

MOOMBA

Luke Taylor  
Amy Guo  
Charles Coleman

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**Introduction:**

The Moomba is an autonomous mop. It will be designed to mop a room without any human input, similar to how a Roomba vacuums.

**Design Constraints:**

The first design constraint we decided on was the shape. We decided on a triangle, 45°-45°-90° so that the Moomba can easily mop a corner of a room. The Moomba is to be no heavier than 20 pounds and must be quieter than 40Db. We also set a performance constraint saying that the Moomba must be able to mop a room of 400 square feet in 20 minutes or less. The Moomba will be battery operated and must be able to last for 2 hours and return to a charging dock to recharge on its own. The Moomba will be no taller than 5 inches so as to not be an eye sore and be able to fit under some furniture. The Moomba will hold up to 1 liter of water for the mopping, which will be included in the 20-pound maximum. There will also be a dirty water reservoir at the charging dock to deposit dirty water as often as needed during a clean. Lastly, to give it ample time to stop as needed, the sensor technology must be able to sense what is 6 inches in front of it.

**Conclusion:**

These design restraints appear to be extensive and complete. While we are unconscious of any error, we are nevertheless too sensible of our defects not to think it probable that we may have committed many errors. We will keep our minds open to the possibilities of new and innovative design, as we carry out these constraints.

## Bibliography

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