getting started with Linux

ESE2025

why Linux on embedded systems?

- in the past, embedded systems were not connected and they were relatively simple with little or no user interface
- today we need embedded systems to deal with large amounts of information, communicate with servers (as in an IoT scenario) and have GUIs
- Linux provides a convenient means of having these features in an embedded context automatically.

a bit of history

- Linux, a popular multi-tasking operating system based on the Unix architecture, is essentially “Unix on a PC”
- Linux was first released in 1991, and combined a kernel program written by Linus Torvalds, and a software suite from the GNU Project
- Unix is a powerful and reliable multi-tasking operating system architecture that emerged in the early 1970s
- The C programming language was developed around the same time in order to facilitate porting Unix to various hardware platforms
    - while C is high-level language, it also retains many of the capabilities of assembly language
    - therefore, C-language programs are portable (i.e., the same program can work on a variety of microprocessors), and efficient (i.e., they can perform well, similar to assembly-language programs)

Linux features