CSE 411
Software Engineering and System Analysis and Design

Topic 8: Software Maintenance

Software Maintenance

Software maintenance is a part of the Software Development Life Cycle. Its primary goal is to modify and update software application after delivery to correct errors and to improve performance.

Software Maintenance is needed for:-

- Correct errors
- Change in user requirement with time
- Changing hardware/software requirements
- To improve system efficiency
- To optimize the code to run faster
- To modify the components
- To reduce any unwanted side effects.
- Thus the maintenance is required to ensure that the system continues to satisfy user requirements.

Causes of Software Maintenance Problems

Lack of Traceability

- Codes are rarely traceable to the requirements and design specifications.
- It makes it very difficult for a programmer to detect and correct a critical defect affecting customer operations.
- Like a detective, the programmer pores over the program looking for clues.
- Life Cycle documents are not always produced even as part of a development project.

Causes of Software Maintenance Problems

Lack of Code Comments

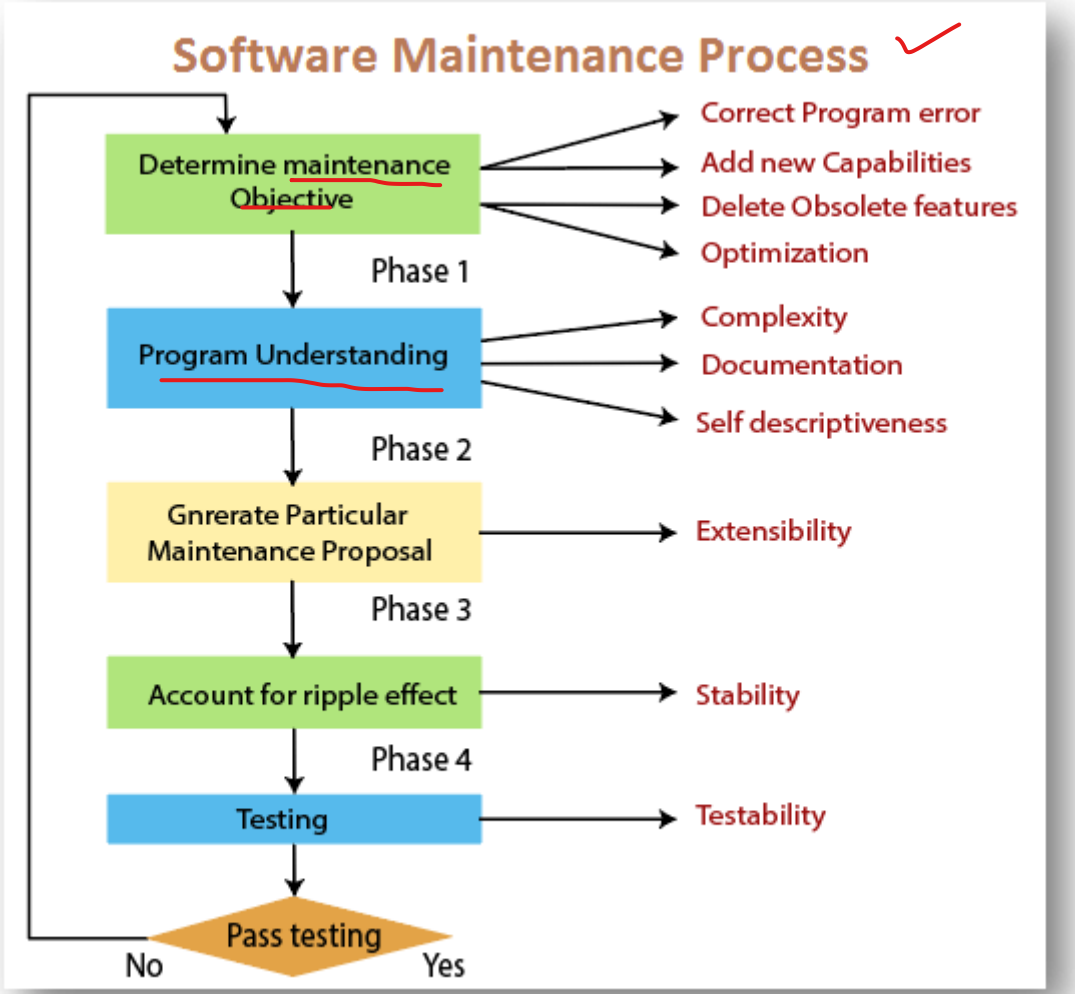
- Most of the software system codes lack adequate comments. Lesser comments may not be helpful in certain situations.

Causes of Software Maintenance Problems

Obsolete Legacy Systems

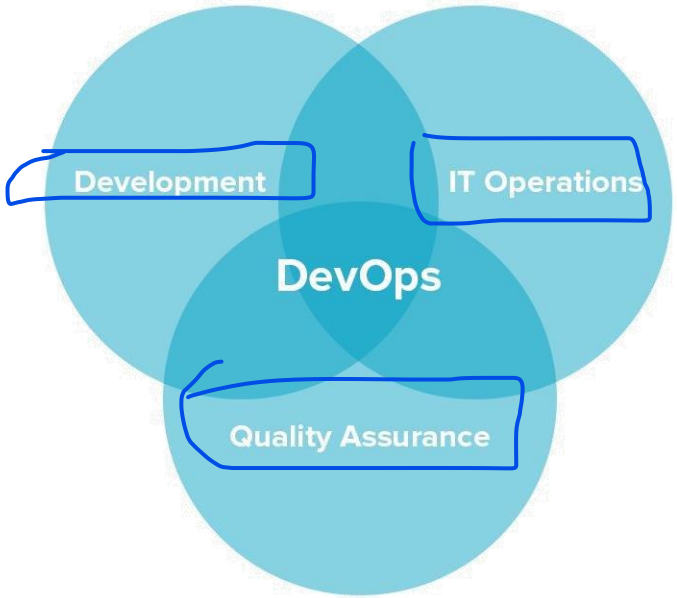
- In most of the countries worldwide, the legacy system that provides the backbone of the nation's critical industries, e.g., telecommunications, medical, transportation utility services, were not designed with maintenance in mind.
- They were not expected to last for a quarter of a century or more!
- As a consequence, the code supporting these systems is devoid of traceability to the requirements, compliance to design and programming standards and often includes dead, extra and uncommented code, which all make the maintenance task next to the impossible.

Software Maintenance Process

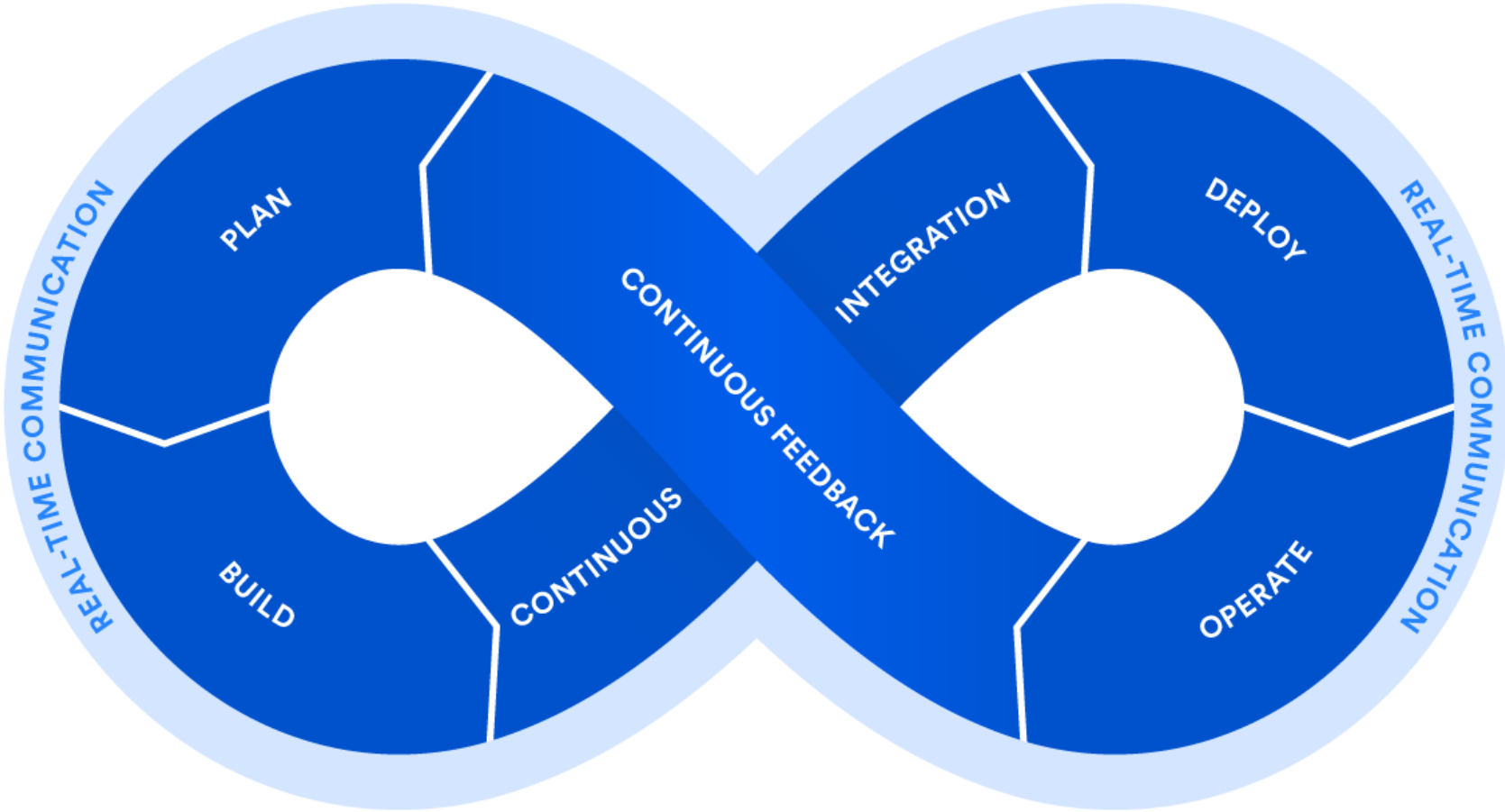


DEVOPS

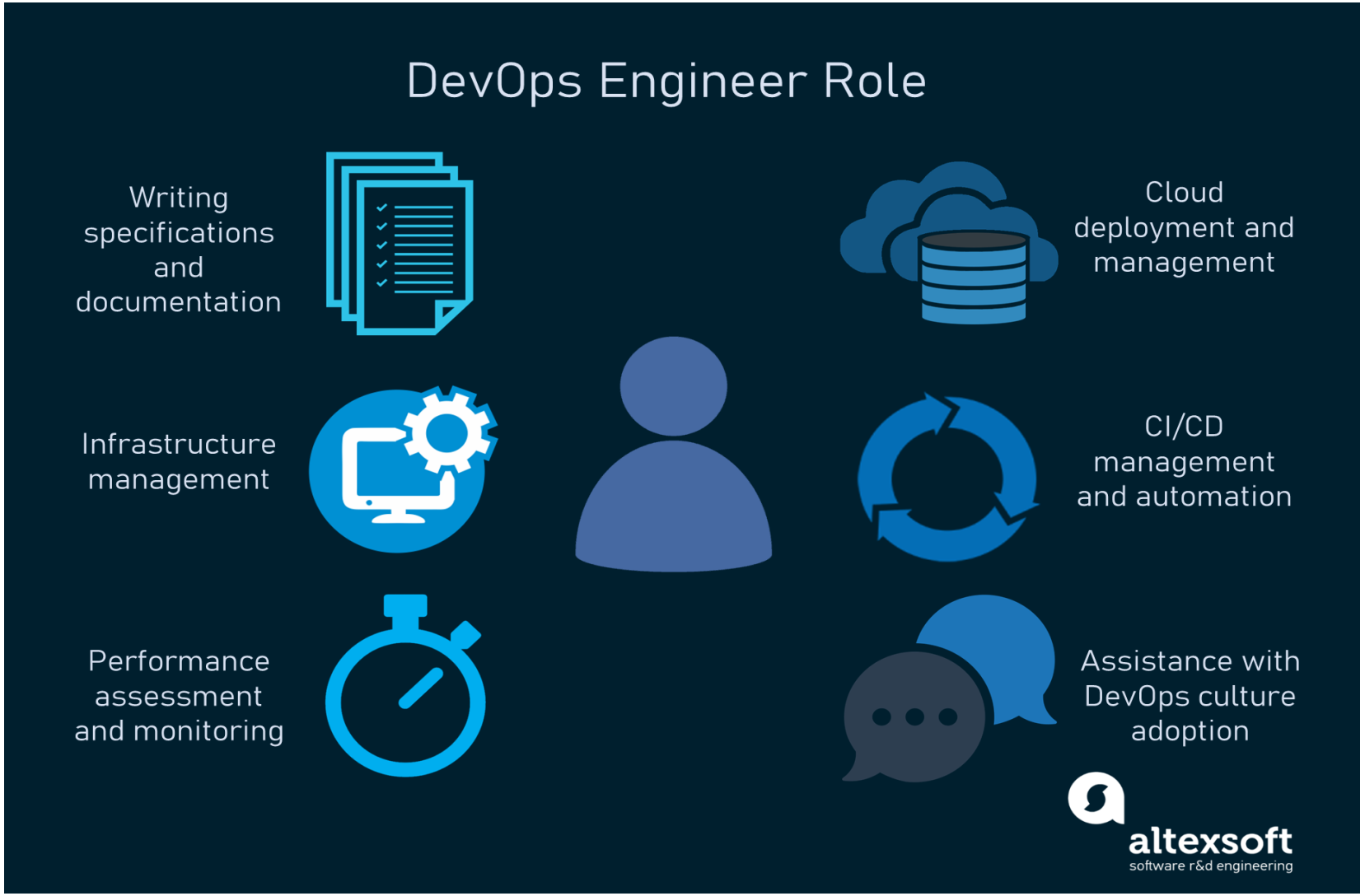
DevOps stands for development and operations. It's a practice that aims at merging development, quality assurance, and operations (deployment and integration) into a single, continuous set of processes. This methodology is a natural extension of Agile and continuous delivery approaches.



DevOps model and practices



DevOps engineer responsibilities



Read

https://www.altexsoft.com/blog/engineering/devops-principles-practices-and-devops-engineer-role/

End of Topic 8