**Assignment 1**

Capability Maturity Model (CMM)

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**Summary of the document**

The document “Capability Maturity Model for Software, Version 1.1” provides a technical overview of CMM for Software, and it discusses the framework of 5 different maturity levels, structural components of CMM, how CMM is used in practice, and the future directions of CMM. The use of good practices and writing software with the proper structure is necessary in order to succeed at producing quality software products. The Capability Maturity Model (CMM) is a guide for organizations that focuses on the process of developing and maintaining software for the long term.

**What are the fundamental concepts of process maturity?**

According to the text, *software process maturity* is the extent to which a specific process is explicitly defined, managed, measured, controlled, and effective. The potential growth in software capabilities as well as a consistent increase in the productivity and quality of an organization’s software development process make up the fundamentals of software process maturity. Once an organization gains in process maturity, the institutionalization of its software process is constructed via policies, standards, and organizational structures to create an infrastructure and corporate culture.

**What are the levels of process maturity? Are they sufficient to measure the maturity of organizations?**

1. *Initial*: The company has no stable environment for development and maintenance of software. Software development process is informal. Very few processes defined and success depends on individual effort.
2. *Repeatable*: Basic project management processes are established to track cost, schedule, and functionality. The necessary process discipline is in place to repeat earlier successes on projects with similar applications.
3. *Defined*: Software process is documented and integrated into a standard software process for the organization. All projects use an approved, tailored version of the organization’s standard software process for developing and maintaining software.
4. *Managed*: Detailed measures of the software process and product quality are collected. Both the software process and products are quantitatively understood and controlled.
5. *Optimizing*: Continuous process improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies.

They levels of process maturity *are* sufficient enough to measure the maturity of the organizations. You should always use caution when applying these steps because sometimes they may not be sufficient enough due to changes in technology which means the way they are used can also change along with that.

**How does improving process maturity levels help managing software projects?**

In an immature organization, there is no objective basis for judging product quality or solving product or process problems. The development process of immature organizations will often compromise the quality of the software they are producing due to the lack of an organized system. Because of this, they give up quality assurance techniques such as reviews and testing in order to meet the release schedule. Alternatively, a mature software organization possesses an organization-wide ability for managing software development and maintenance processes. Mature organizations have much more structure to their practices and processes so that they do not compromise quality, which is a very important factor in customer satisfaction.

**What are the uses of CMM?**

CMM is used among organizations as guidance for their development of software, and it can be used individually for smaller projects as well. It can be used for benchmarking, testing, and measuring progress. Quality assurance is also another thing that CMM works to ensure.

**What would you do to improve the maturity level of a team you worked with?**

One way to improve the maturity level among a team is to create a development process and make sure that everyone has a common understanding on the rules and principles that drive the team’s development. You should also implement a way to measure/track the effectiveness of your development process so that you can act on it and make the necessary changes when needed for the sake of improvement.