Jesutofunmi Adeboye

DEVOPS FROM
ZERO TO HERO

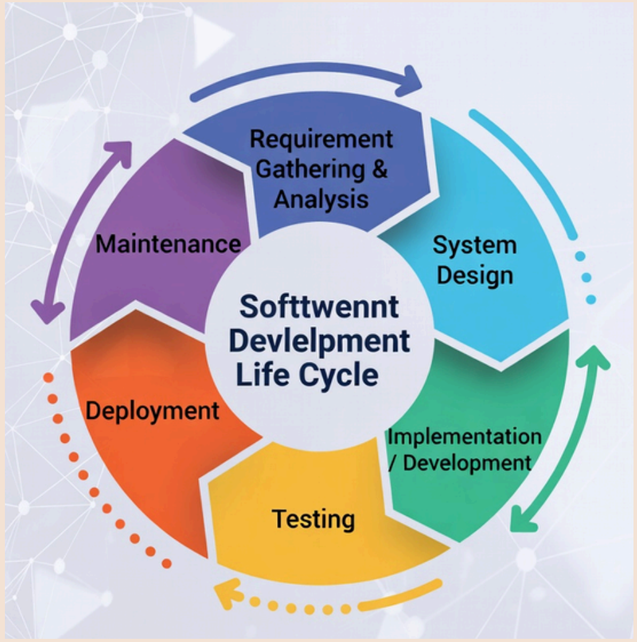
SECTION 2

UNDERSTANDING SDLC AND DEVOPS

What is SDLC?

SDLC - Software Development Life Cycle

The Software Development Life Cycle (SDLC) is a structured process used by software engineers, developers and the entire team to design, develop, test, and deploy software efficiently and systematically. It ensures high-quality software is delivered on time, meets business requirements, and is maintainable over time.



Phases of SDLC

- Requirement Gathering & Analysis
- System Design
- Implementation / Development
- Testing
- Deployment
- Maintenance

Jesutofunmi Adeboye

Phase 1: Requirement Gathering & Analysis

- This is where the planning starts to understand what the client or end-user wants.
- Meet with stakeholders to gather functional and non-functional requirements.
- Document requirements clearly.
- Feasibility study (technical, financial, operational).

Phase 2: System Design

- This phase defines how the system will meet the requirements.
- High-level architecture (overall system design).
- Low-level design (database schema, module design, APIs).
- Decide technology stack (programming languages, frameworks, tools).

Jesutofunmi Adeboye

Phase 3: Implementation / Development

- The developers write the code for the software.
- Developers code based on design documents.
- Follow coding standards and version control practices.
- Continuous integration for testing code modules.

Phase 4: Testing

- The team ensures the software works correctly and meets requirements.
- Unit testing.
- Integration testing.
- System testing.
- User Acceptance Testing (UAT) with clients.

Jesutofunmi Adeboye

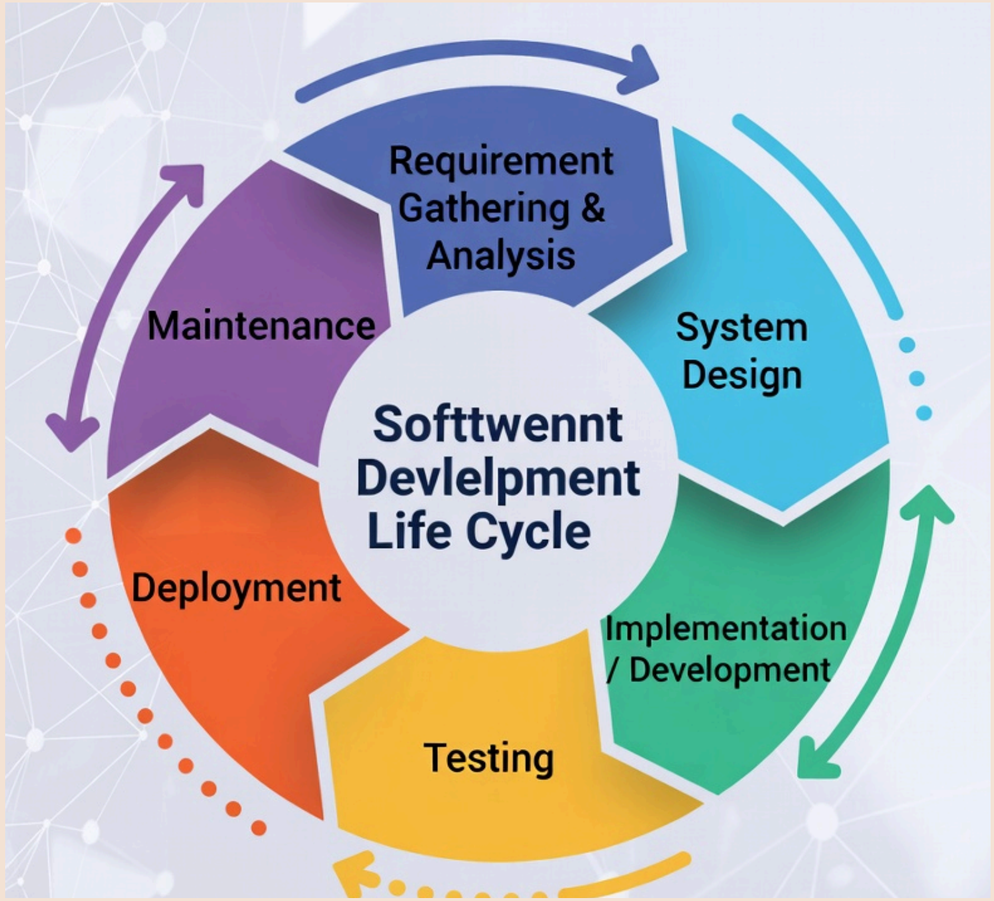
Phase 5: Deployment

- Make the software available to users.
- Deploy software to production servers or app stores.
- Provide user training and documentation.
- Initial monitoring for errors or bugs.

Phase 6: Maintenance

- Ensure software continues to work and improve over time.
- Fix bugs reported after deployment.
- Update software with new features.
- Optimize performance and security.

Jesutofunmi Adeboye


Requirement Gathering & Analysis
System Design
Implementation / Development
Testing
Deployment
Maintenance
Softtwennt Devlelpment Life Cycle

DEVOPS FROM
ZERO TO HERO

SDLC Phases & Job Roles

1. **Requirement Gathering & Analysis**
- Product Manager / Product Owner
- Business Analyst (BA)
- CEO / CTO
- Customer Support / Operations

2. **System Design**
- UI/UX Designer
- CTO / Technical Architect
- Back-End & Front-End Developers

3. **Implementation / Development**
- Front-End Developer
- Back-End Developer
- Full-Stack Developer
- CTO / Tech Leads

4. **Testing**
- Quality Assurance (QA) / Testers
- Developers
- Product Manager

5. **Deployment**
- DevOps Engineer
- Developers
- CTO

6. **Maintenance**
- DevOps Engineer
- Developers
- QA / Testers
- Customer Support / Operations

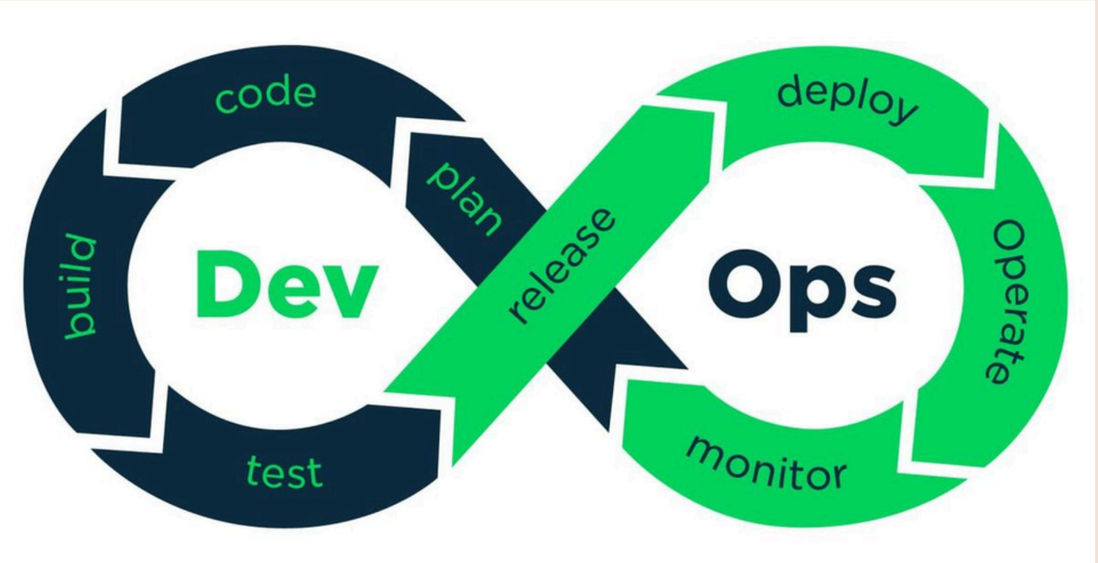
Jesutofunmi Adeboye

DevOps Lifecycle

The DevOps lifecycle is how teams plan, build, release, run, and improve software continuously. It focuses on speed, automation, collaboration, and feedback between developers and operations teams.

Phase 1: Plan

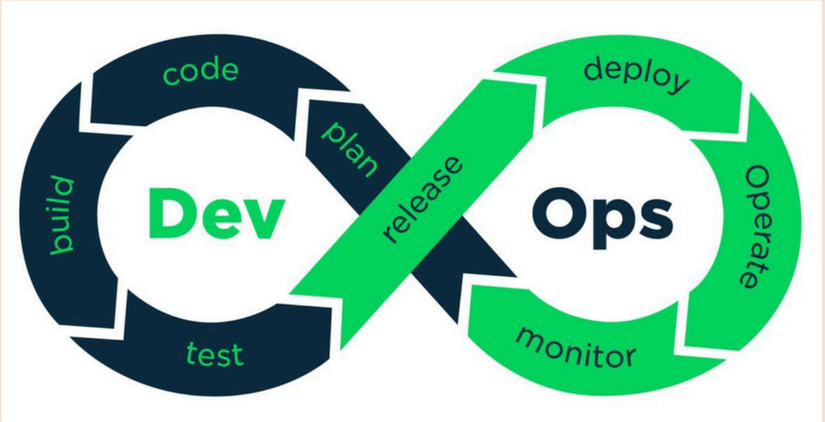
- Decide what features to build
- Gather user and business requirements
- Create product backlog and timelines
- Align developers and operations on goals



Jesutofunmi Adeboye

Phase 2: Code

- Developers write application code
- Use version control tools (e.g., Git)
- Review code to ensure quality and standards
- Collaborate as a team on the same codebase



Phase 3: Build

- Convert source code into a runnable application
- Compile code and resolve dependencies
- Package the application (e.g., Docker images)
- Automate builds using CI tools

Phase 4: Test

- Run automated and manual tests
- Check for bugs, errors, and performance issues
- Ensure new changes don’t break existing features
- Validate software quality before release

Jesutofunmi Adeboye

Phase 5: Release

- Run automated and manual tests
- Check for bugs, errors, and performance issues
- Ensure new changes don’t break existing features
- Validate software quality before release

Phase 6: Deploy

- Approve the tested code for production
- Prepare release versions
- Manage release schedules
- Ensure all checks and approvals are completed

Phase 7: Operate

- Keep the application running smoothly
- Manage servers, cloud infrastructure, and services
- Handle incidents and system failures
- Ensure security and reliability

Jesutofunmi Adeboye

Phase 8: Monitor

- Track application performance and uptime
- Monitor errors, logs, and user behavior
- Detect issues early before users complain
- Use feedback to plan improvements

SDLC Phase	DevOps Involvement
Requirements / Analysis	Plan
Design	Still part of Plan, with continuous feedback
Development	Code & Build
Testing	Test
Deployment	Release & Deploy
Maintenance	Operate & Monitor

How DevOps Improves the SDLC Process

- Improves collaboration between teams
- Speeds up software delivery
- Enables Continuous Integration (CI)
- Enables Continuous Delivery/Deployment (CD)
- Improves software quality
- Detects bugs early
- Reduces deployment failures
- Makes deployments consistent
- Improves system reliability
- Enhances monitoring and feedback

Jesutofunmi Adeboye

DEVOPS FROM
ZERO TO HERO

END OF SECTION

Jesutofunmi Adeboye