UDACITY PROJECT 3: CI/CD BENEFITS PROPOSAL

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CI/CD BENEFITS PRESENTATION

▸ What is CI/CD

Continuous integration and continuous deployment is a set of capabilities and principles that allows software changes to be made in a secure, timely and repeatable manner through automation of the software development process

▸ CI/CD pipeline

CI/CD Pipeline is the cycle involved with the continuous integrations and continuous deployment automation process.

Beginning with code commits into a central repository e.g. GitHub, code merges and testing builds, CI validates the software development process stages through automation.

In addition, CD on the other hand ensures the artifact from CI is setup into the production environment in a fast and efficient way possible through automation of the distribution stages
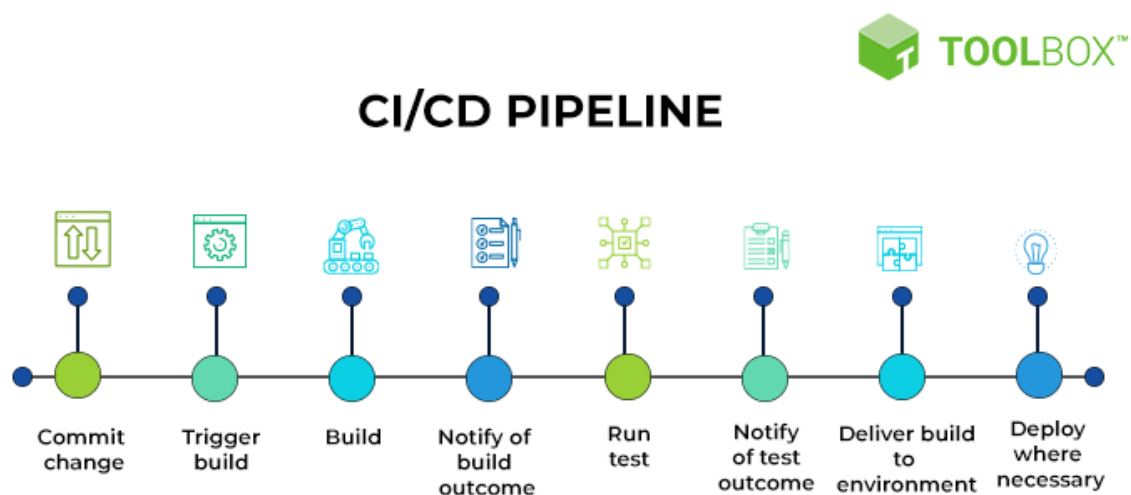

Image1 : courtesy – TOOLBOX

▸ Understanding CI/CD

When code is committed into a version control system such as GitHub, the process of continuous integration starts. The code is checked fr quality through scanning, linting or analysis. The final result of the CI process of the CI stage is created after automated tests such as integration tests and unit tests are successful.

Continuous Deployment begins at the end of continuous delivery and ensures that the output of the ci process is automatically setup in the production environment

▸ CI/CD Benefits

Efficiency

CI/CD leads to a high efficiency and increased productivity through the automation of the software development life cycle.

Reduced defects

CI/CD pipeline ensures that code is tested and validated frequently and helps the developers to identify and fix errors at the early stages of development

Fast Product delivery

An effective CI/CD Pipeline ensures that multiple releases can be made on a daily basis.

From builds, tests and features delivery, the ci/cd tools and processes ensure that new features and fixes can be delivered on a daily basis

Image2: courtesy – TOOLBOX

▸ Business Impact of CI/CD

Increase Product Marketability

Organizations are able to bring new products and features faster to the market by effectively implementing CI/CD. This in effect increases the revenue of the organization immediately

Increased Profits and Reduced Costs

The automation benefits of CI/CD across all projects allows developers to validate of stages from build to tests ensuring less bugs on production applications. This translates to lower development costs in building and testing of code changes and new features.

In addition, high quality products translate to great customer experience and increased profits

Customer Centric Products

CI/CD ensures that the products being pushed to the market are customer centric and able to meet customers requirements. This translates to better customer satisfaction and retainment.

Short time to value

CI/CD has enabled the delivery and tests of new features on a daily basis, development and testing teams can work in parallel to release better features continuously. The benefits of time allows developers to be more productive to the organization

Improved App Quality

A business case value for CI/CD is the incremental code improvements. This enables organizations to maintain and improve the quality standards of the applications being put to production. Bugs are identified at early stages and fixed before the features are deployment to the final products. Also roll backs to previous stable version is seamless without having any significant impact to the business.