- Fundamental Concepts:
- Continuous Integration: the practice of merging all the developers work, in an Automated and Systematic process
- Benefit: Big short-cut to a lot of time consuming & Recuring processes so More Production is Achievable from Development-Team and it reduces costs

- Continuous Delivery: a Software engineered practice / approach for teams to produce and release software (code versions) in short cycles.
- Benefit: deliver to clients as quickly as possible

- Continuous Deployment: the practice of automating everything related to deploying the Software the Result of CI (ARTIFACT)
- Benefit: another major decrease in time consuming & Recuring processes so More Production is Achievable from Operations-Team || More control than continuous deliver and it reduce costs

- Benefits of the DevOps CI/CD Practice

- Help teams ship code to production faster by reducing manual tasks and making each step in the software development lifecycle (SDLC) consistent and repeatable.

- Shortens the feedback loop between developers / engineers and customers, by Delivers Required changes to "near-production-quality" in a much shorter time. Leading to more clients Satisfaction and Good Impressions.

- No more risk of human errors, by systemizing the software development and bring consistency to each stage and its corresponding output. So developers will focus on more important work.

- CI/CD can help produce bug-free code, by applying a consistent suite of automated tests and providing a feedback loop between team members.

- No more shipping large code changes that can take time to integrate and test with the code base, Because CI/CD Helps in delivering better software with less issues more consistently.

- Greatly enhances Teams Productivity, Because the effort and time consumed for merging small changes is much lower than large changes.

- detecting source of errors becomes much simpler, Because It is much easier for QA engineers to validate small changes iteratively in a consistent system.

- Features can get into the hands of customers in an earlier state. This means that if we're on the wrong track, we can change direction after only a small investment.

- Developers gets extra energy and more productivity, because of the gained confidence in delivering changes that might have seemed risky before.