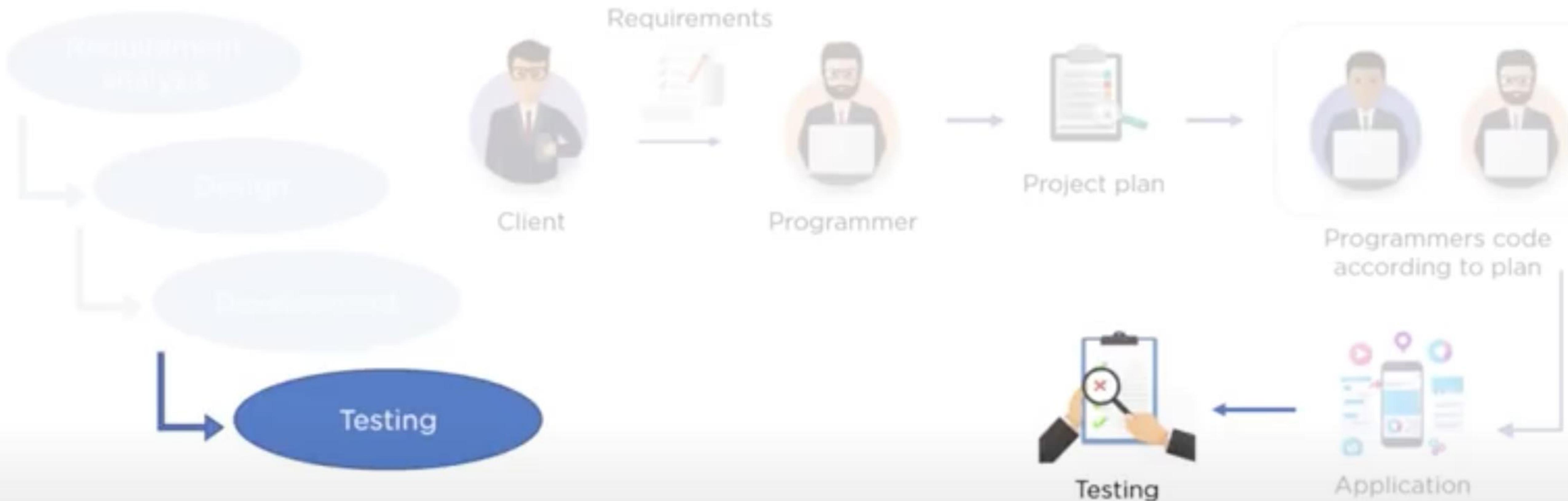


Waterfall Model



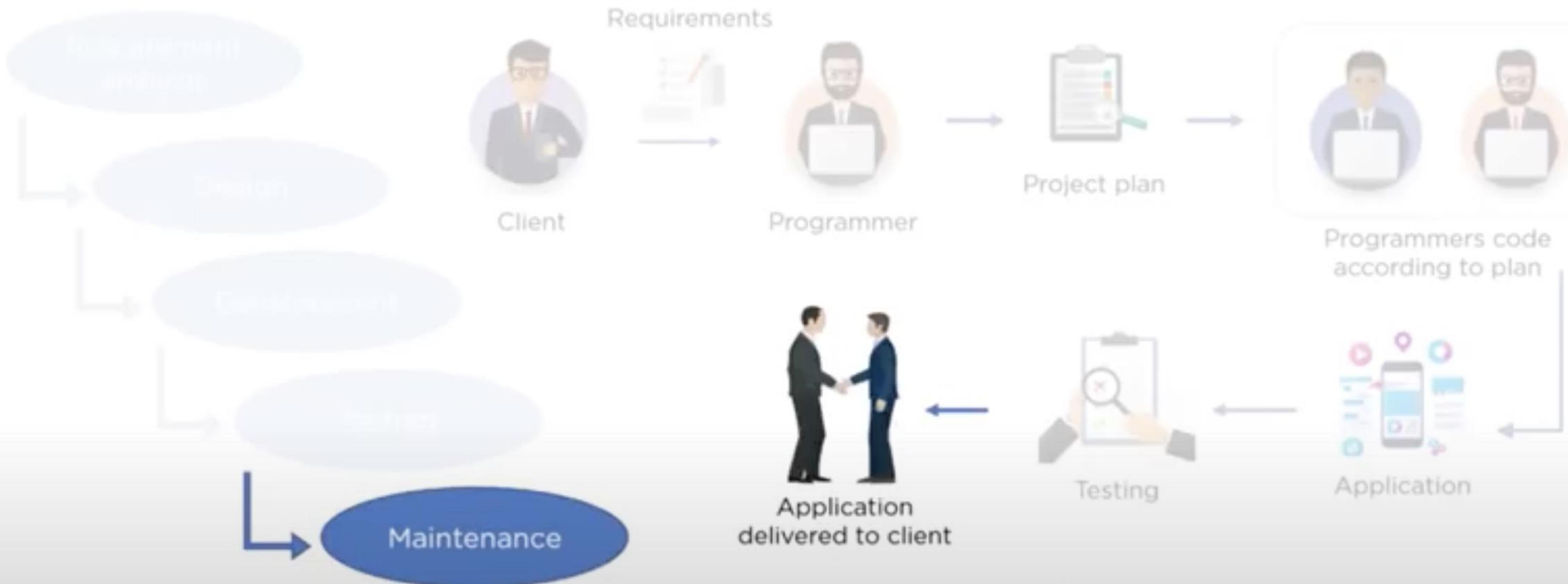
Programmers code
the application as per
project plan and design

Waterfall Model



Testing ensures the application is error-free and meets the requirements

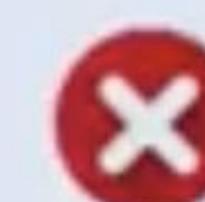
Waterfall Model



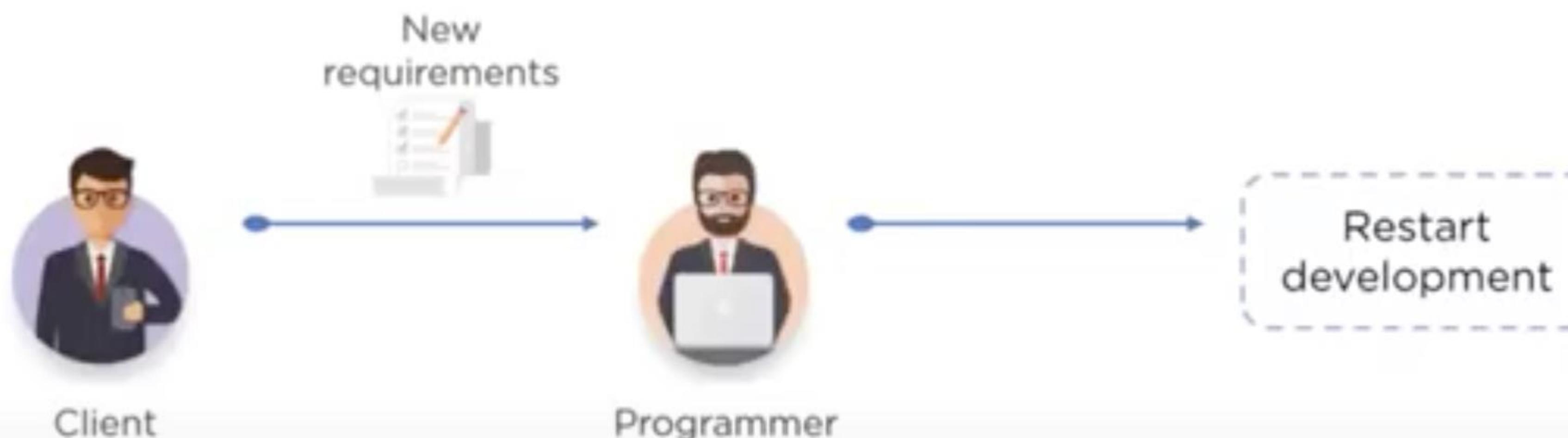
After application is delivered,
the operations team maintain
the application

Waterfall Model

Disadvantage of waterfall model



Any new requirements from the client will restart the development cycle

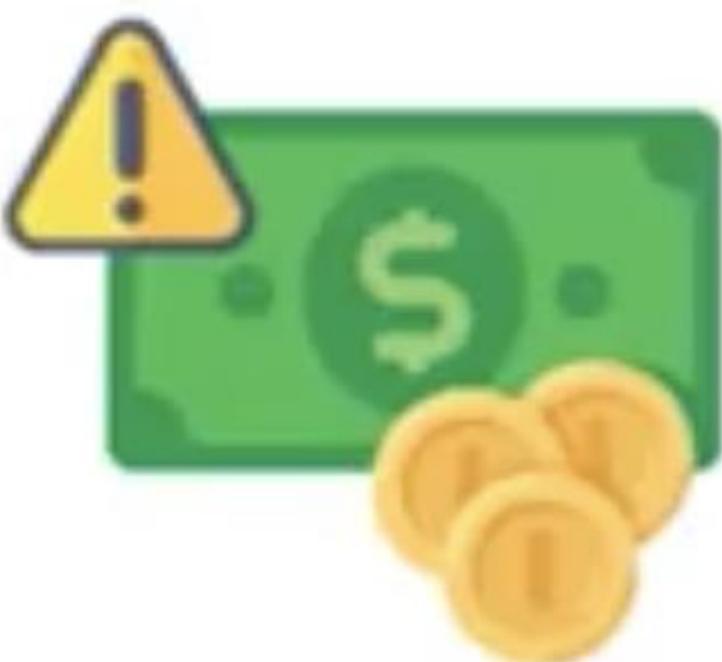


Waterfall Model

Using waterfall model, companies soon came to realize



Client requirements
cannot be understood
at once



It is very expensive to
make changes during the
end of the project

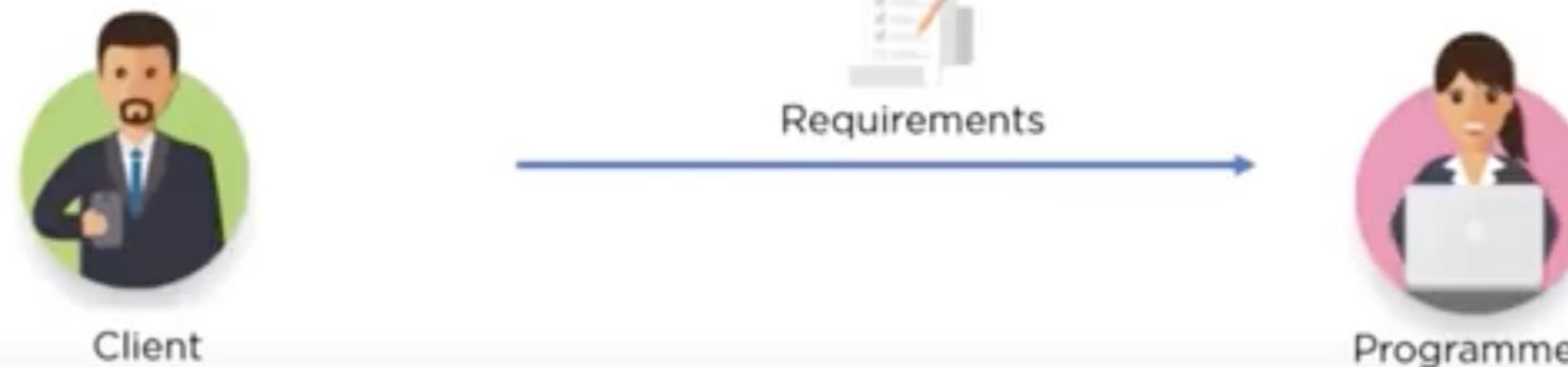


Software must be delivered
faster and with less
resources

Agile Model

Agile Model

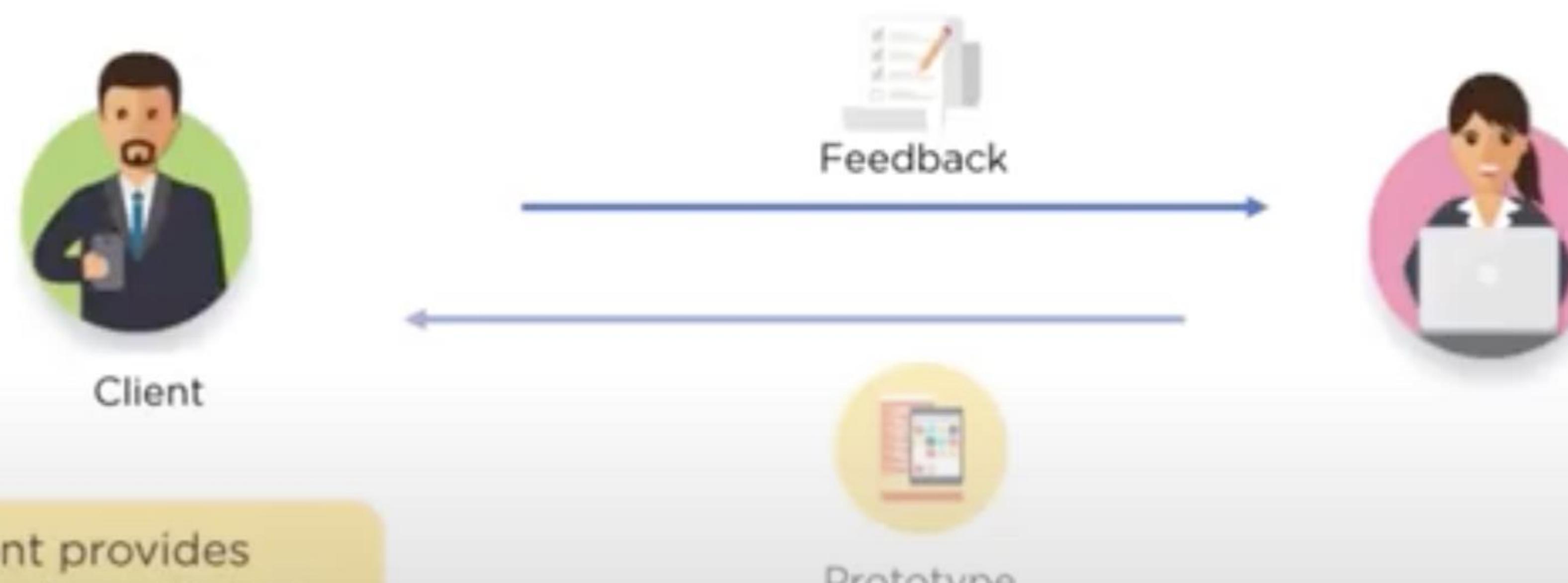
Following the Agile model, programmers create prototypes to understand client requirements



Client sends his
requirements to the
programmer

Agile Model

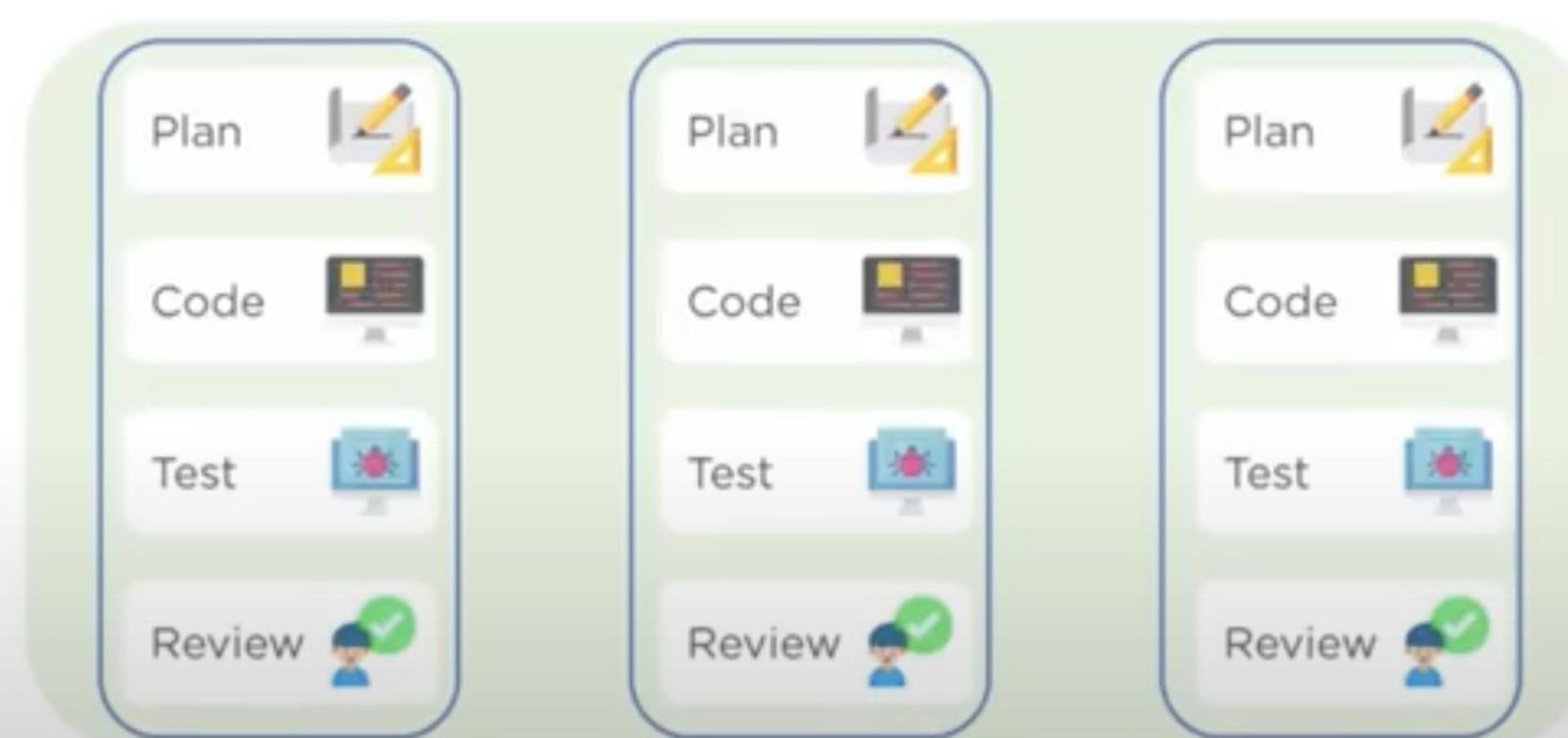
Following the Agile model, programmers create prototypes to understand client requirements



Client provides
feedback and list of
changes to be made

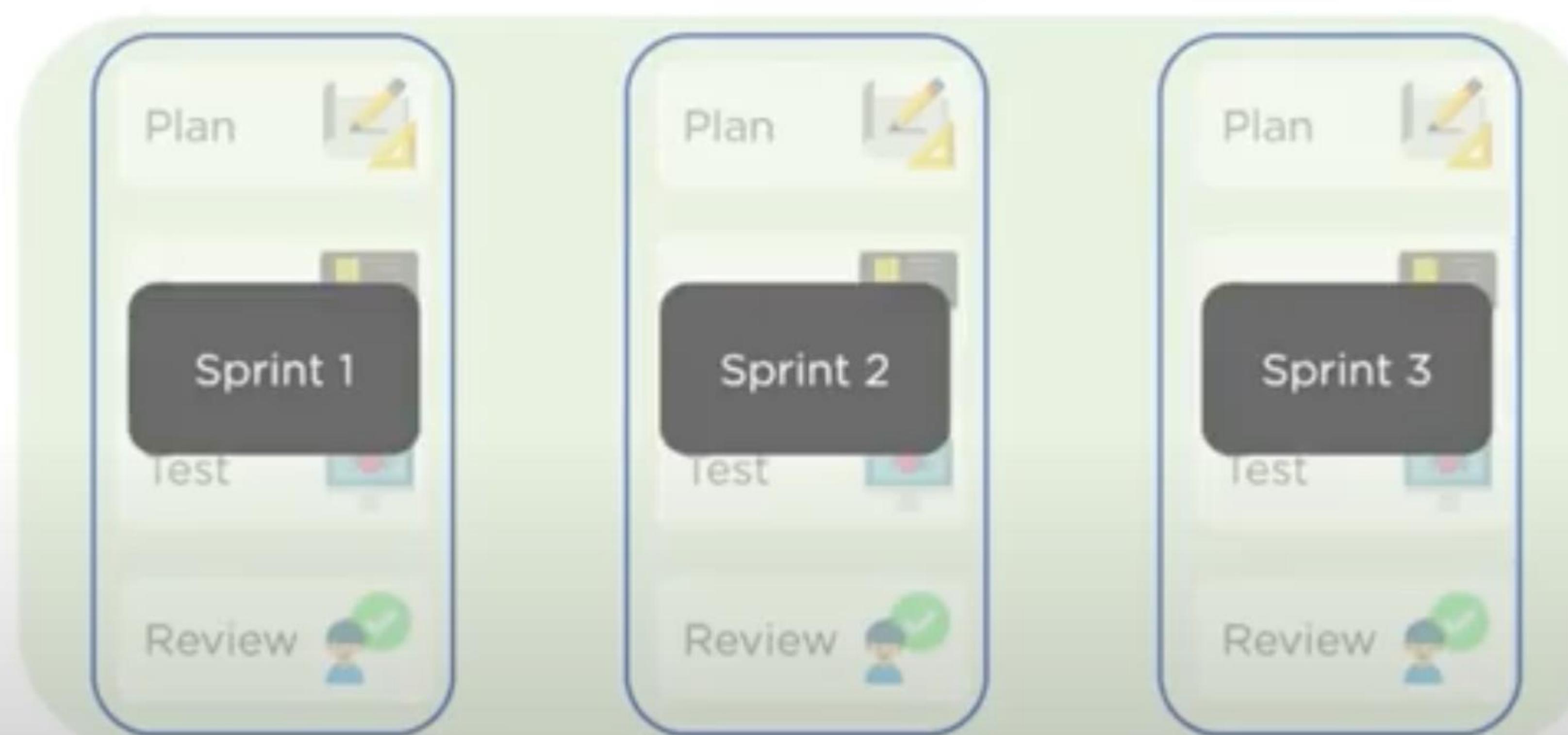
Agile Model

The entire process of building a software is broken down into small actionable blocks called sprints

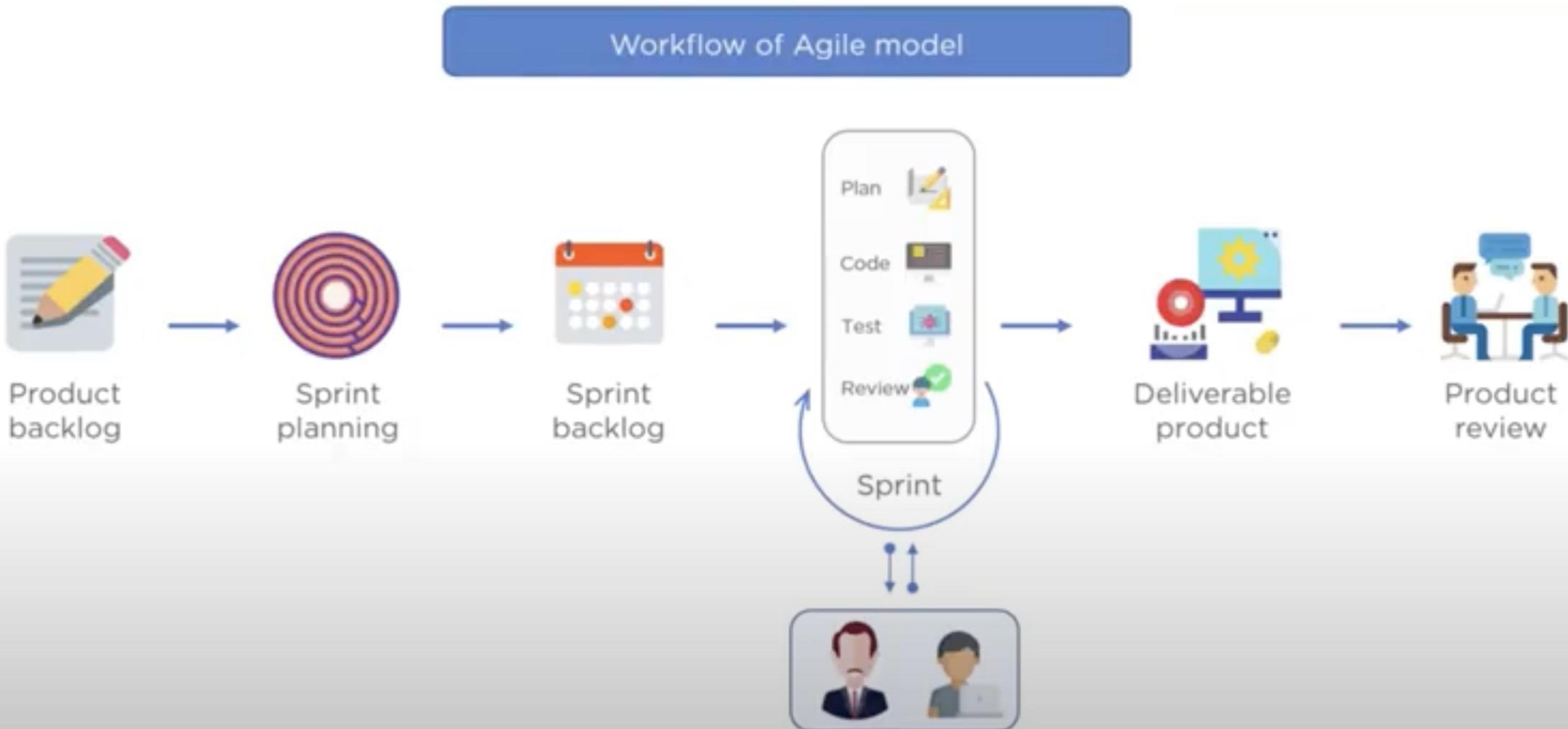


Agile Model

The entire process of building a software is broken down into small actionable blocks called sprints



Agile Model



Agile Model

Advantages of Agile model



Client requirements are better understood because of the constant feedback



Product is delivered much faster as compared to waterfall model

Agile Model

Disadvantages of Agile model

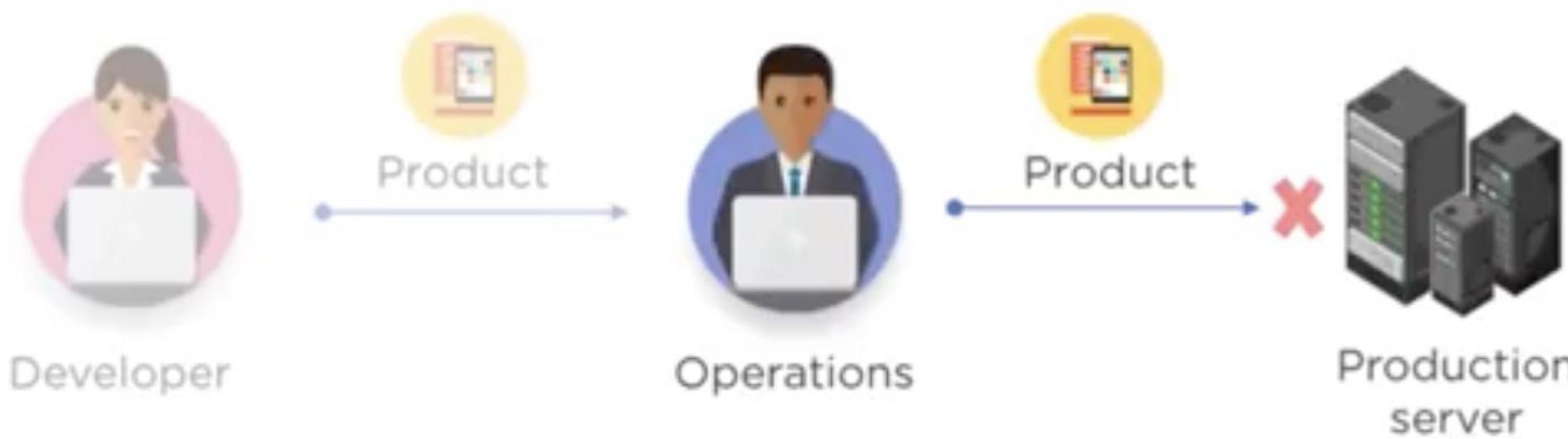


The product gets tested only on developer computers and not on production systems



Developers and operations team work in silos

Agile Model



When the product fails in production servers, the operations team are clueless and send product back to the development team

DevOps

What is DevOps?

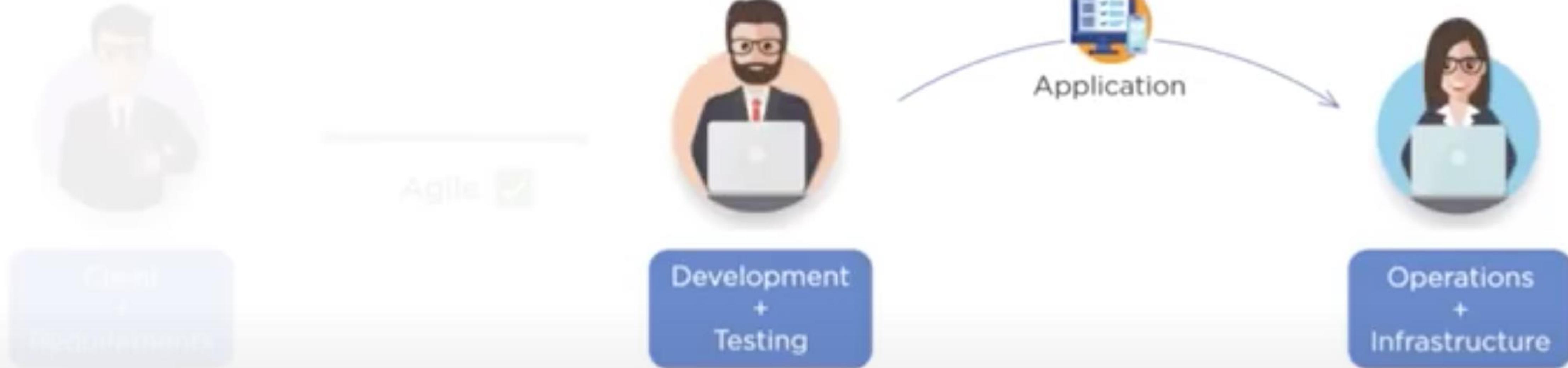
DevOps is an evolution from Agile model of software development



Agile addressed the gap between clients and developers

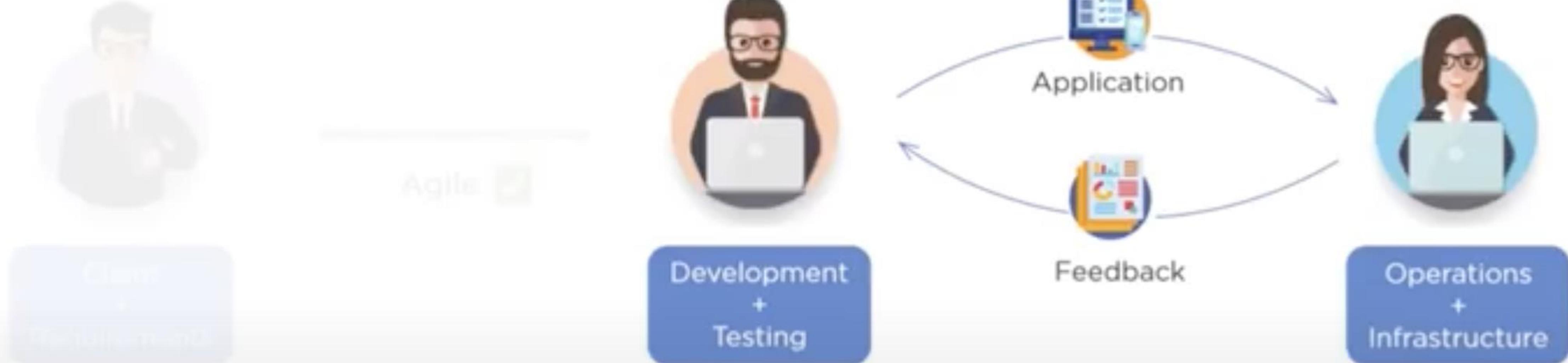
What is DevOps?

Development team will submit the application to the operations team for implementation



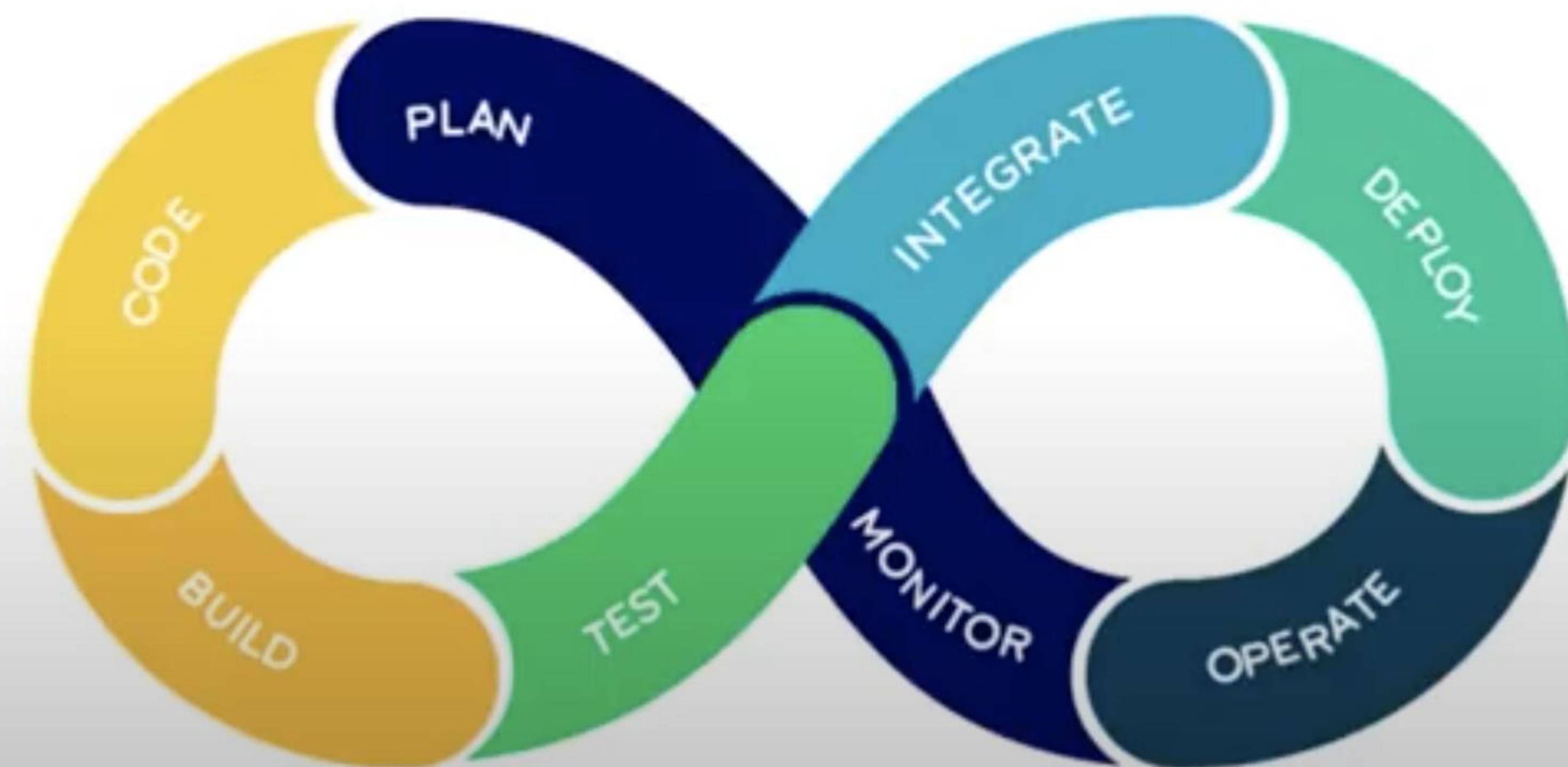
What is DevOps?

Operations team will monitor the application and provide relevant feedback to developers



DevOps Phases

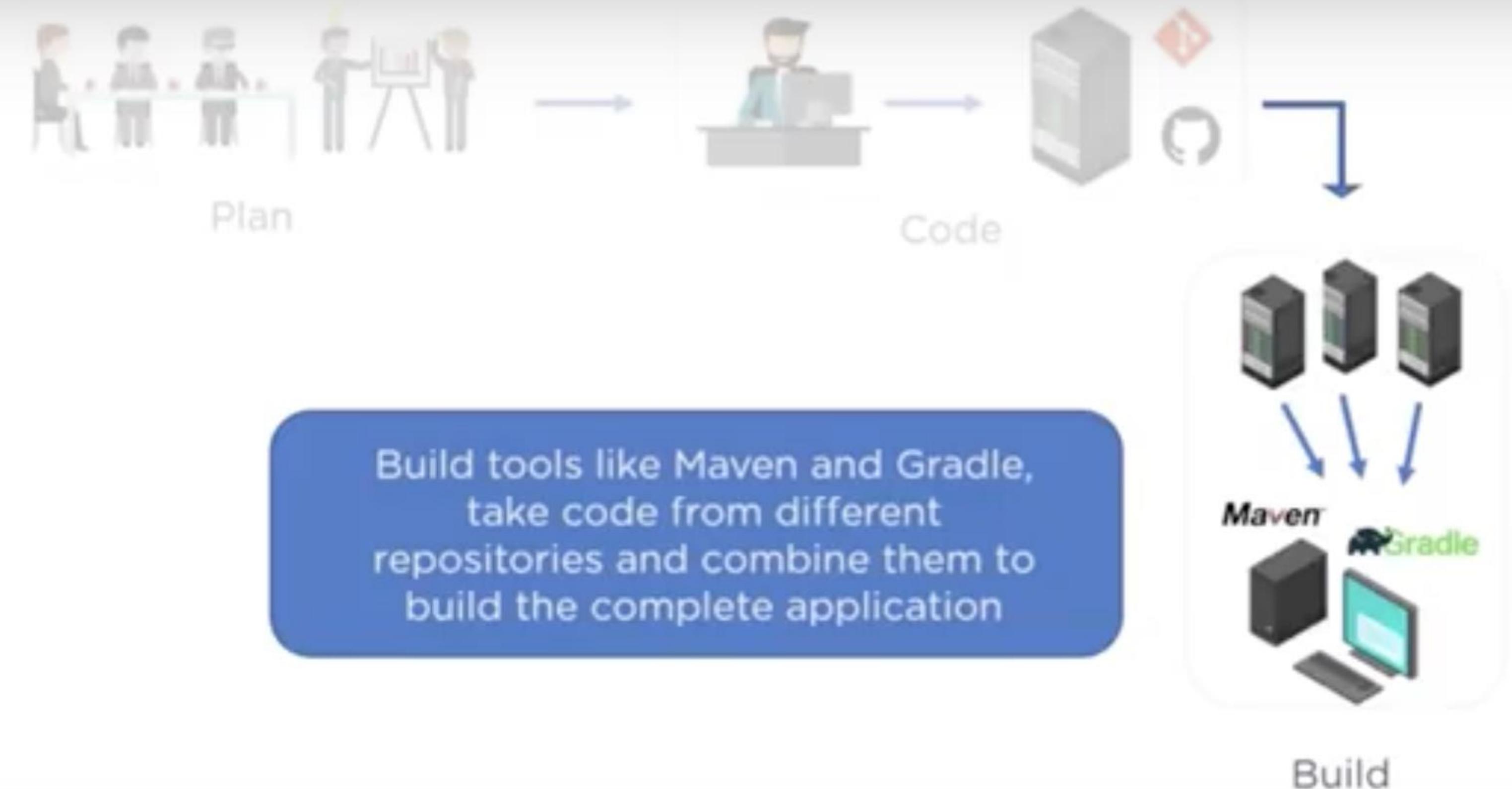
According to DevOps practices, the workflow in software development and delivery is divided into 8 phases

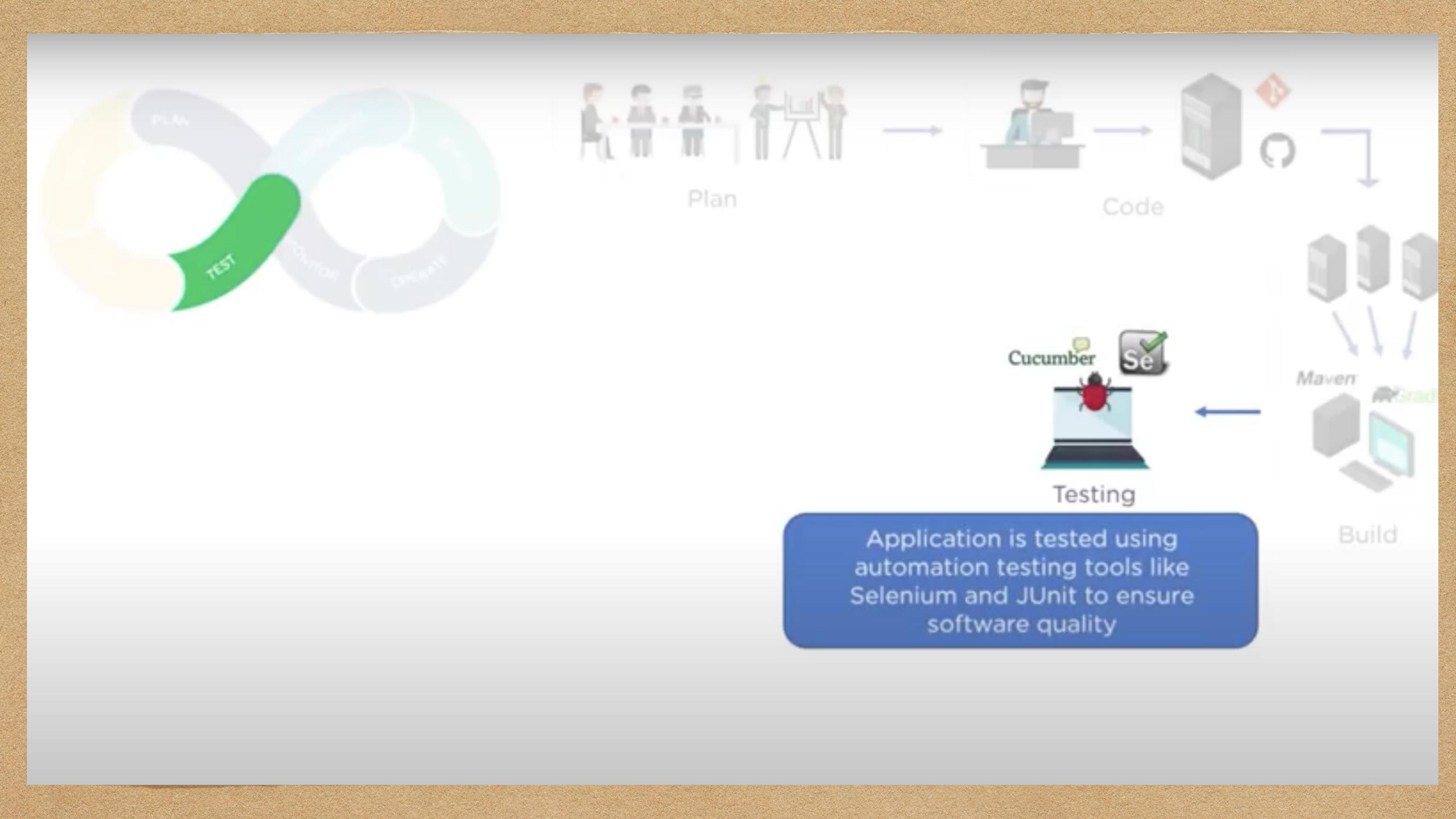


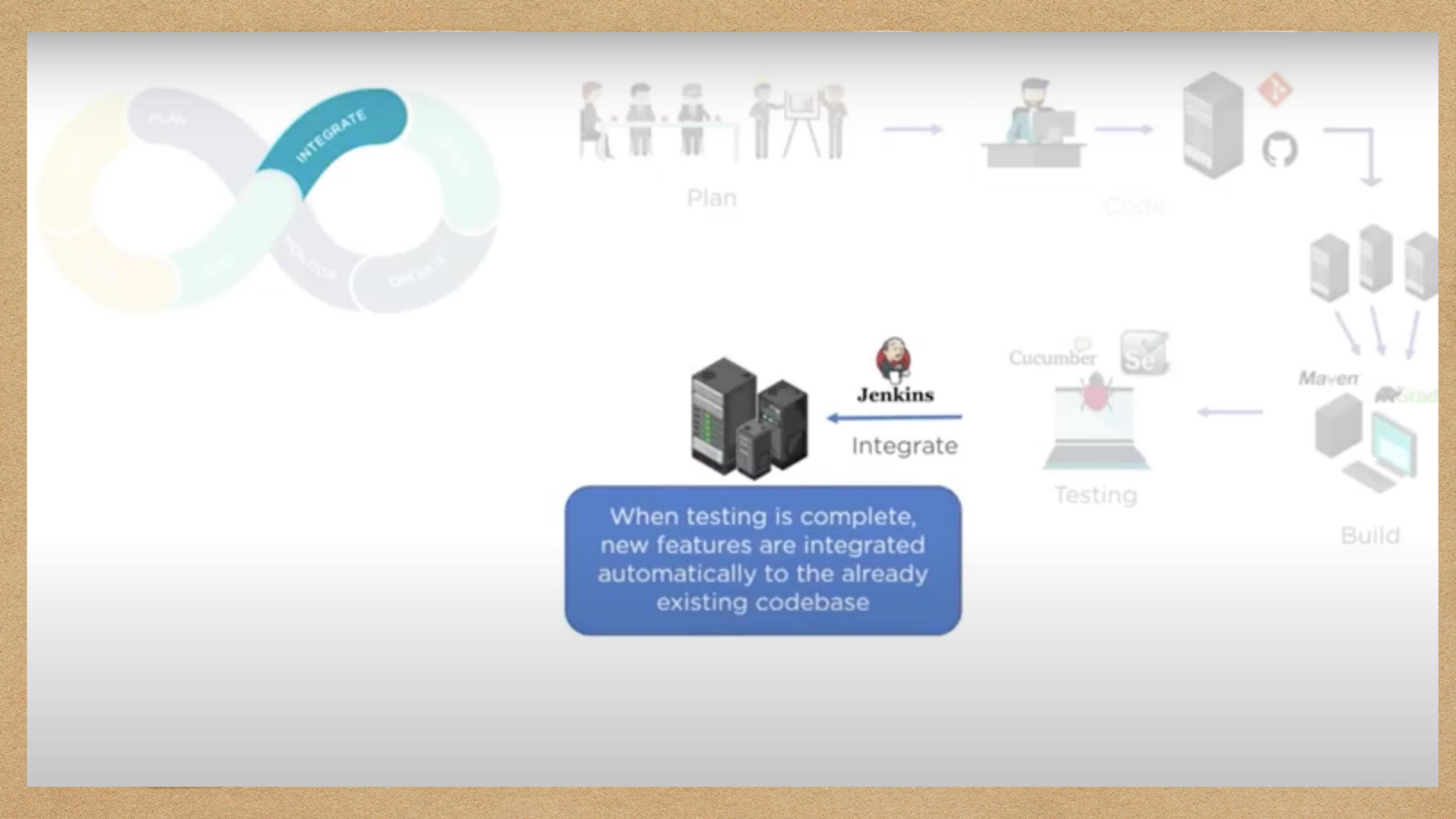


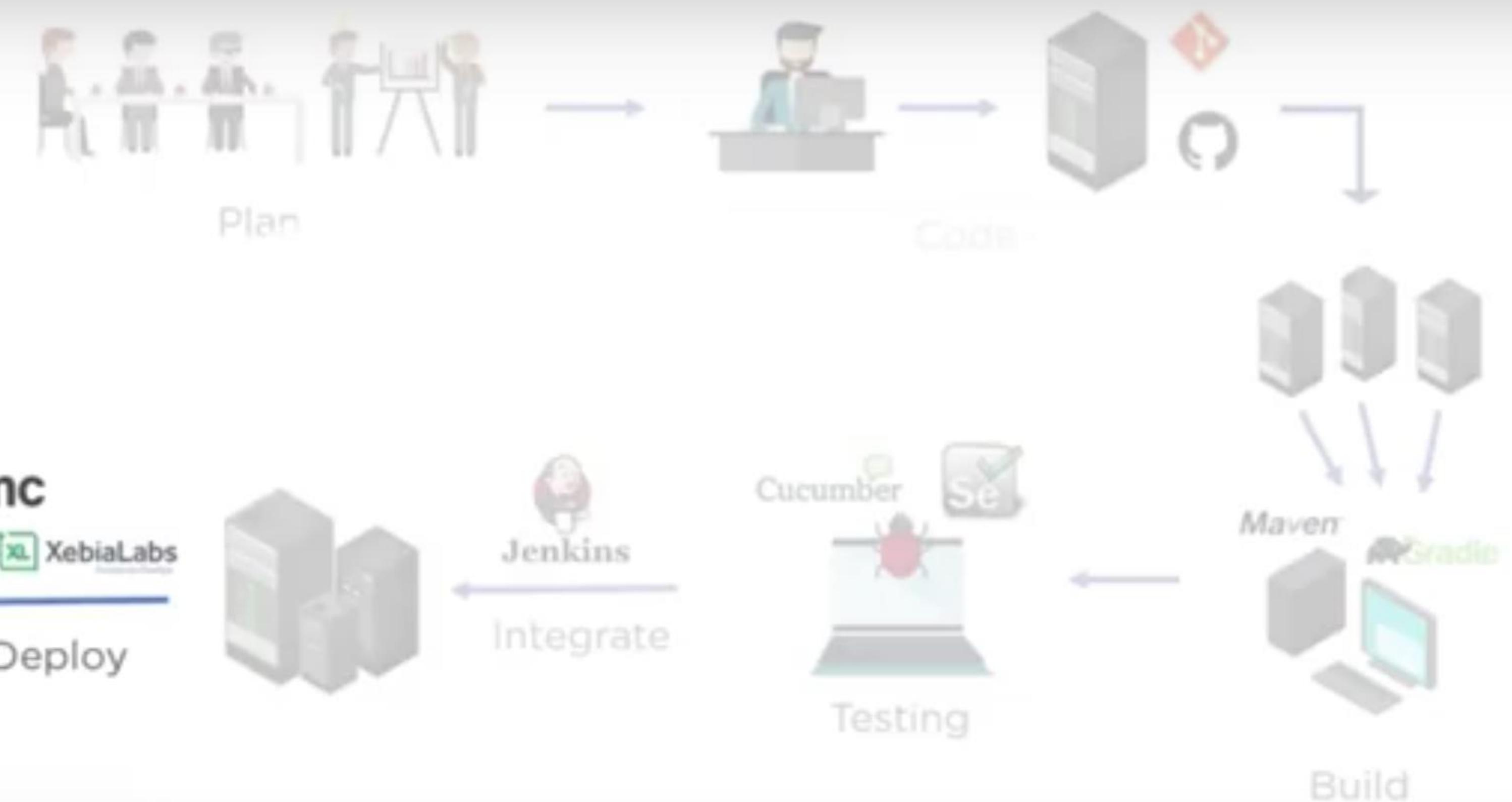
Plan

In plan stage, business owners and software development team discuss project goals and create a plan









bmc
XebiaLabs

Deploy



Jenkins

Integrate

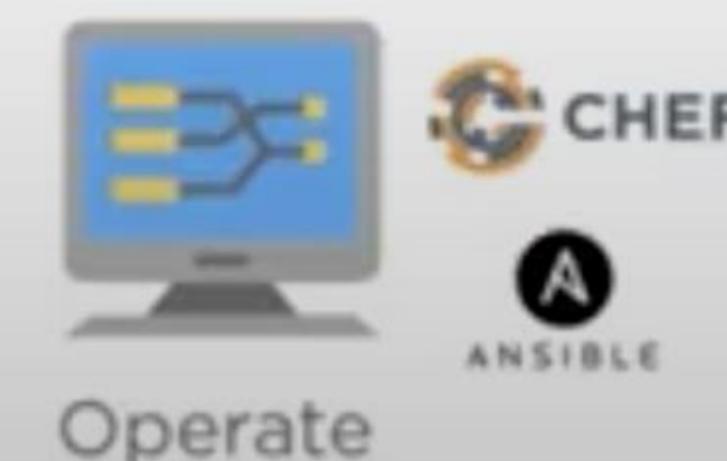
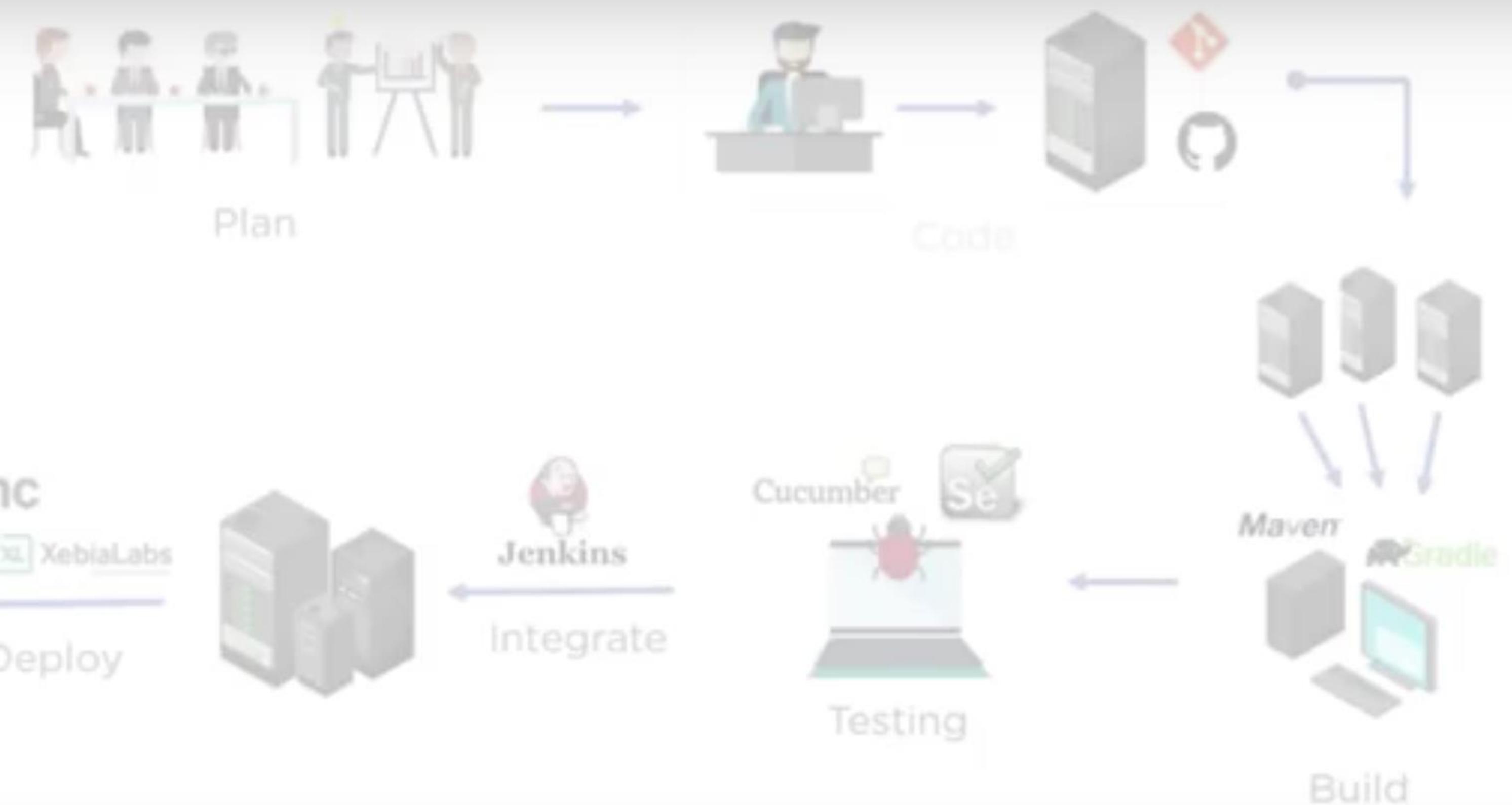
Cucumber
Se

Testing

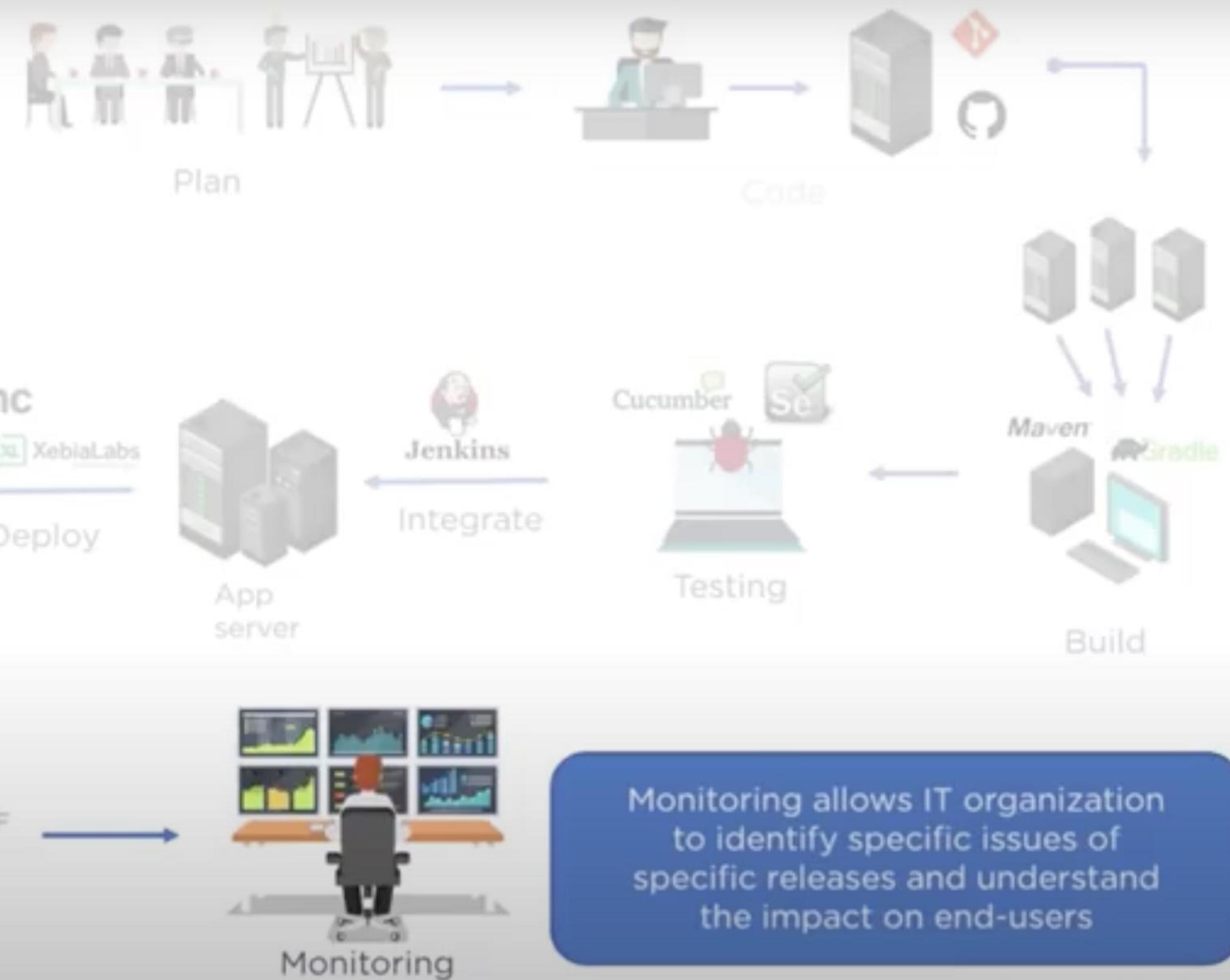
Maven
Gradle

Build

Application is packaged
after release and deployed
from development server to
production server

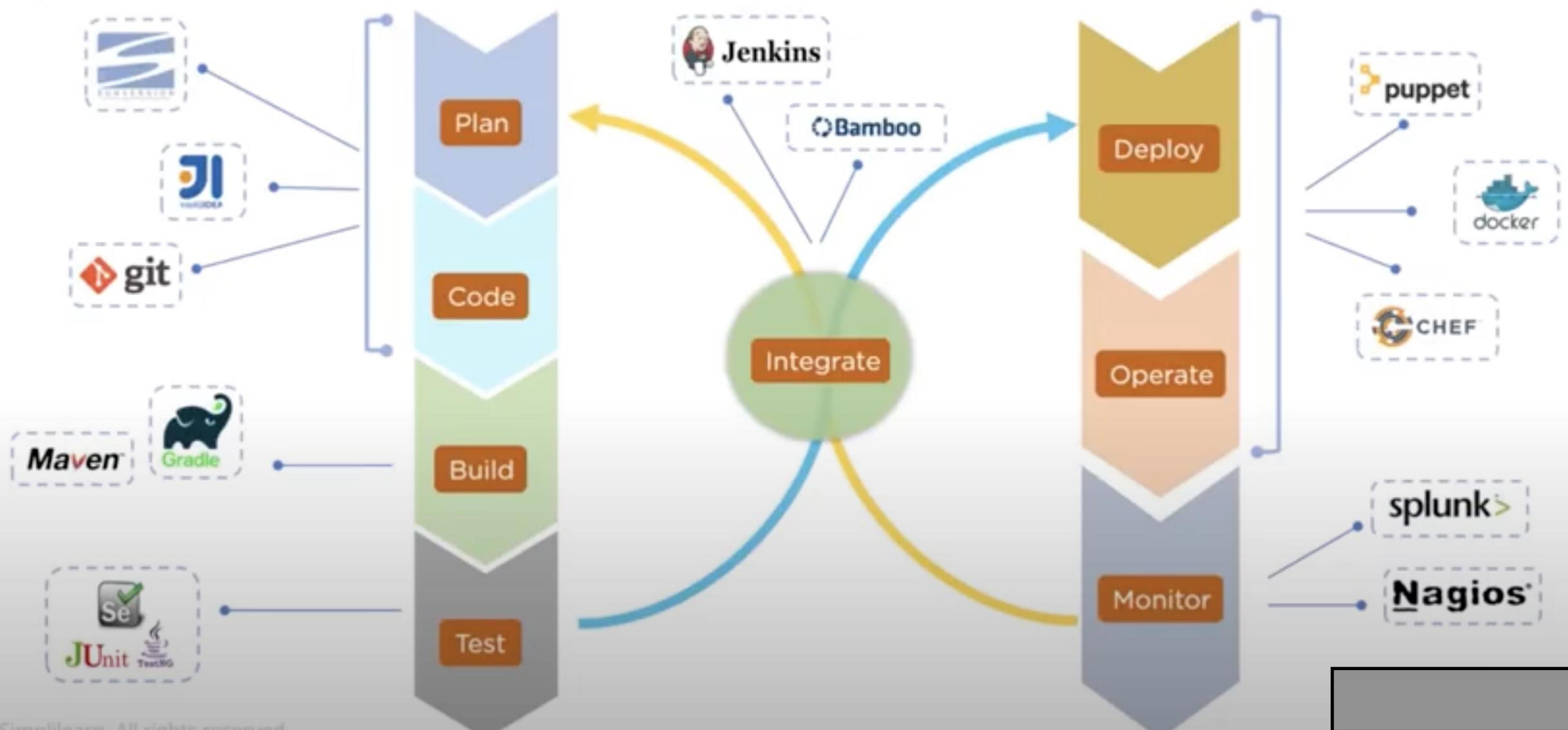


Once software is deployed, operations team perform activities such as configuring servers and provisioning them with the required resources

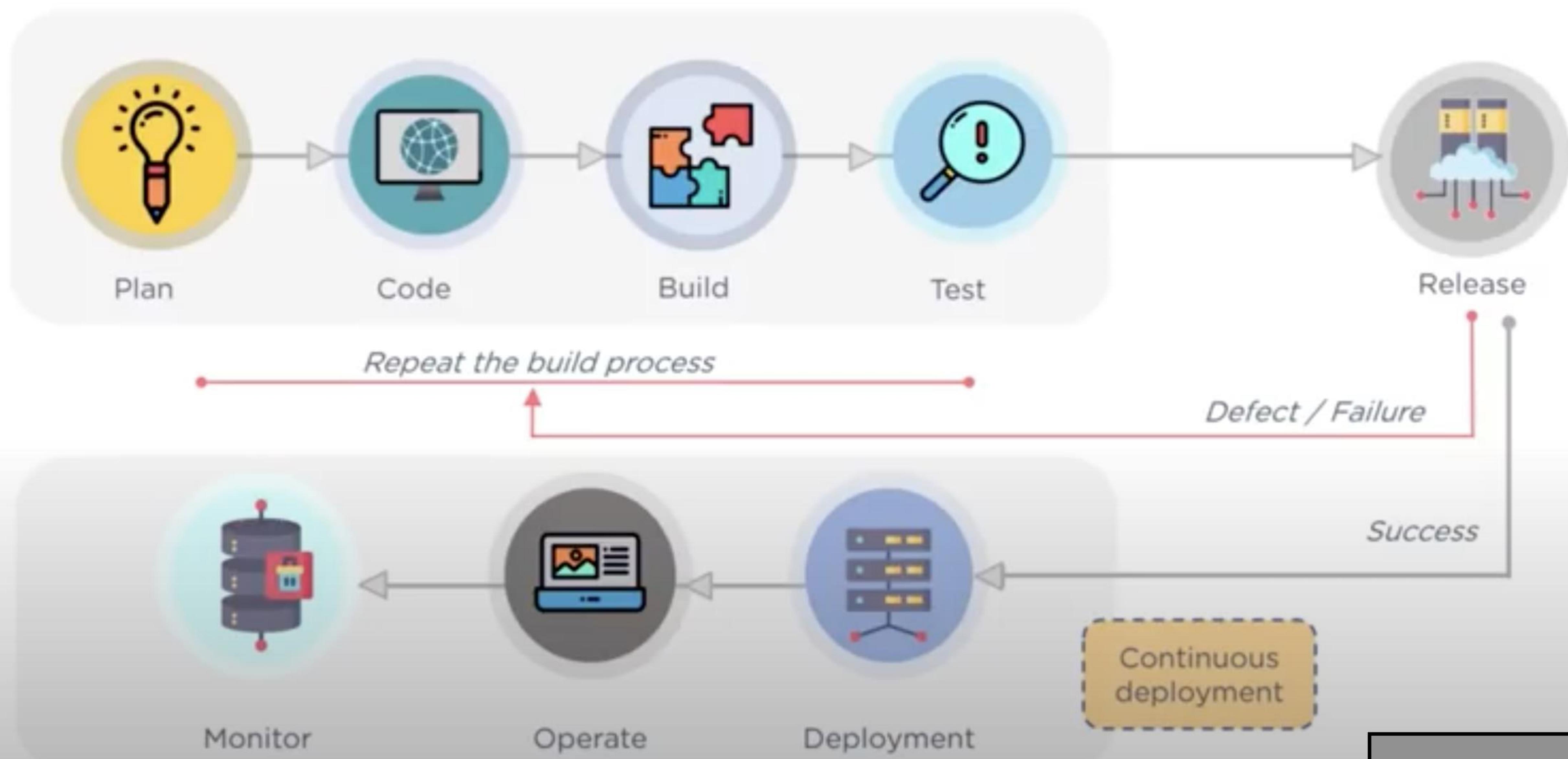


Monitoring allows IT organization
to identify specific issues of
specific releases and understand
the impact on end-users

DevOps Tools



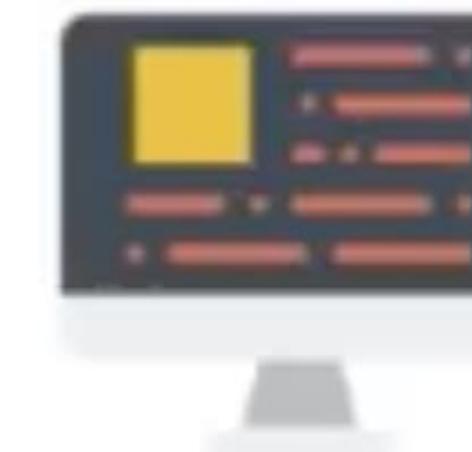
Continuous Deployment



DevOps Advantages



Time taken to create and deliver software is reduced



Complexity of maintaining an application is reduced



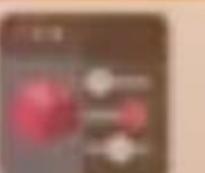
Improved collaboration between developers and operations team



Continuous integration and delivery ensure faster time to market

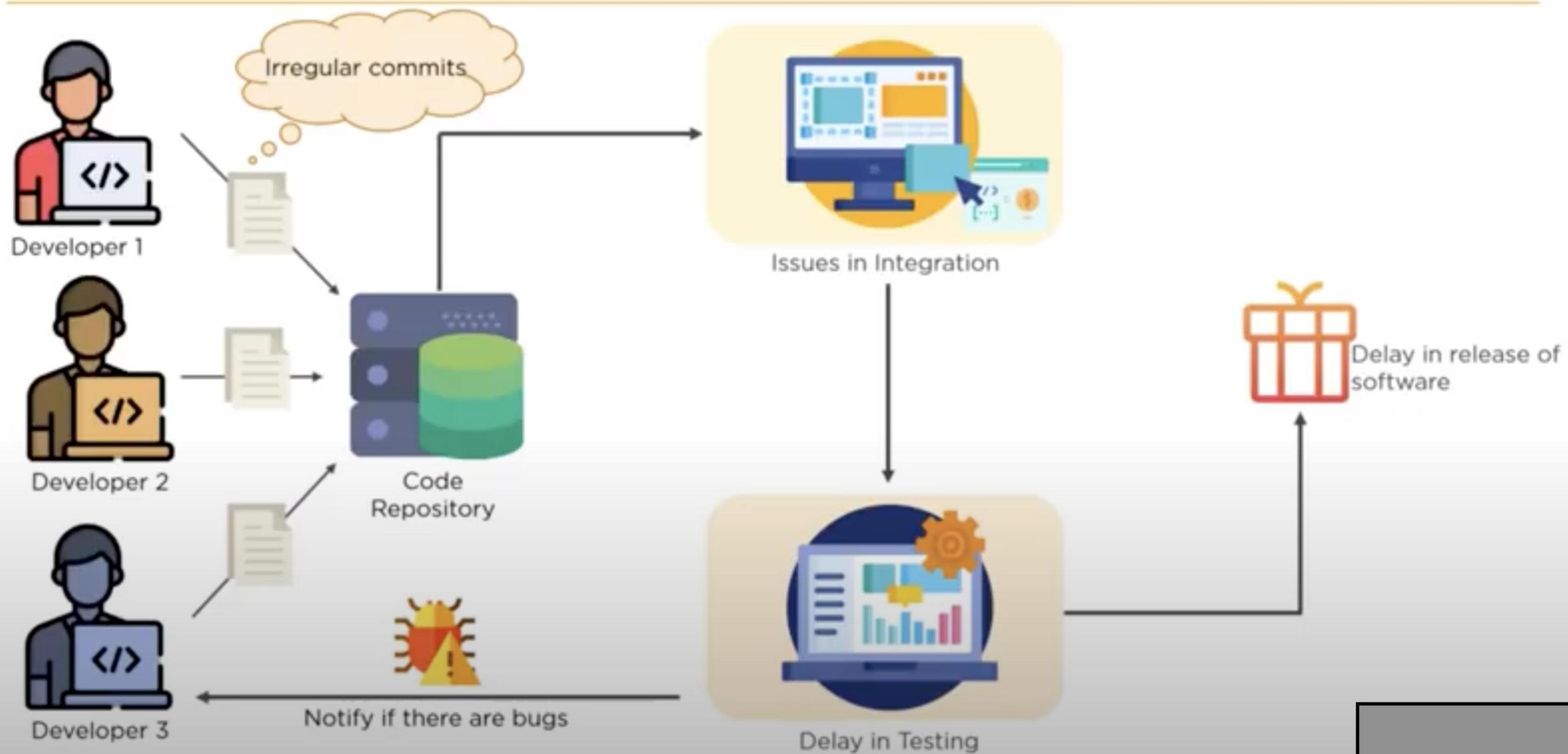
Install Jenkins

What's in it for you?

-  ► Install Java Development Kit
-  ► Set environment variable for jdk
-  ► Download and install Jenkins
-  ► Run Jenkins on localhost 8080
-  ► Jenkins server interface
-  ► Build and run a job on Jenkins



Before Jenkins



What is Jenkins?

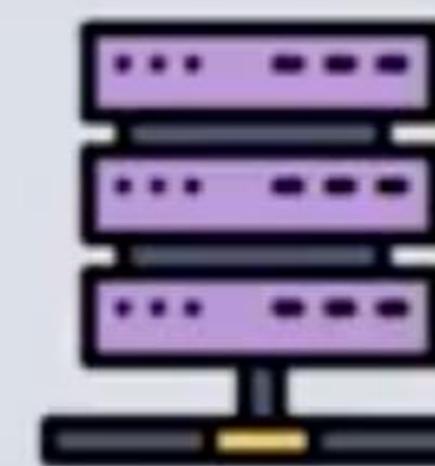
Jenkins is a Continuous Integration tool that allows continuous development, test and deployment of newly created codes



Commit changes to the source code

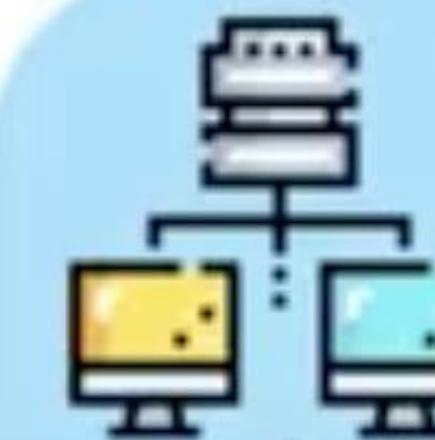


All the codes will be pulled only at night



All the changes made to the code are build together

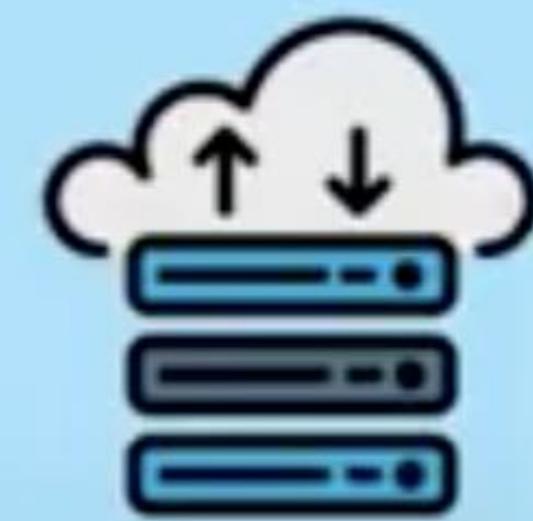
Nightly build and integration



Commit changes to the source code



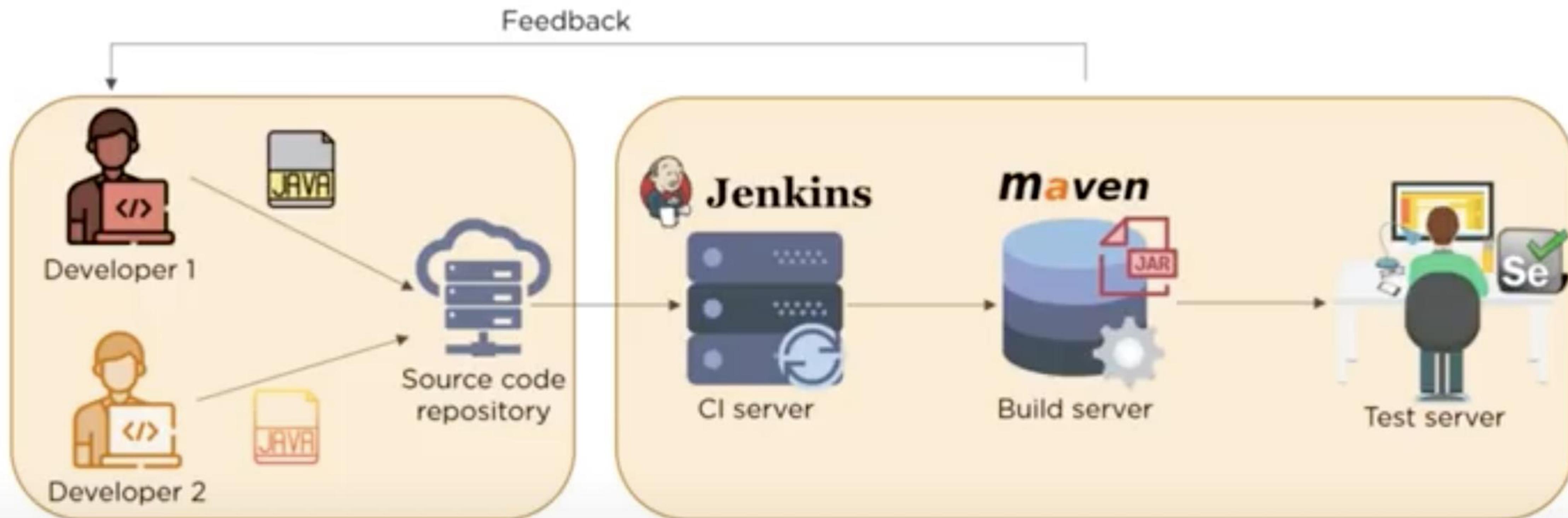
Code is pulled whenever there is a commit made to the source code



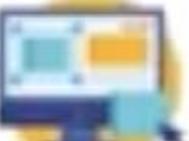
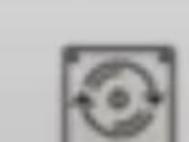
All the changes made to the source code is build continuously

Continuous build and Integration

Jenkins Architecture



Jenkins then deploys the build application on to test server for testing. If the test fails, feedback is immediately passed on to the developers

-  Prerequisites and Installation
-  Jenkins typical configurations
-  Create new users and manage permissions
-  Build freestyle jobs and schedule its run
-  Integrate GitHub with Jenkins
-  SMTP configuration for sending emails
-  Deploy Maven based web-app to Tomcat server
-  Distributed build: Master - Slave configuration and set-up
-  Backing up Jenkins

