ECE111: Digital Circuits

MONSOON 2021

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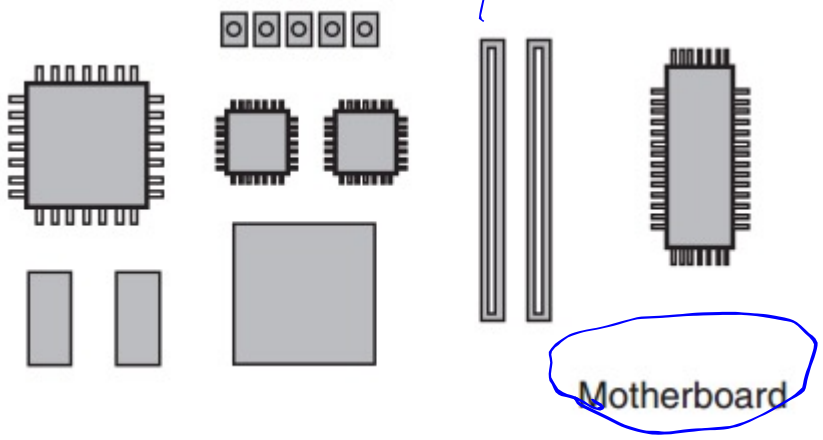
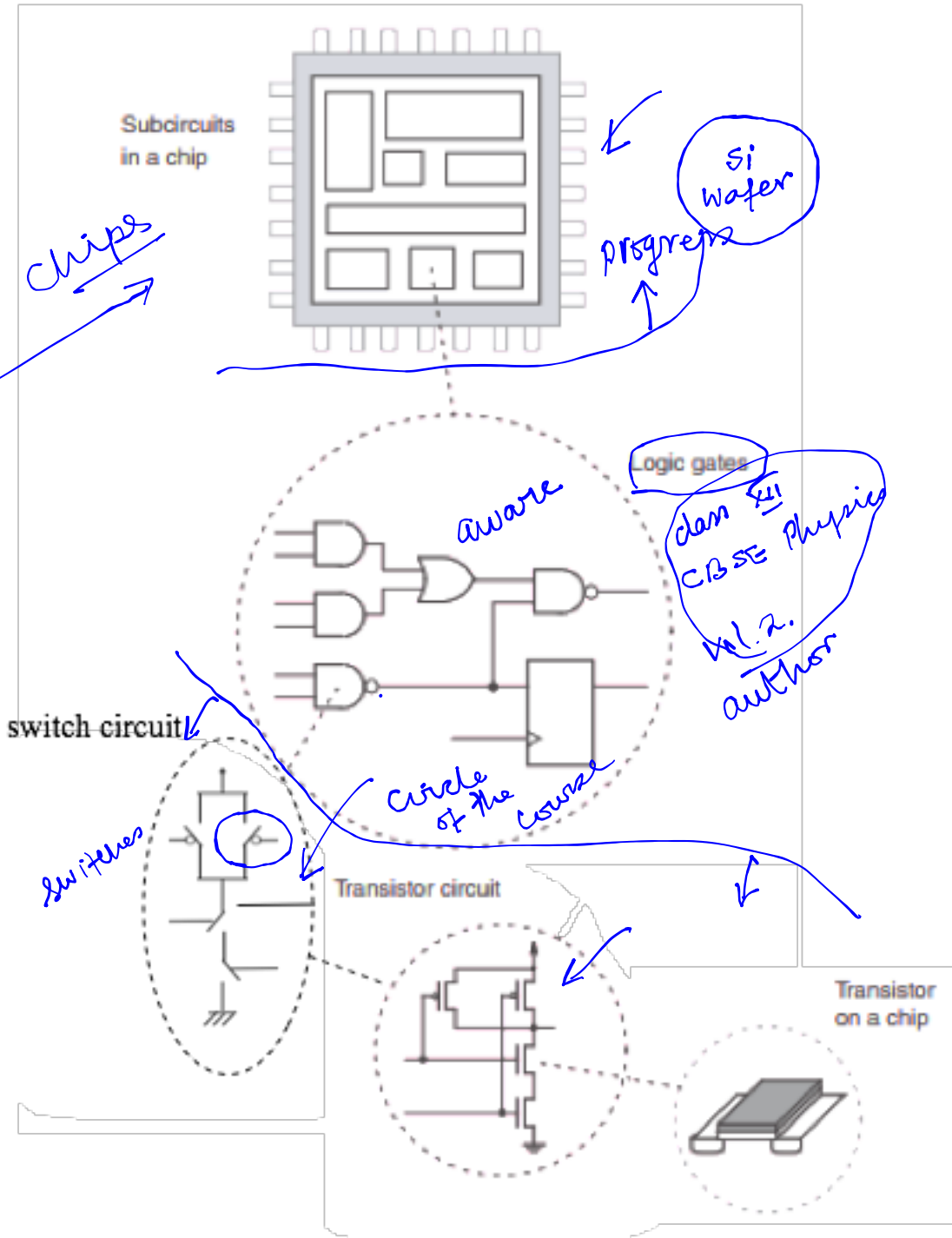
Office Hours:

Monday and Thursday (3:30 - 5pm)

ECE111: Digital Circuits





How many times in the last couple of hours have you encountered a digital system?

- Is there one on your wrist?
- Your computer?
- The innards of your vcr?
- The microwave oven?
- Your stereo?

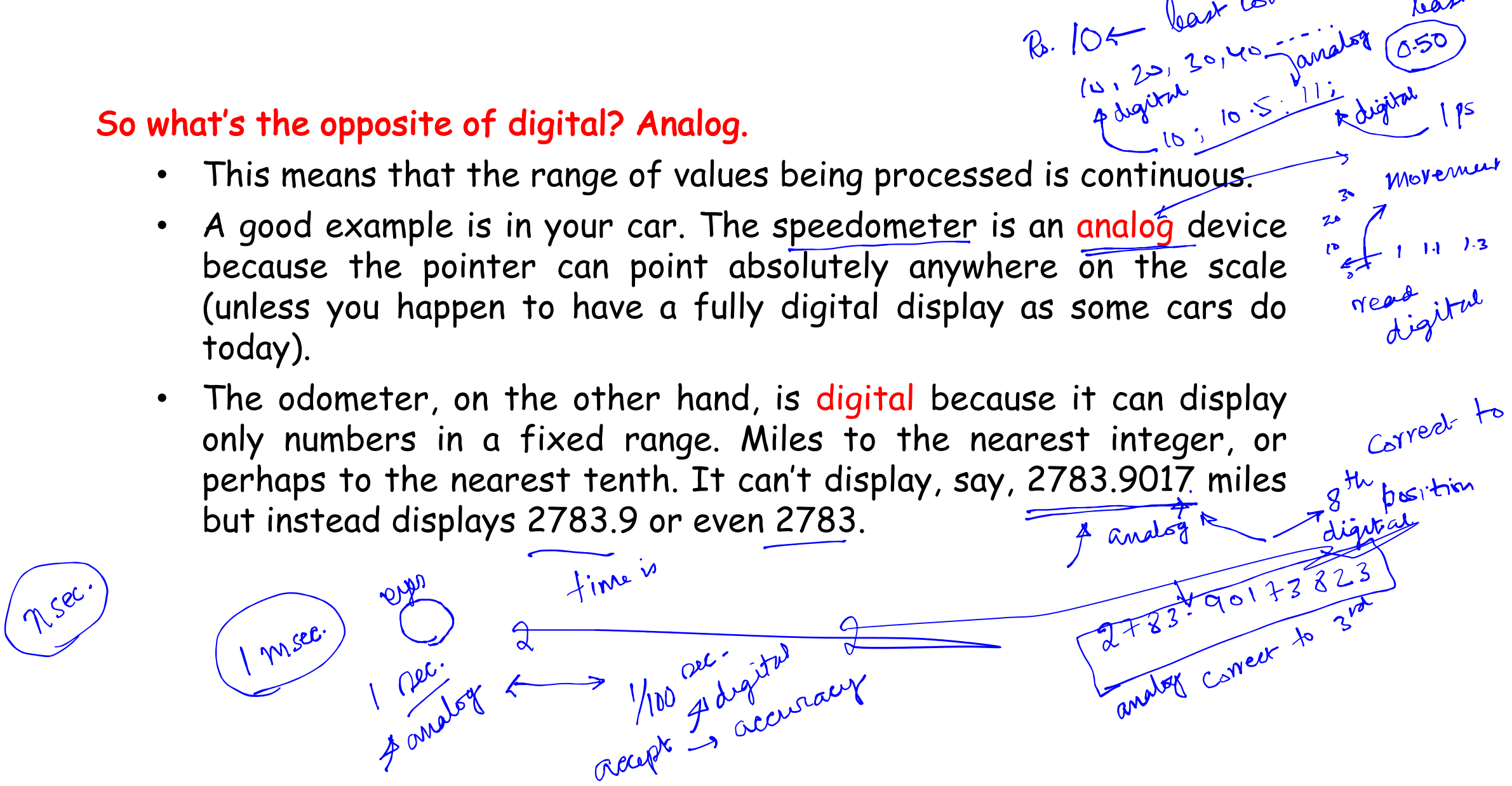
When you think about it, just about everything we deal with today has something related to digital logic inside it.

What does digital mean?

- Very simply, it means that the device or the system works with digits, numbers, discrete quantities.
- These numbers are usually, at least in the interior of the device, binary numbers—0s and 1s.
- We usually see the results as "people" numbers—decimal, most likely—and alphanumeric characters, including letters and digits and punctuation.

So what's the opposite of digital? Analog.

- This means that the range of values being processed is continuous.
- A good example is in your car. The speedometer is an analog device because the pointer can point absolutely anywhere on the scale (unless you happen to have a fully digital display as some cars do today).
- The odometer, on the other hand, is digital because it can display only numbers in a fixed range. Miles to the nearest integer, or perhaps to the nearest tenth. It can't display, say, 2783.9017 miles but instead displays 2783.9 or even 2783.



Go Digital!

- Quality of service
- Maintenance
- Flexibility
- Upgradability
- Exponential vs Linear
- Delay???