Report on Rescue Robot 3D Model

The rescue robot model which I have designed is a durable and terrain resistant model which can pass any terrain easily and is perfectly suitable at the time of earthquakes and other calamities.

The model can be equipped with electronics like camera and various sensors and can be used for a full-time real-life application.

The model was tested in Ansys and it passed the thermal stability test with a good amount of temperature and can handle stress and strain of different magnitudes of forces as well.

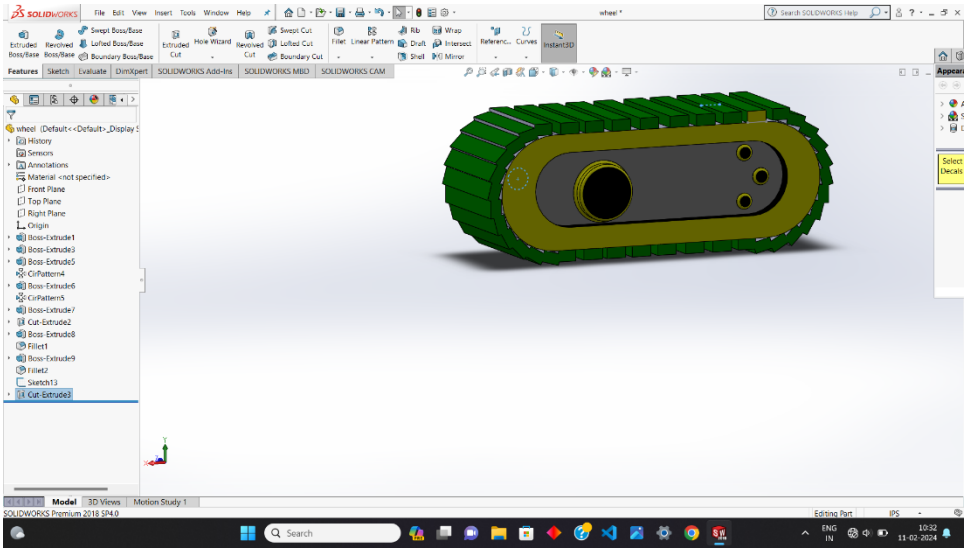
- ## IDEATION:

  The idea of such of a 3D robot model came to my mind from various films I have watched in the domain of robotics like that of WALL-E.
  In real life also I researched about such robots and found out that there were many of them each of them having its own specialties and abilities for performing tasks.

- ## Design-Methodology:-

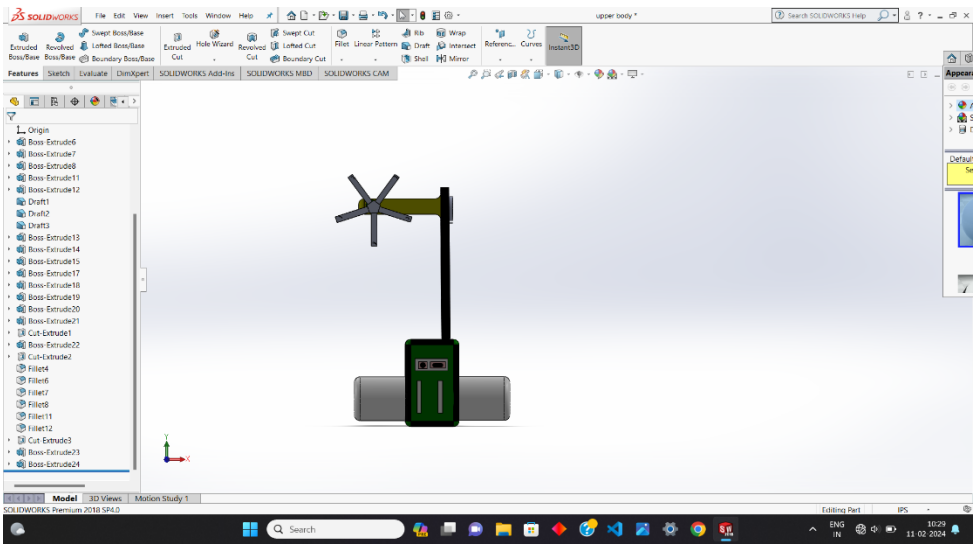
  After various references and ideas in my mind I started making the structure. The idea was simple and straight that to create a strong robot with wheels and a strong base.

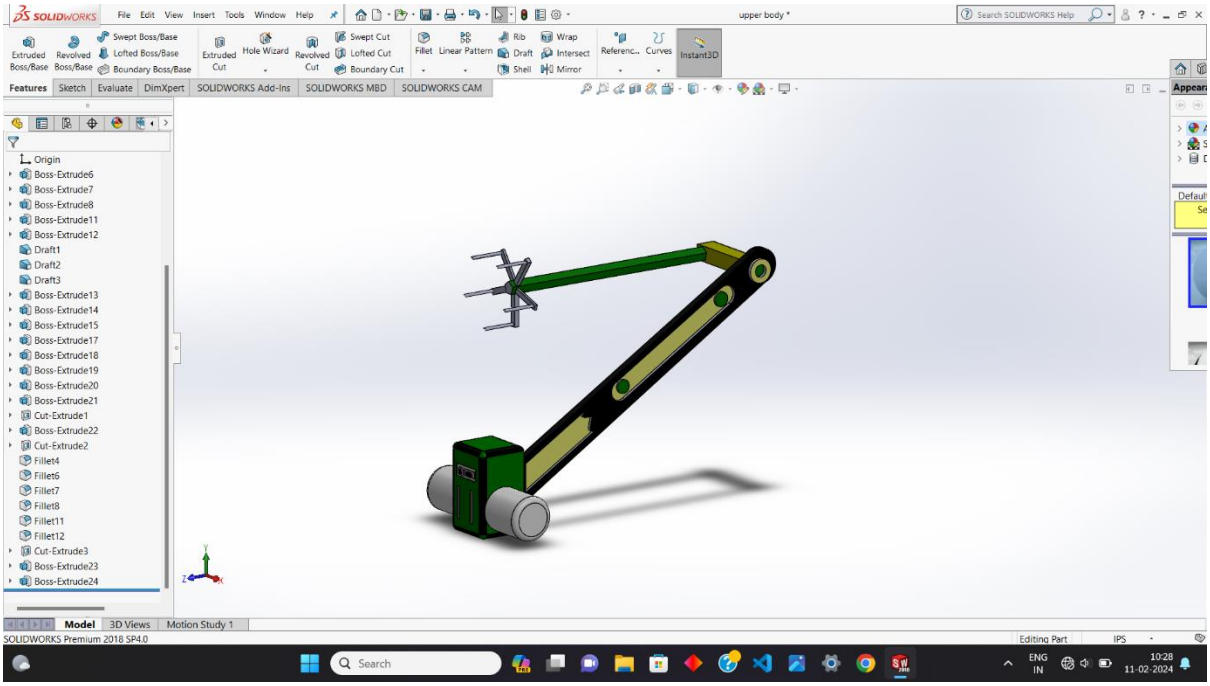
1. Firstly I started with the making of wheel of the 3D model in solidworks 2018 part file. Below are the images attached of the wheel:



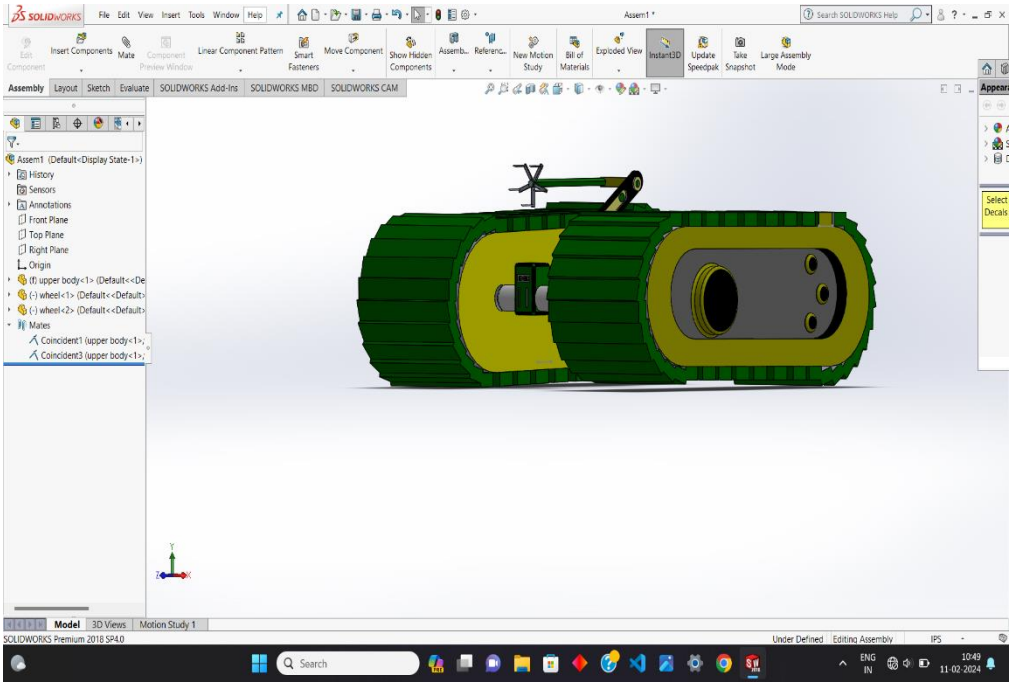
2. Secondly, I designed the claw of the robotic model by which it will grab objects and will displace various objects.

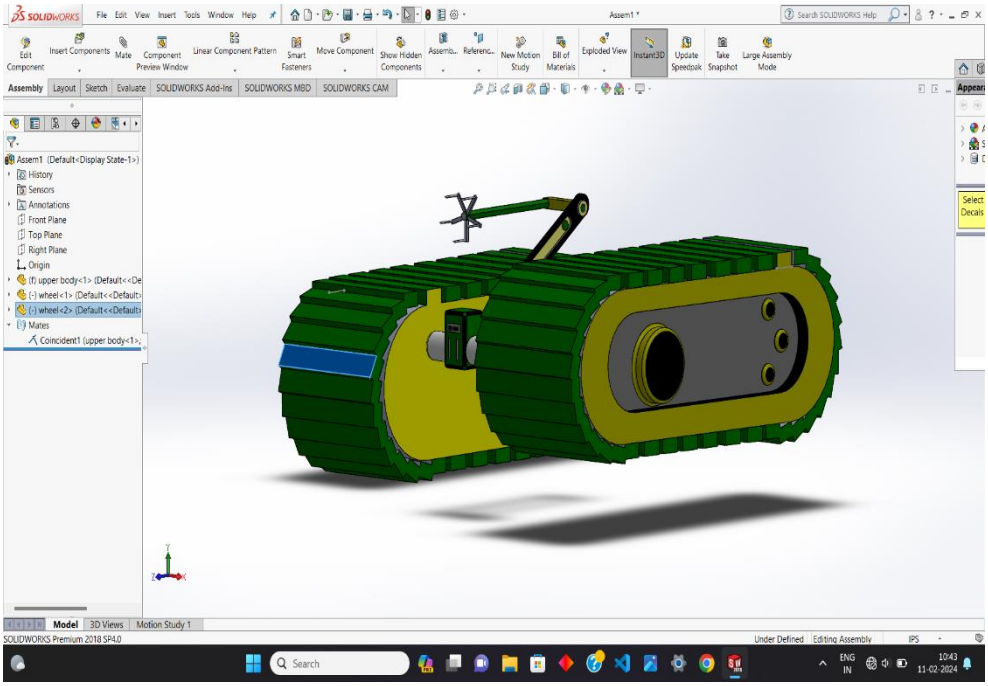
3. Thirdly I created a strong base in another plane so as to get a 3D model and combined the claw with it in a single file. Below are the attached screenshots:-





4. After the making of base and wheels it was time for assembling. I assembled both using soliworks assembly file and also performed the tests on Ansys. Below are some of the screenshots:-





- **References used: -**

1. https://www.tandfonline.com/doi/full/10.1080/01691864.2019.1697751

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