CHAPTER1: Introduction

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A computer's software can be divided into kernel and user modes. Traditionally, most of the operating system resides in the former while in the latter, the user interface program (i.e. GUI) and other application programs are to be found. However, there are cases where this line that divides user and operating system software gets blurred out and many important permitions and functions are adscribed to both.
Furthermore, there are two main perspectives for the description of the main job done by the operating system, namely, *top-down* and *bottom-up*. In the top-down view, the operating system creates some type of clean and elegant *abstractions* of the hardware ressources in the architecture, which can be a hassle to work with in a low-level sense, present them to the programs in user mode and execute these abstractions.
On the other hand, for the *bottom-up* view, the operating system is mainly in charge of the management and allocation of ressources. Ressource managment includes a multiplexing allocation of ressources through time and/or space. In the case of a time multiplexed ressource, programs and users take turns using it. The OS decides the order of the turns and how much they last. A space multiplexed ressource is partitioned for the programs and users. The memory and disks are examples of space multiplexed ressources.