

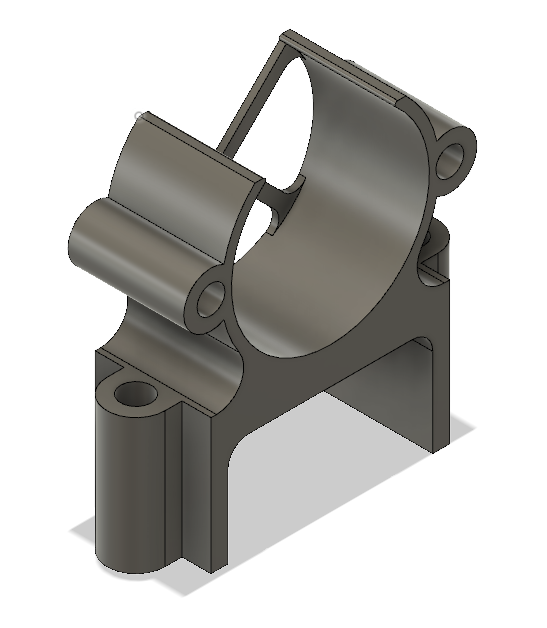
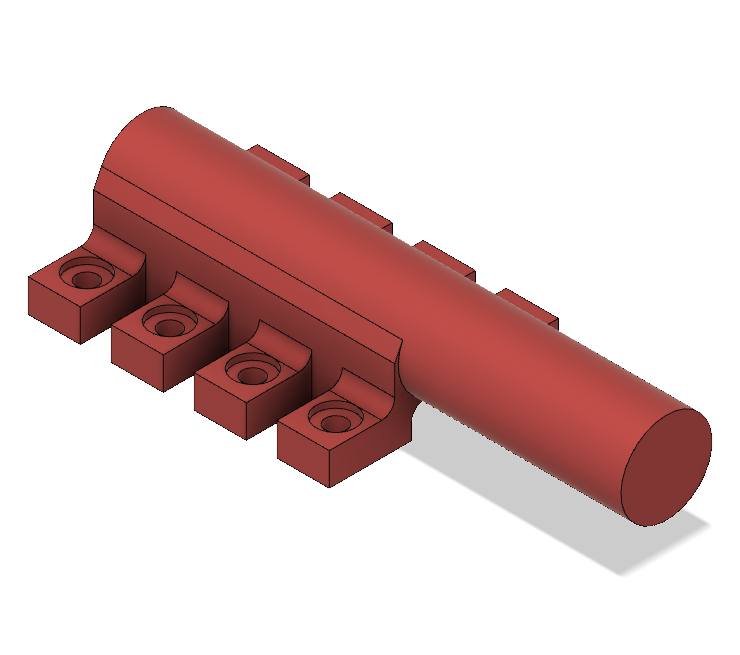
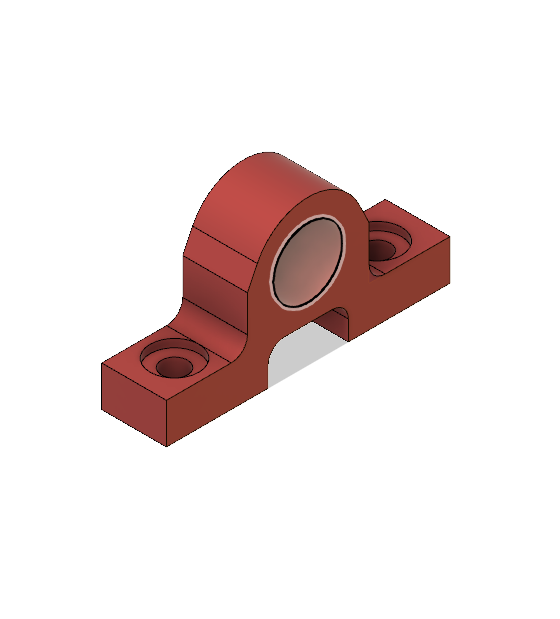
**Design Studio #4 - Weekly Progress Report #16**

DS Instructor: Gülbin DURAL

Partners:

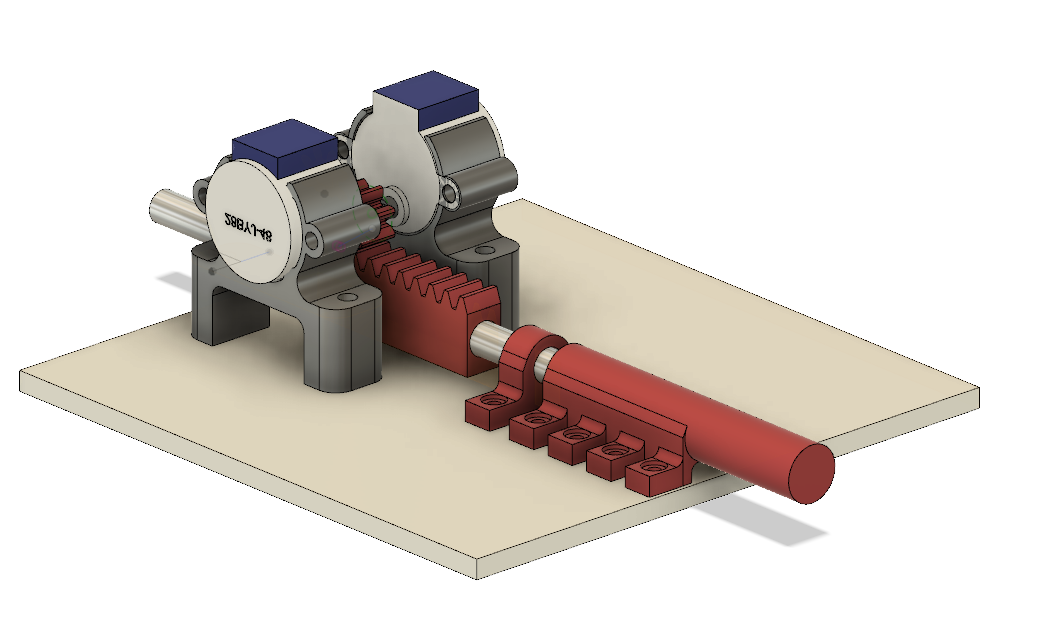
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In this week, we have tested the new shooting mechanism with two step motors and realized that it is capable of making a decent shot. To improve the speed of the ball after shoot, we will replace the steel rod with aluminum rod which has 3 or 4 times lighter than the steel rod. Also, to keep the rod aligned with the shoot axis, we have designed a linear bearing-like component and a new spring mount for the shooting part. Moreover, to adjust the spacing between the rack and pinion we have designed a new mount for the step motors. The 3D drawings of each part is shown in Figure 1.



*Figure1: The 3D model of linear bearing, spring mount and the step motor mount.*

The overall configuration of the shooting mechanism is drawn in Figure 2.



*Figure2: The integrated version of the shooting mechanism*

We also bought a high-torque low rpm DC motor, which has a higher torque than two BYJ48 step motor combined. We are planning to try the shooting mechanism with the DC motor as well, in case of any problems with the step motor. Note that, the motor and driver number will be decreased if DC motor is preferred. (Fatih ÇALIŞ)