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MECHANICAL ENGINEERING

MEE 586 - Machine Design III

ASSIGNMENT 1

1. What is integrated CAD/CAM ?

 These are computer aided integration systems employed in all production functions, from design and planning to manufacturing and quality standard assurance. However overall integration of this kind has hardly been put into practice and it applies particularly to medium and small batch production of the machine-building industry.

1. Draw a product cycle to describe the scope of CAD/CAM in the operation of manufacturing firm.



**Figure 1: Shows the product cycle scope of CAD/CAM in the operation of a manufacturing firm**

1. Characteristics of a good CAD software
2. .Recover ability: - A Good software must be able to give warnings before getting crashed and must be able to recover and also it must be able to send crash report feedbacks to the software developers.
3. Simplicity:-A software must be simple to use and easy to understand and must be user friendly.
4. Readability:-This provides the capability within the software to help the user as and when required.
5. Portability: -The software must have the capacity to get transferred from one system to other.
6. Flexibility: - The software must be able to incorporate the design modification without much of difficulty and it must be able to run smoothly.
7. Reliability: - To avoid causality the software must be able to avoid unwanted operation and it must be capable of getting the required job done.
8. Efficiency:- An Efficient software is that which can use less resources such as CPU in terms of time and usage to give a better output.
9. Explain 3 divisions of software components.

Software is the language of a computer. And like human language, there are many different computer languages. Essentially, computer software can be divided into three main groups depending on their use and application. These are system software or operating system referred simply as the OS, application software and programming languages. Usually most of us interact with a computer using application software.

1. System Software: System software or operating system is the software used by the computer to translate inputs from various sources into a language which a machine can understand. Basically, the OS coordinates the different hardware components of a computer. There are many OS in the market. The most popular Os are from the stable of Microsoft. We have all heard, used and wondered at the Windows software, which is an OS. Starting with Windows, Microsoft has migrated to windows 10. It may come as a surprise to some that there are other operating systems used by others. Among these UNIX is used for large office setups with extensive networking.

2. Application software: A normal user rarely gets to see the operating system or to work with it. But all of us are familiar with application software which we must use to interact with a computer. Popular examples of application software are the Microsoft office suite which includes Word, Excel and PowerPoint. We have used these applications extensively. Internet explorer, Mozilla Firefox is two applications used to access the internet. E-mail software like Outlook express is used to manage Emails. It is obvious that all software utilized for working on a computer is classified as application software. In fact all user interfaces are an application. The anti-virus is an application and so is the Media player.

3. Programming languages: Now this is a kind of computer software which is used exclusively by computer programmers. Unless we are also programmers, we are unlikely to come across programming languages. A simple way to understand programming languages is to think of them as bricks which can be used to create applications and operating system. C++, Java and Simlab are some popular programming languages. Generally Java is used for internet applications. C++ is a language of professional developers and used extensively in developing operating systems. PHP is another language used for internet applications. There is a new class of languages which are being utilized for the mobiles. These are light weight, modular languages which are used to design mobile applications.

**Computer software falls under three basic categories; System software or operating system, application software and programming languages.** We usually use applications on a day to day basis. These applications are themselves created using programming languages.