

① Embedded system is a computing system that is contained in an electronic device. Some examples:

- 1 disk drive
- 2 printer
- 3 scanner
- 4 tv
- 5 modem
- 6 network card
- 7 ATM
- 8 Anti lock brakes
- 9 Fax Machine
- 10 home security

② NRE cost - one time monetary cost of designing a system

Unit cost - excludes NRE, and is cost of manufacturing each copy of the system.

Time-to-prototype - time needed to build a working version of the system

Time-to-market - time needed to develop a system to the point it can be released and sold to customers

Maintainability - ability to modify the system after release, especially by people who didn't design the system.

Market window - period that the product will have the highest sales.

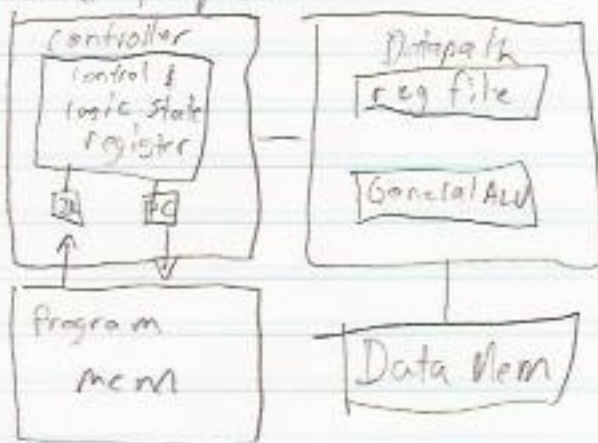
③ For each technology this is the volume range:

FPGA : 1 - 1000 units

ASIC : 1001 - 30000 units

VLSI : 30001 or more units

④ General Purpose



Programmable, run many types of apps, costly

App Specific



Programmable, run certain types of apps, custom ALU and less registers lower price

Single Purpose



Hardwired, not programmable so no program memory, but very cheap because it does only one purpose

- ⑤ Using the simplified model and algebraic simplifications, the book determines on time entry as W^2 and delayed entry as $\frac{1}{2}(w-D+w)(w-D)$. Using lifetime of 200 weeks and delayed 6 weeks, the % loss would be about $4\frac{1}{2}\%$.