Ok first of all, we will talk about sensors we had 3 options:

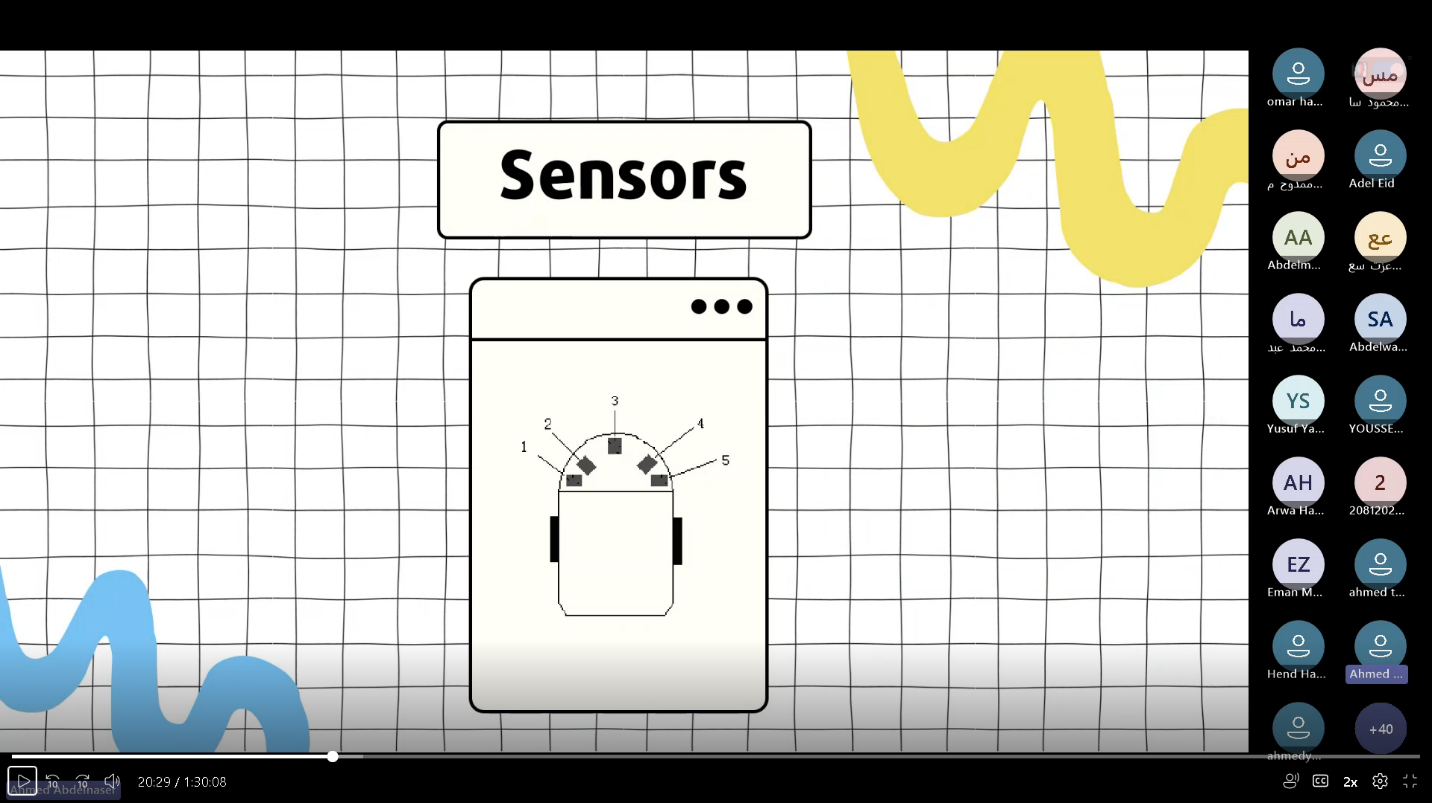
1) IR sensor : It’s a really famous sensor used in competition, cheep and works with infared but it’s a little slow

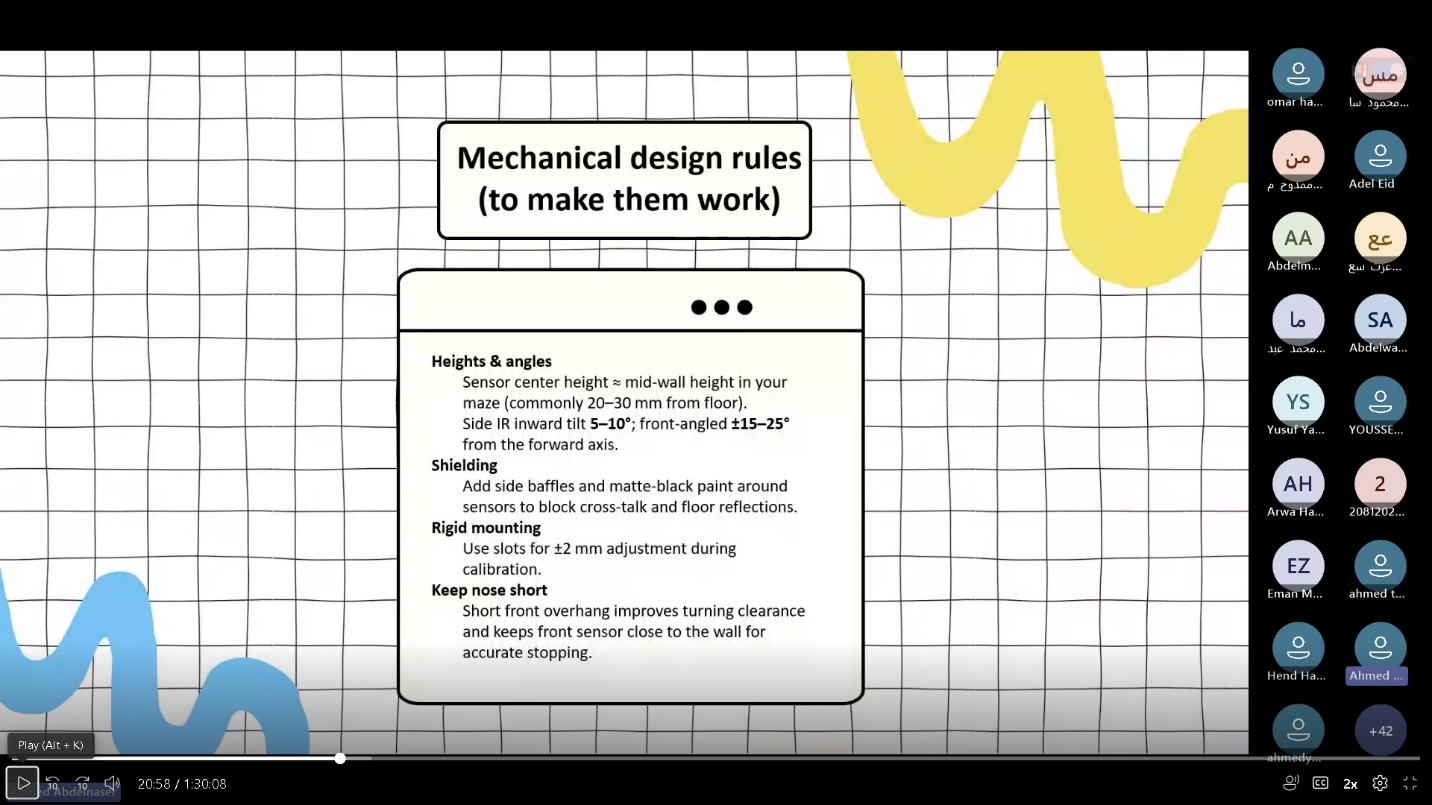
2) ToF: it uses lighr as a signal which make it vonurable to any bright environment, but it’svery fast

3) Ultra sonic: It’s cheep uses sound, but it’s slow and has a big size

So after comparing each sensor we decided to use the IR as we don’t garnetee a free bright environment

About the placement we will use 5 IRs in this shape:



With this rules:

Making sure that we don’t put any refelective material such as aluminum so it don’t miss with the IR