

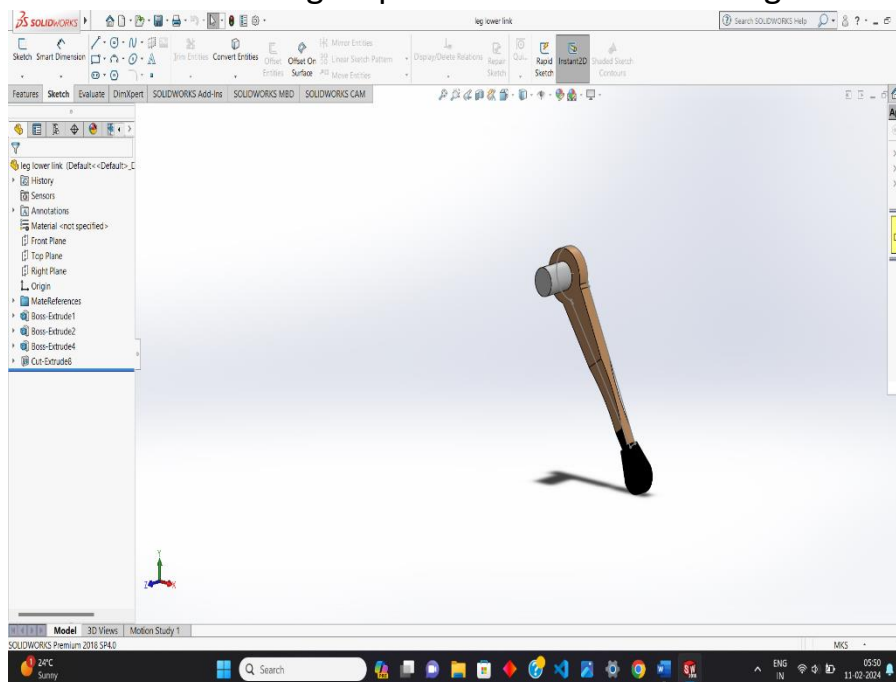
# Report on designed 3D Model

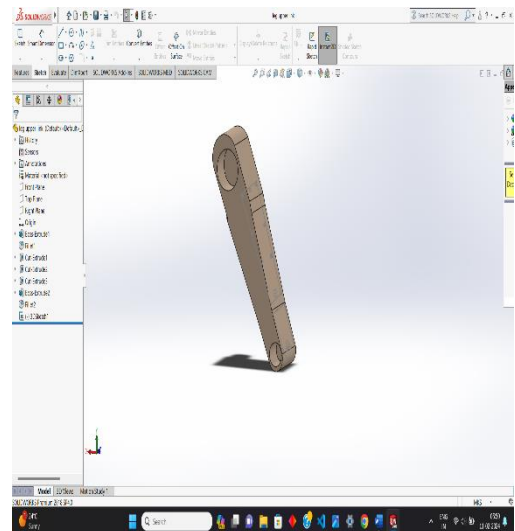
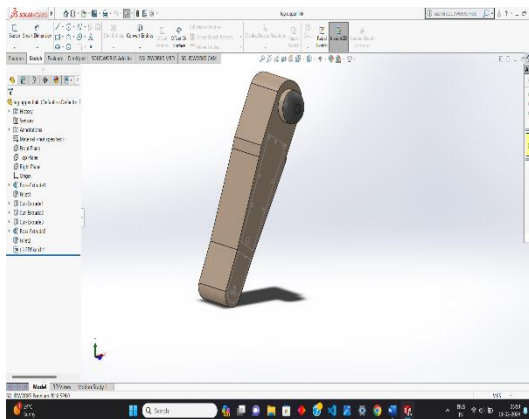
The 3D Model which I have designed is capable of climbing stairs and rough terrain also. It is a quad-legged robot which can also carry weight up-to 3 kilograms on it which can be suitably placed on it with the help of belts constructed on the top of the main body.

- **Ideation Process and Design Methodology:-**

The whole 3D model of the robot was sub designed in part files as lower and upper links of leg, main joint connecting legs and body, the main body and the final assembly.

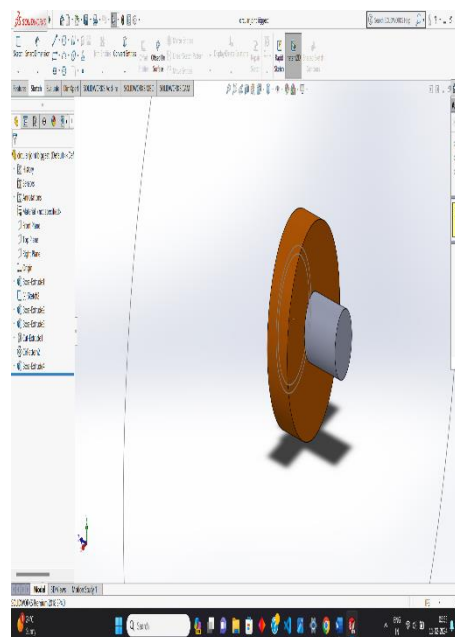
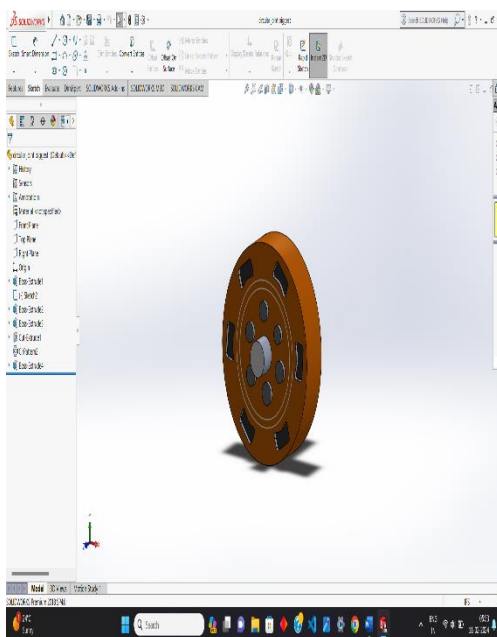
1. Firstly I've created the lower link of leg of robot in solidworks 2018 version through a part file. Below is the image attached-



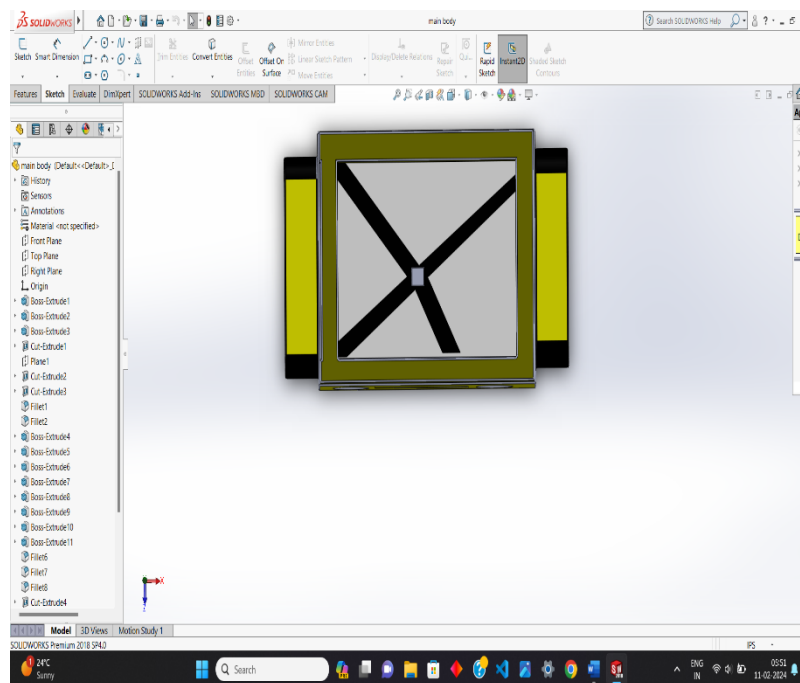
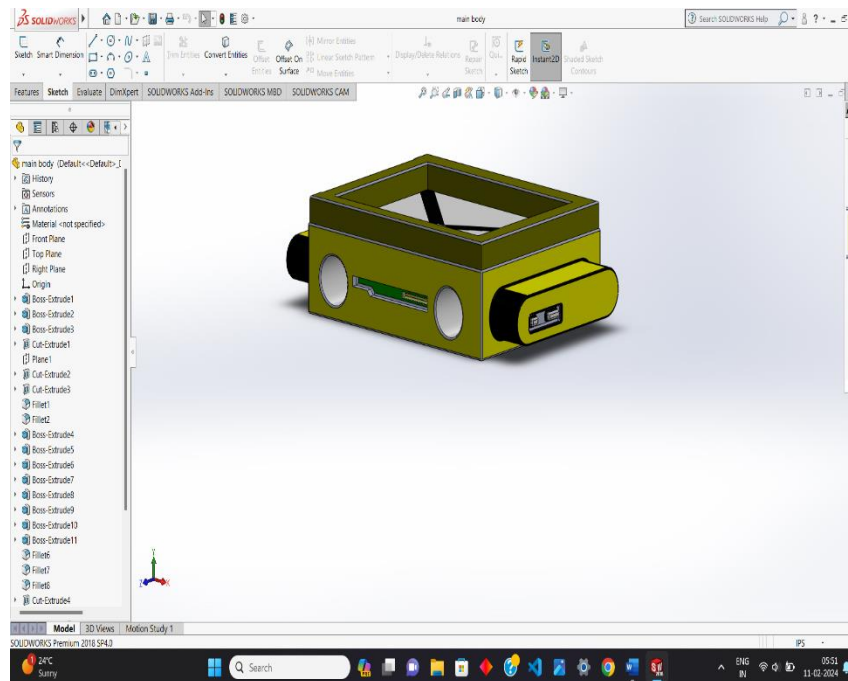


2. Secondly I designed the upper link of leg through part file in the same software as shown in the screenshots above.

3. Thirdly I have designed the main circular joint aperture connecting the main and the legs as shown below-



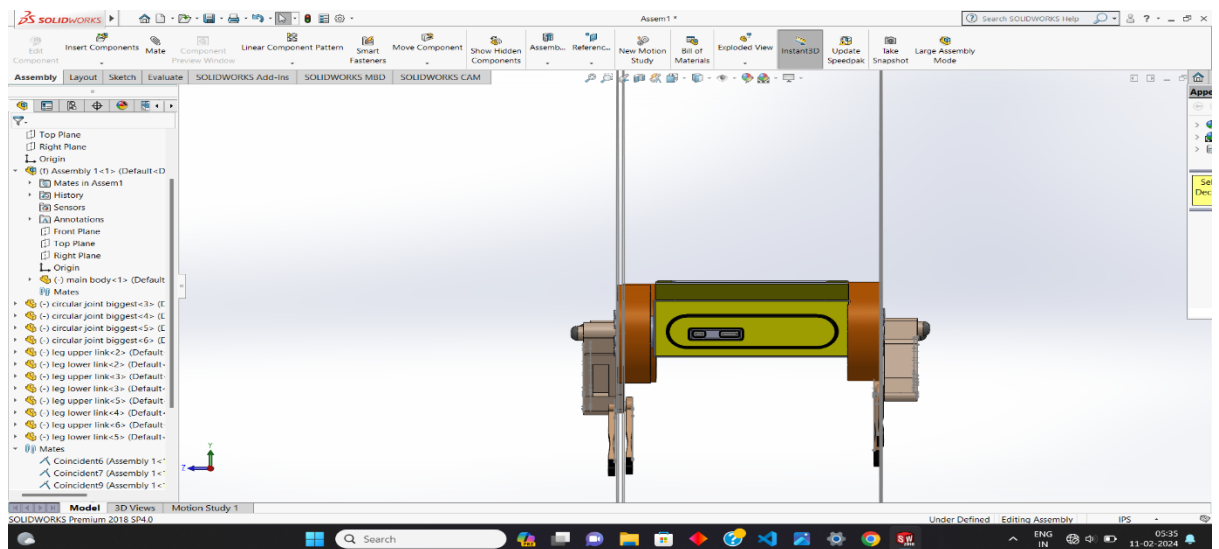
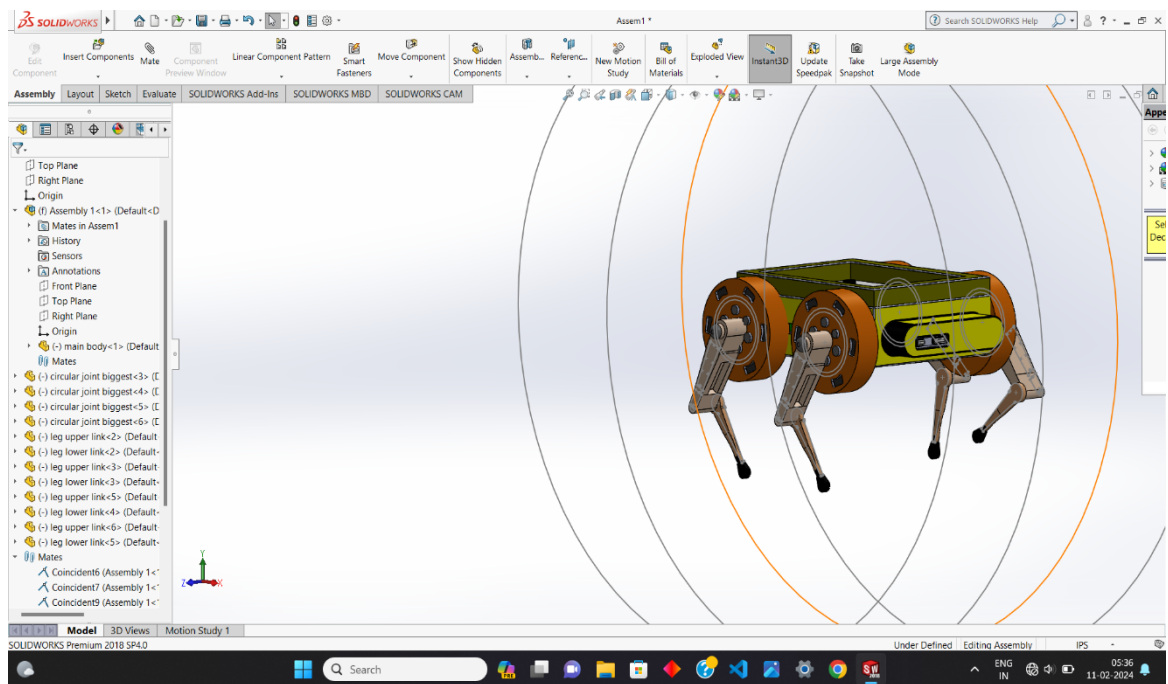
4. And at the last I have designed the main rigid body and frame of robot as shown below:-

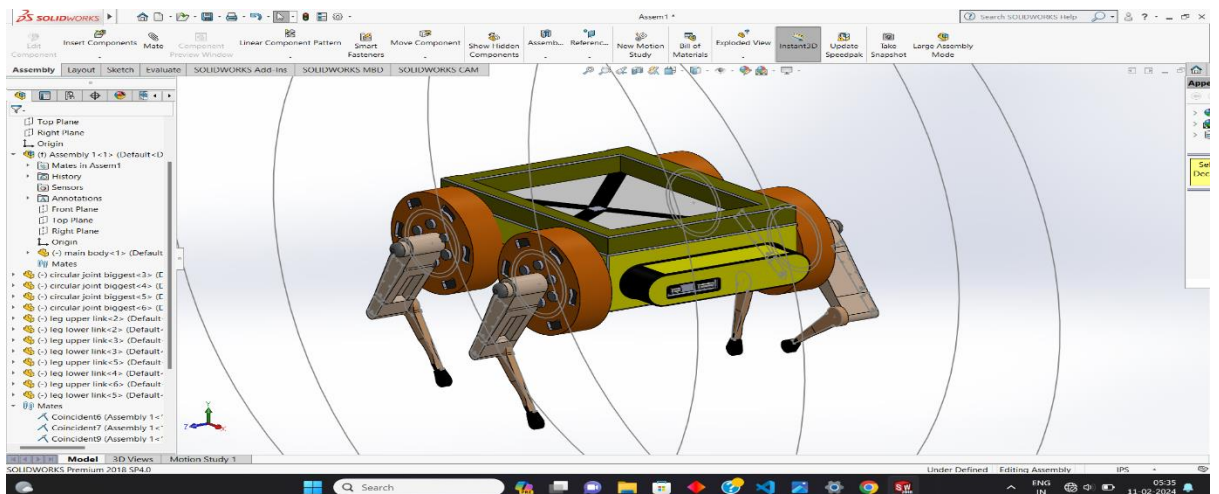
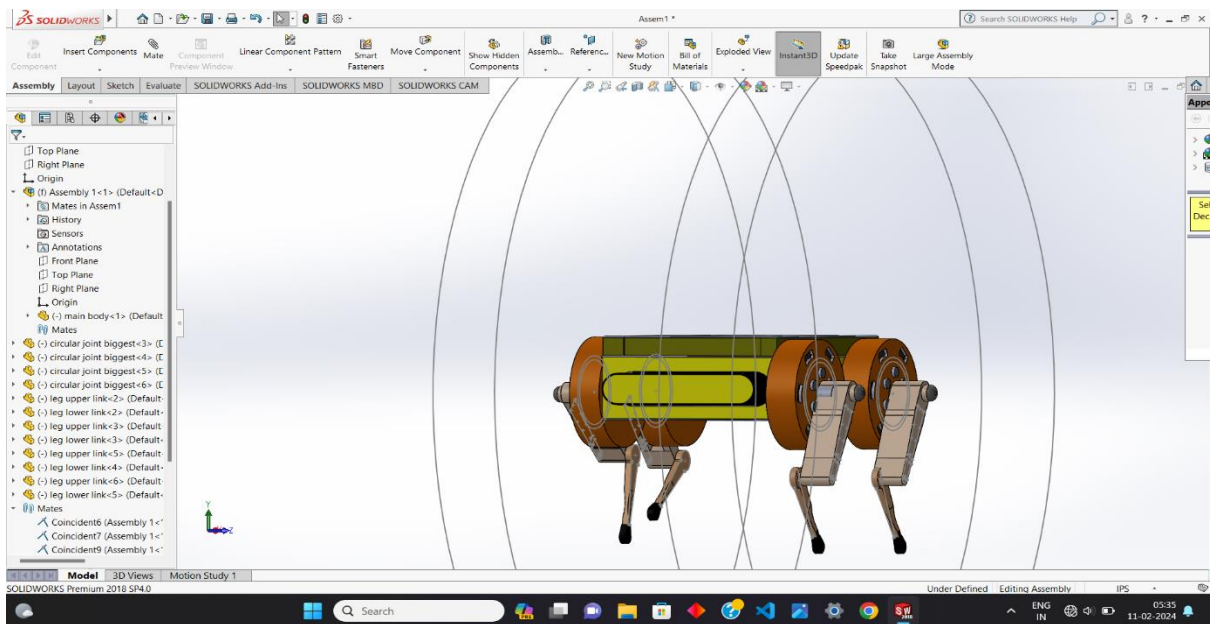
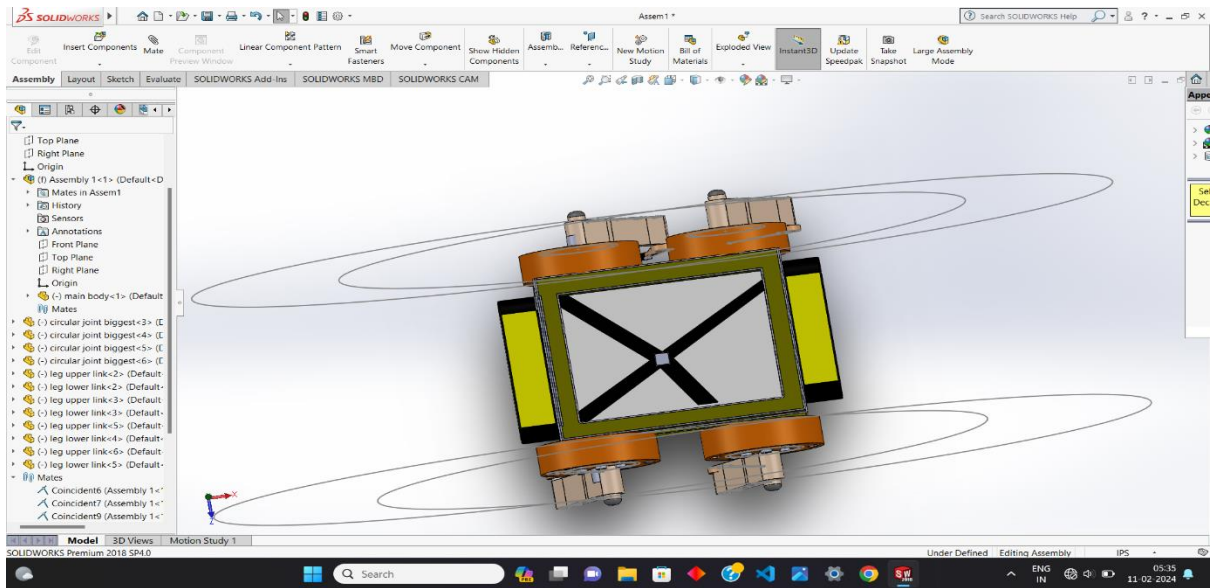


Picture 2 shows the top view of main body. It comprises of a cover like structure along with a belt for placing objects so that the robot can accommodate weights while walking or climbing.

5. After the design of part files, all the files were assembled together using the assembly file in solidworks and hence the final robot 3D model was ready.

- **Some Screenshots of the final assembled 3D robot model:-**





- **References used:-**

1. <https://news.mit.edu/2019/mit-mini-cheetah-first-four-legged-robot-to-backflip-0304>
2. <https://robotsguide.com/robots/minicheetah>

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