**ABSTRACT**

The engine block is the linchpin of vehicles that run on internal combustion, providing the powerhouse for the vehicle. It is called a "block" because it is usually a solid cast car part, housing the cylinders and their components inside a cooled and lubricated crankcase. This part is designed to be extremely strong and sturdy, because its failure results in failure of the car or bike, which will not function until the engine block is replaced or repaired. Most engine blocks are made of cast iron, although in the late 1990s, some made from plastic and other experimental materials were being used in prototype cars with the hope of developing more lightweight, efficient vehicles. Cylinders blocks are under goes high thermal and structural loads. The main objective of the project is to study the thermal and structural load determination in engine blocks. The engine block design is done in solid works simulation and analysis of structural and thermal analysis carried out in solid works simulation.