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Date 18 01 2022

TUTORIAL 2

U19CS012

① List out differences between system software and application software.

	System Software	Application Software
①	It is type of software which is the interface between application software and system.	Application software runs as per user request. It runs on platform which is provide by system software.
②	General S.S. are developed in low level language which is more compatible with the system hardware in order to interact with.	While in Application software, High Level Language is used for development.
③	Used for Operating computer Hardware.	Used by user to perform Specific task.
④	Installed with OS	Installed according to user's requirement
⑤	Less interaction with user (∵ system s/w are specific for system h/w)	User interaction is high in application software.
⑥	system s/w can run independently (provides platform for running application s/w)	Application s/w can't run independently.
⑦	Compiler, Assembler, debugger [Windows operating system.]	eg. Word processor, web browser, media player Photoshop.

② System Software is machine dependent. Justify.

② ① System software deals directly with hardware of a device.

② Different hardware perform differently and has a unique set of operation associated with it.

③ System software are to SUPPORT the operation and usage of target computer. [Machine Code, Instruction Format, Addressing mode & Registers are different for different machines] + (Architecture of diff. system)

Therefore, most of the system software are MACHINE dependent.

③ Note on Language Processor.

③ 1) A language processor is software program designed or used to perform tasks such as processing program codes to machine codes. They are found in languages like COBOL & FORTRAN.

2) Language Processing activities arise due to the difference between the manner in which a software designer describes the ideas concerning the behaviour of software and the manner in which these ideas are implemented in computer system.

3) It is software which bridges a specification or execution gap.
Eg:
- A Language translator
- De - translator
- Preprocessor
- Language migrator.

4) a) Interpreter :- An interpreter is language processor which bridges an execution gap without generating a machine ~~text~~ language program that means the execution gap vanishes totally.

5) b) Compiler :- It reads complete program in one go and then converts it to assembly level code.

④ What makes the difference between executing a high level program from the programmer's view and the system software view?

④

① High Level Languages are written in a form that is close to our human language enabling programmer to just focus on problem just being solved. No particular knowledge of hardware is needed as high level languages create programe that are portable and are not tied to particular computer or microchip.

② System Software is used to manage computer itself, it runs in background maintaining its function so users can run high-level application software to perform certain tasks. Essentially system software provides platform for application software to run on top of.

∴ This is the difference between executing high-level language

⑤ Explain various components of system software.

⑤ ① system software carries out middleware tasks to ensure communication between other software and hardware to allow harmonious co-existance with user

② System Software can be categorized under following

a) Operating System - It harness communication between hardware, system program and other applications.

b) Device Drivers - It enables device communication with OS and other programs.

c) Firmware :- It enables device control and identification.

d) Translator :- It translates high level language to low level machine code.

e) Utility :- It ensures optimum functionality of devices and applications.