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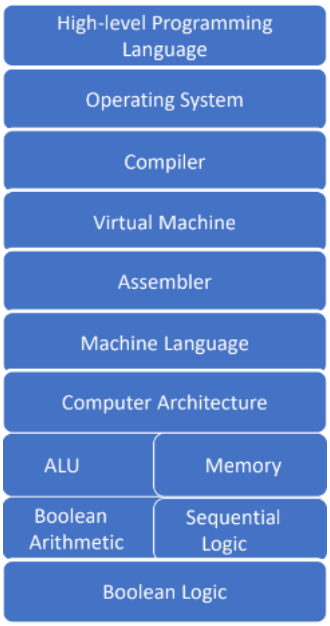
Computer Systems

Week 1 Assessment Tasks
SIT111 - Task 2.3C

What is abstraction?
Abstraction is the removal of features from "something/object" in order to reduce it to a certain system's required set of characteristics.

To conceal the specifics of the computer design, we can utilize layers of abstraction. Regardless of the layer, we can operate without needing to understand how the lower levels function or how the present layer fits into the overall system.



- Operating Systems : A layer of abstraction called an operating system creates a standardized interface between hardware and software. The operating system hides hardware specifics like device drivers and memory management, giving programs a uniform interface to access system resources.

- The low-level aspects of computation are abstracted by programming languages,which provide higher-level abstractions for things like data structures and control flow.

- The low-level complexities of computer hardware are abstracted away by high-level programming languages like Python and Java, giving programmers an easier interface to use when creating new software.

- Virtualization : With the use of the technology known as virtualization, many virtual machines may operate on a single physical computer by abstracting physical resources like hardware, storage, and networking. This offers an abstraction layer that makes managing and deploying software systems easier.

- The storage and retrieval of data are abstracted by databases, which offer a streamlined user interface for interfacing with massive data sets.

- User interfaces reduce complicated software operations into straightforward user interactions.