Introduction

SPEED (Structured Project Execution and Engineering Discipline) framework has helped Synechron deliver high quality software, build competitive advantage and improve customer satisfaction.

SPEED provides detailed guidelines on Engineering and SDLC practices and implementation of these practices depends on the project maturity. These best practices help us to adapt to new circumstances, increase efficiency and ensure that we develop, manage and deliver a better product.

The Framework is a collection of 30 best practices used across the industry. These best practices are divided into Estimation, Project Management, Engineering, Quality Control, Release Management and Quality Management. The framework provides the flexibility to select the best practices for a project based on Project maturity.

Classification of Projects

In SPEED, projects are classified based on the expected maturity scores. Various project attributes are considered for the classification, such as the expected development effort, criticality of the business area, team size and complexity.

- High Maturity projects – Involve Large Scale Development effort (more than 15 man-months) or Business Critical Development
- Medium Maturity projects – Involve Complex projects or New Application development
- Low Maturity projects – Involve Small teams (less than 5) or Maintenance projects

Delivery of High Quality Code

SPEED specifies various ways by which high quality code can be delivered. Some of them are –

- ### Basic Engineering Guidelines

  Adhering to the Basic Engineering Guidelines enables high quality of code. These guidelines are further categorized under 5 sub-groups:

  - **Clean** code guidelines ensure readability and maintainability without hampering performance, security, and scalability.
  - **Secure** code guidelines ensure that known security vulnerabilities are taken care of.
  - **Defensive** code guidelines ensure that fewer assumptions are made while coding and that all possible error conditions are handled by the application without causing any data loss/corruption.
  - **Efficient** code guidelines ensure that code is highly optimized for performance and developers leverage technology features to achieve performance even at code level.
  - **Scalable** code guidelines ensure Scalability of the application is not limited by code and the application can be scaled out if required in the future.

- ### Advanced Engineering Guidelines

  Advanced Engineering guidelines are to be applied while designing or reviewing an application to ensure high quality of software. They are grouped as follows:

  - **Security** covers guidelines related to Authentication, Authorization, Integrity, Confidentiality, Denial of Services, Attacks and Protection of data
  - **Performance and Scalability** covers guidelines related to Performance Analysis, Improvements and Scalability
  - **Reliability** covers guidelines related to Resilience, Reliable communication and Availability
  - **Supportability** covers guidelines related to Deployments, Instrumentation, Testability, Deployment and Operation Management
  - **Extensibility** of software applications covers guidelines related to making the application more extensible and includes Interoperability and Reusability

- ## Trainings

The following SPEED mandatory trainings are conducted at regular intervals across the organization:

- ❖ Induction – A two hour session is conducted for every employee joining Synechron
- ❖ SPEED Awareness Training – Two hour sessions are conducted for every technology professional at Lead and above levels
- ❖ Basic Engineering Guidelines – These sessions are conducted for every technology professional from the respective technology (e.g. Microsoft, Java)
- ❖ Advanced Engineering Guidelines – These sessions are conducted for every technology professional at Manager or Specialist and above levels

- ## Verifications

SPEED project verifications are carried out at regular intervals for both code and process. A team of experienced Assessors identifies projects for each verification cycle. They conduct a complete walkthrough of the code and SDLC processes. Observations are discussed, noted down and suitable corrective and preventive actions are put in place. This process helps to identify errors, minimize risks and rectify the problems at an early stage, all of which ensures high quality.

- ## Quiz and Appraisals

SPEED evaluation is not restricted to the Project level; individual employees are also evaluated on their knowledge which they have gained through training and implementation programs. Technology professionals have to undertake a quiz based on the Engineering Guidelines. This also helps the SPEED team to improve effectiveness of the future training programs.

SPEED is also given some weightage in the annual Appraisal programs. The various KRAs that contribute to the employee rating are Contribution to SPEED, Quiz score, Quality score, Maturity score and Trainings attended.

- ## Usage of Tools - iSPEED

iSPEED is an online platform for managing projects using the SPEED framework. It provides a set of customized workflows and template forms using tools like JIRA + Confluence or TFS + SharePoint. This helps projects to manage and track requirements and tasks and thereby deliver high quality. Tools also ensure that the code which is delivered is secure.