Introduction to SDLC and Role of DevOps

Open Question!

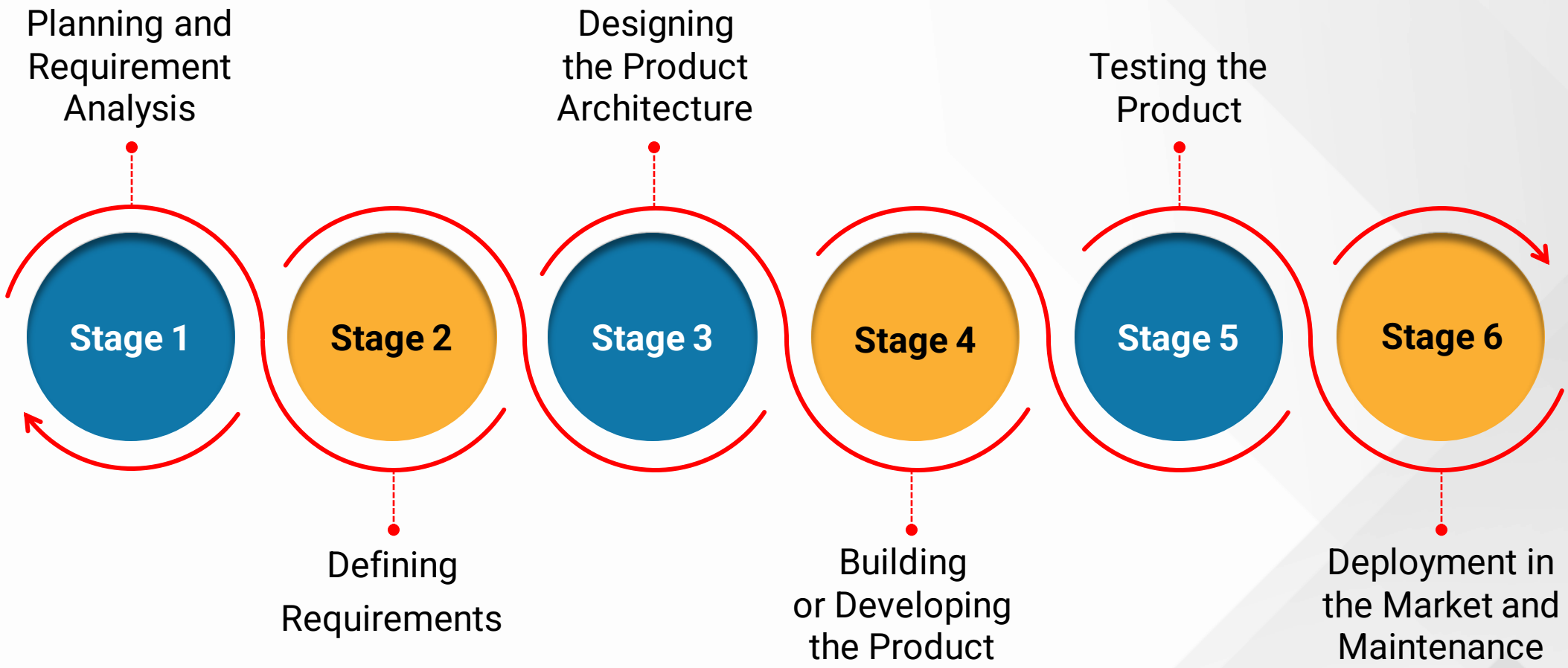
What do you think is the most important part of software development industry?

Introduction to SDLC

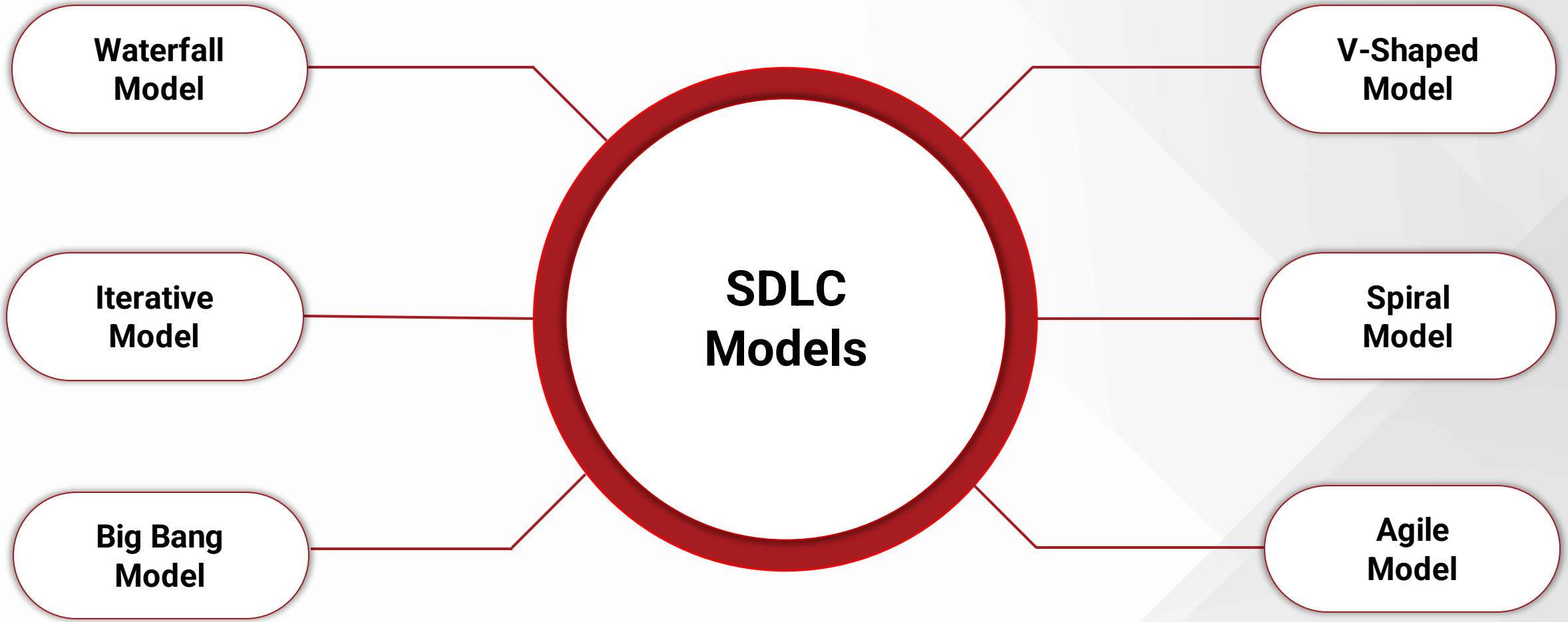
- SDLC stands for Software Development Life Cycle.
- A framework defining tasks performed at each step in the software development process.
- ISO/IEC 12207 is an international standard for software life-cycle processes.

Phases of SDLC

There are 6 phases in SDLC:



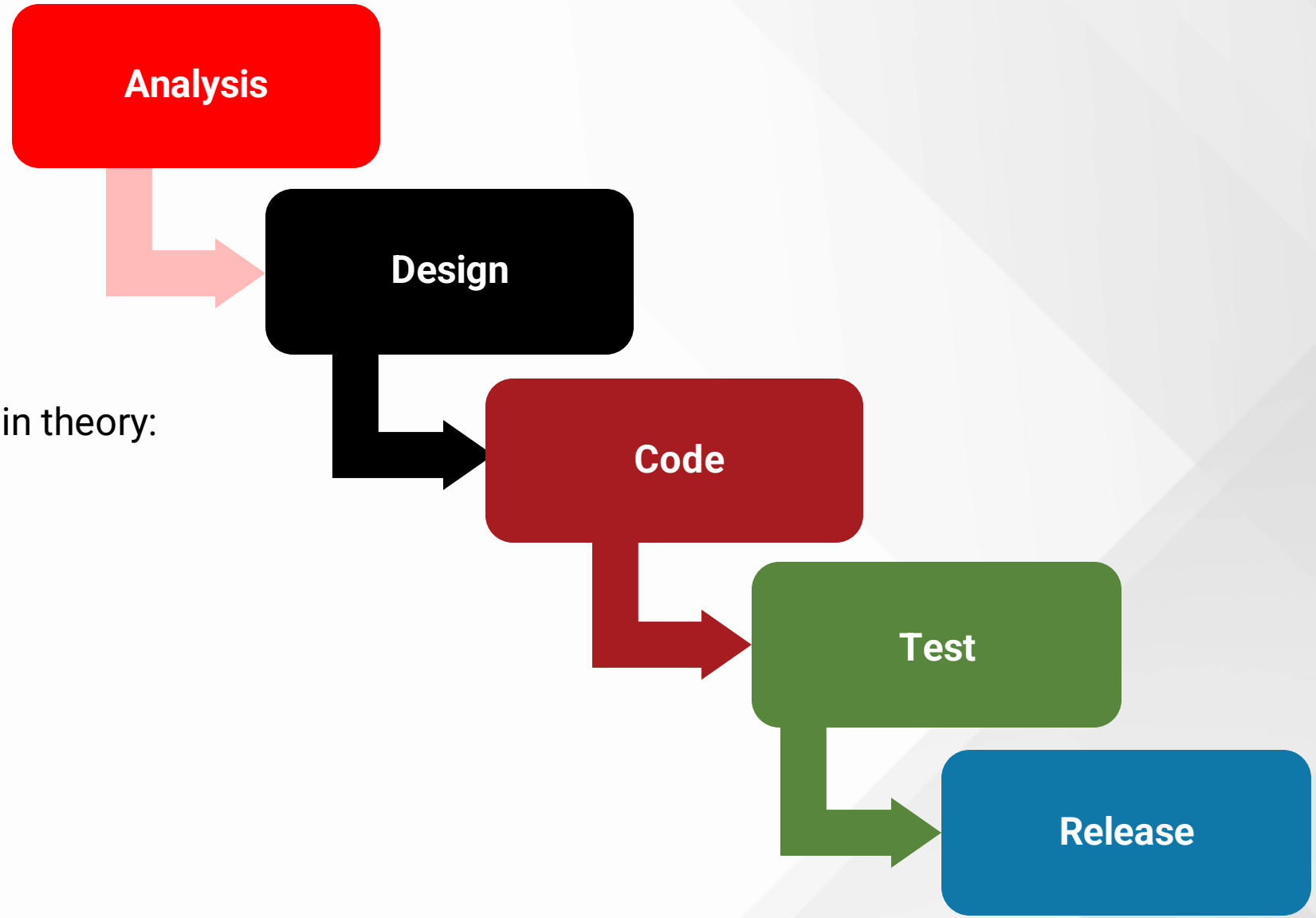
SDLC Models


Waterfall Model
Iterative Model
Big Bang Model
SDLC Models
V-Shaped Model
Spiral Model
Agile Model

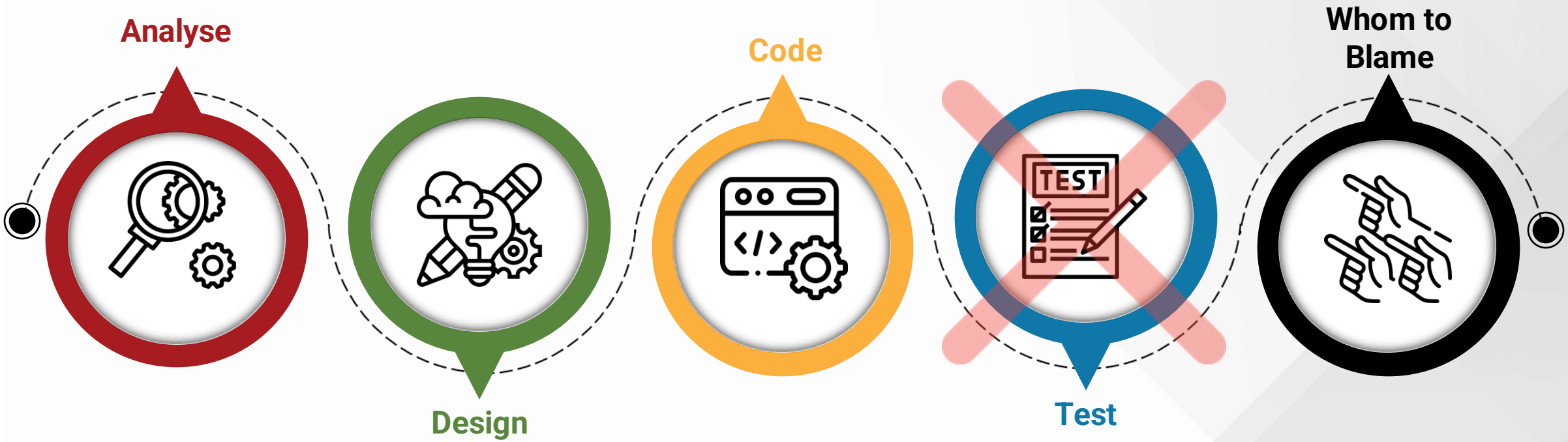
Waterfall Model

Waterfall Model

Waterfall model and its steps in theory:



Waterfall Model in Practice



Problems in Traditional SDLC Models

- Feedback comes late
- Ineffective utilization of resources
- Everything changes – (that's a reality of life!)
- Requirements change
- User acceptance criteria changes
- Technology changes
- People change

Agile Model

Agile Model

Agile is an ideology that led to the development of several frameworks.

Some examples are :

- SCRUM
- XP
- SafeAgile (Most Recent)

Agile is a mindset

Agile Concepts

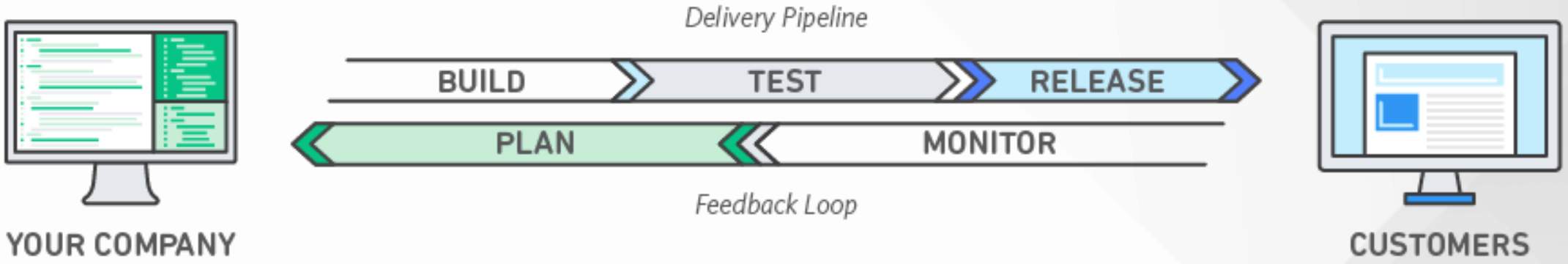
- Short Feedback Loops
- Just-in-time Requirements and Design
- Deliver Incremental Value
- Release Ready Deliverables
- Sustainable Pace
- Lean Management Hierarchy
- Self Organizing Teams

DevOps

Introduction

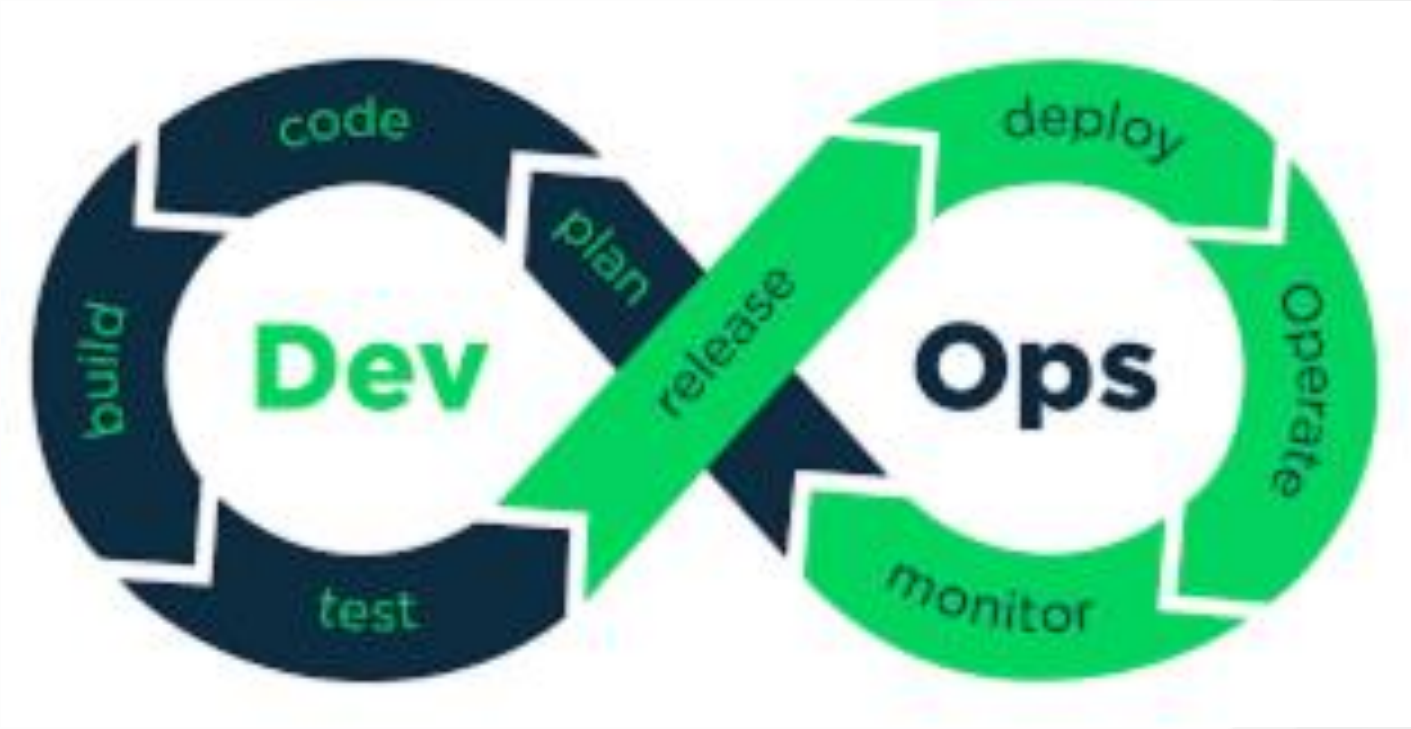
Defining DevOps

DevOps is the combination of cultural philosophies, practices, and tools that increases an organization's ability to deliver applications and services at high velocity .



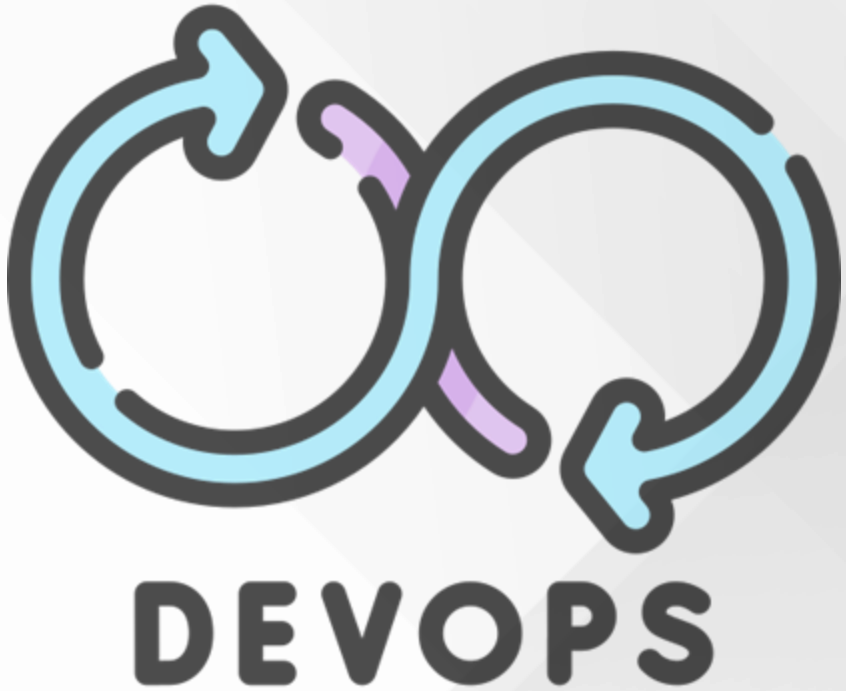
Phases in DevOps

There are **8 phases** in DevOps which continues move on.



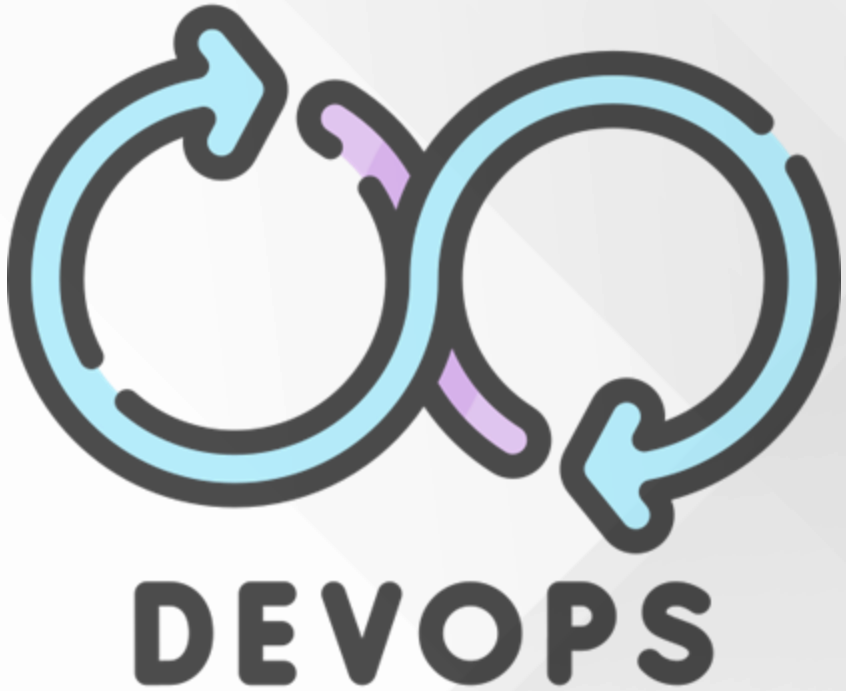
DevOps practices

- Continuous integration
- Continuous delivery
- Situational awareness
- Automation
- Infrastructure as Code
- Microservices
- Monitoring



Job Profiles in DevOps

- DevOps Evangelist
- Build Engineer
- Release Manager
- Automation Architect
- Product Manager
- DevOps Software Developer
- Security Engineer



Activity

Open Question!

What do we have to do as a DevOps Engineer?

Oversee and/or facilitate code releases or deployments on a CI/CD basis.

Roles and Responsibilities

Roles and Responsibilities

- Implementing various development, testing, automation tools, and IT infrastructure
- Setting up tools and required infrastructure
- Defining and setting development, test, release, update, and support processes for DevOps operation
- Have the technical skill to review, verify, and validate the software code developed in the project.
- Encouraging and building automated processes wherever possible

Roles and Responsibilities

- Monitoring the processes during the entire lifecycle for its adherence and updating or creating new processes for improvement and minimizing the wastage
- Identifying and deploying cybersecurity measures by continuously performing vulnerability assessment and risk management
- Selecting and deploying appropriate CI/CD tools
- Monitoring and measuring customer experience and KPIs

Day to Day Responsibilities!

- Project management
- Designing and improving IT infrastructure
- Performance testing and benchmarking
- Automation
- Optimizing release cycles
- Monitoring and reporting
- Security

Tools

- Automation tools (e.g., Jenkins, Bamboo)
- Source code management (e.g., Git)
- Repository hosting (e.g., Github, Bitbucket)
- Containerization software (e.g., Docker, Kubernetes)
- Configuration management (e.g., Puppet Enterprise, Ansible, Chef)
- Monitoring software (e.g., Nagios, Raygun)
- Project management solutions (e.g., Jira, Trello)

Assessment Question

Assessment Question - 1

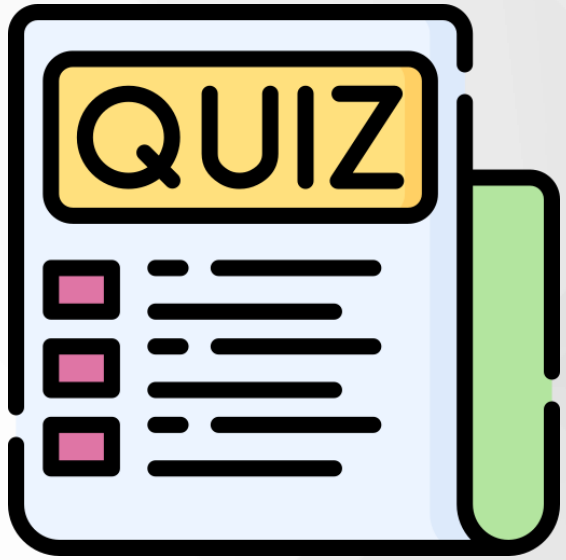
Which model is mostly preferred in SDLC?

01 Waterfall

02 RAD

03 Agile

04 None of the above



Assessment Question - 2

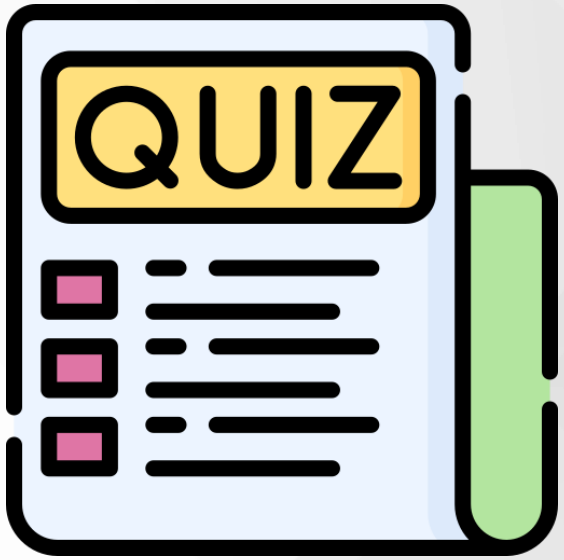
SCRUM is framework of:

01 Waterfall

02 RAD

03 Agile

04 None of the above

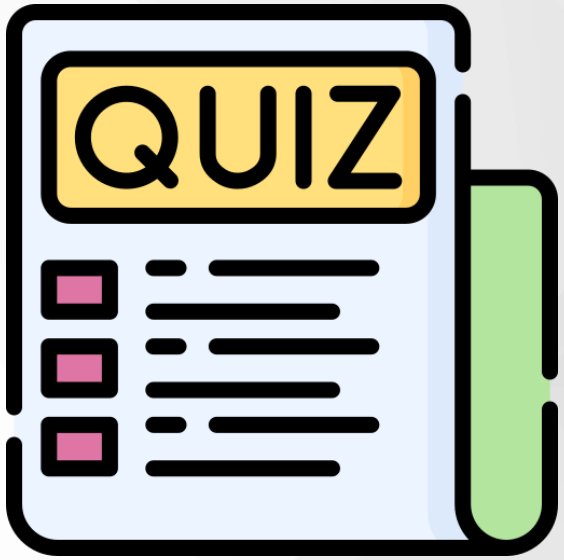


Assessment Question - 3

Is monitoring part of DevOps?

01 True

02 False



Assessment Question - 4

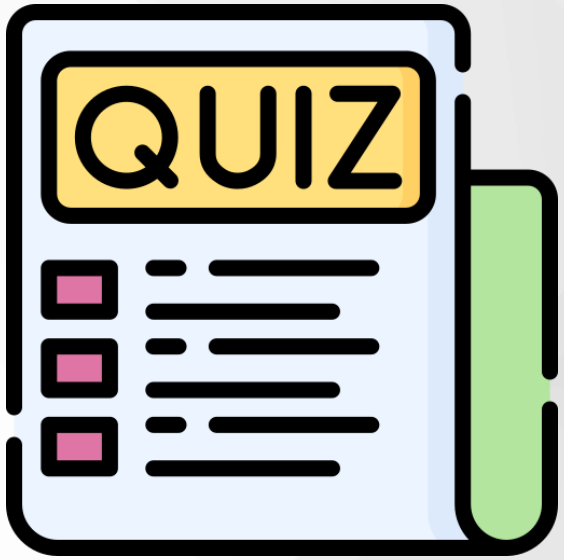
Which among the following is project management tool?

01 Jira

02 Github

03 Docker

04 Trello



Thank You!

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