

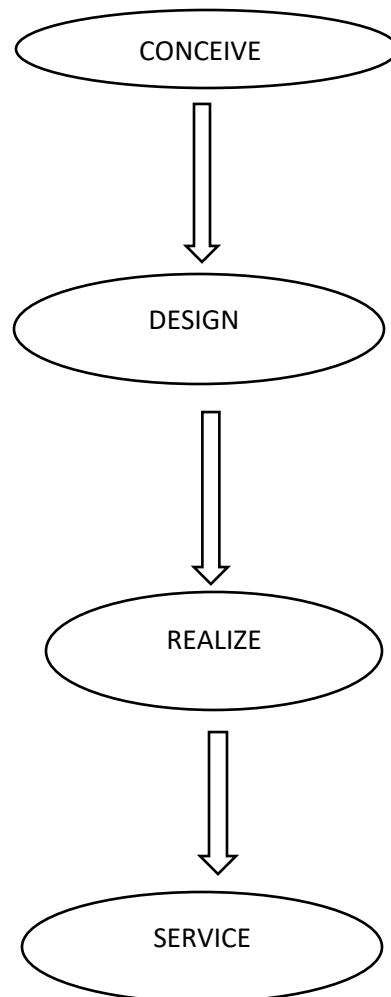
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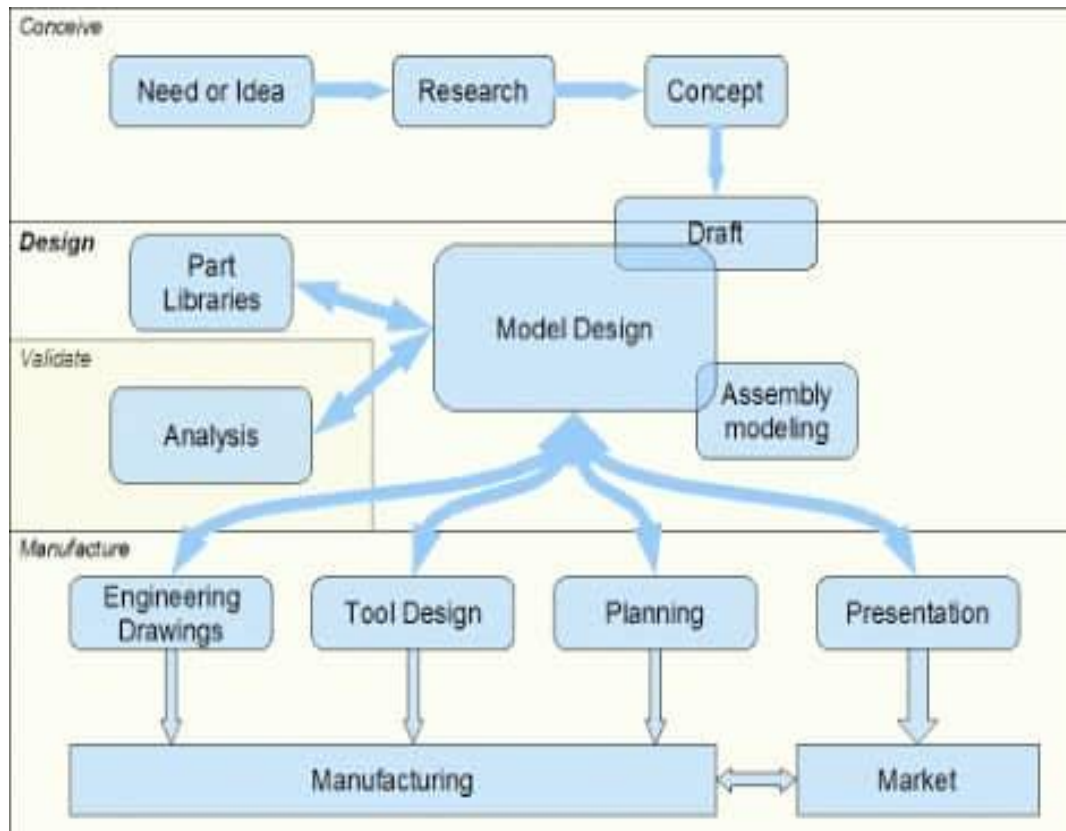
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MEE 586

1. An integrated CAD/CAM system provides one model supporting both design and manufacturing functions instead of having various file formats, numerous data translations/conversions, and different CAD and CAM models. Working with the same data is analogous to speaking the same language.

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





Conceive

Imagine, specify, plan, innovate-

The first stage is the definition of the product requirements based arranged customer, company, market and regulatory bodies viewpoints. From this specifications, the product's major technical parameters can be defined. In parallel, the initial concept design work is performed defining the aesthetics of the product together with its main functional aspects. Many different media are used for these processes, from pencil and paper to clay models to 3D CAID computer aided industrial design software.

Design

Describe, define, develop, test, analyze and validate-

This is where the detailed design and development of the products form starts, progressing to prototype testing, through pilot release to full product launch. It can also involve redesign and ramp for improvement to existing products as well as planned obsolescence. The main tool used for design and development is CAD. This can be simple 2D drawing / drafting or 3D parametric feature based solid/surface modelling. Such software includes technology such as Hybrid Modelling, Reverse Engineering , KBE (knowledge based engineering) , NDT (Nondestructive testing) and Assembly construction.

This step covers many engineering disciplines including mechanical , electrical , electronic software and domain-specific , such as architectural , aerospace, automotive. Along with the actual creation of geometry there is the analysis of the components and product assemblies. Simulation, validation and optimization tasks are carried out using CAE software either integrated in the CAD package or stand-alone.

3. (A) Efficiency; An Efficient software is that which use less resources such as CPU in terms of time and usage to give a better output.

(B) Simplicity; A software must be simple to use and easy to understand and must be user friendly.

(C) Flexibility; The software must be able to incorporate the design modification without much difficulty.

(D) Readability; This provides the capability within the software to help the user as and when required.

(E) Portability; The software must have the capacity to get transferred from one system to the other.

(F) Reliability; To avoid casually the software must be able to avoid unwanted operation.

(G) Recover ability; A good software must be able to give warnings before getting crashed must be able to recover.

4. Divisions of software components.

(I) 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 Vista, its latest offering in the market. 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. XENIX is a software which has now become redundant. HP -UX and AIX are some operating systems used by HP computers.

(II) 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.

(III) Programming languages; Now this is a kind of computer software which is used exclusively by computer programmers. Unless we are also programmers we are likely 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.