

Q) What is software Engineering. Explain the characteristics of a software.

A) Software engineering is a discipline in which various methods, tools and theories are used to develop professional software.

→ Characteristics of a software

(i) Software doesn't wear out:- Objects such as clothes, books, shoes, etc... wear out after a period of time, but software doesn't wear out and it's not effected by environment. However we have to update the software after a period of time.

(ii) Software is engineered, not manufactured:- To produce hardware we need raw materials and to develop a software we don't need any raw material. Thus we can say software is engineered and hardware is manufactured.

(iii) Most softwares are custom built rather than being assembled from components :- To manufacture any hardware, first we design the product and then components are assembled based on the design, but in softwares we don't use open source libraries rather than we create our own libraries.

Q) Explain different types of software (or) changing nature of software?

A) (P) System software :- It's a collection of programs that's used to run a hardware and application programs

Ex:- Compiler, editor, assembler, etc...

(ii) Embedded software :- It's a collection of programs that's embedded in hardware (or) non-PC devices

Ex:- Remote control, sensors, GPS devices

(iii) Web Software:- The web software contains various web pages that are displayed on a browser. The web pages are developed using HTML, JavaScript, Java, etc ---

Ex:- google.com, youtube.com....

(iv) Scientific Software:- These are the softwares that performs complex numeric calculations

(v) AI Software:- It's a collection of programs which mimic human behaviour

Ex:- Robots, ATM, IVR, etc ---

Q) Explain about software evolution?

A) It's a process of developing a software and repeatedly updating it for various reasons.

(i) Law of continuing change:- All real world softwares must be changed in order to make them more satisfactory.

(i^o) Law of increasing complexity,— All real world software are complex and must be evolved in order to maintain them properly.

(ii^o) Law of continuing growth,— The functions of real world software are continuously increased to satisfy the user

