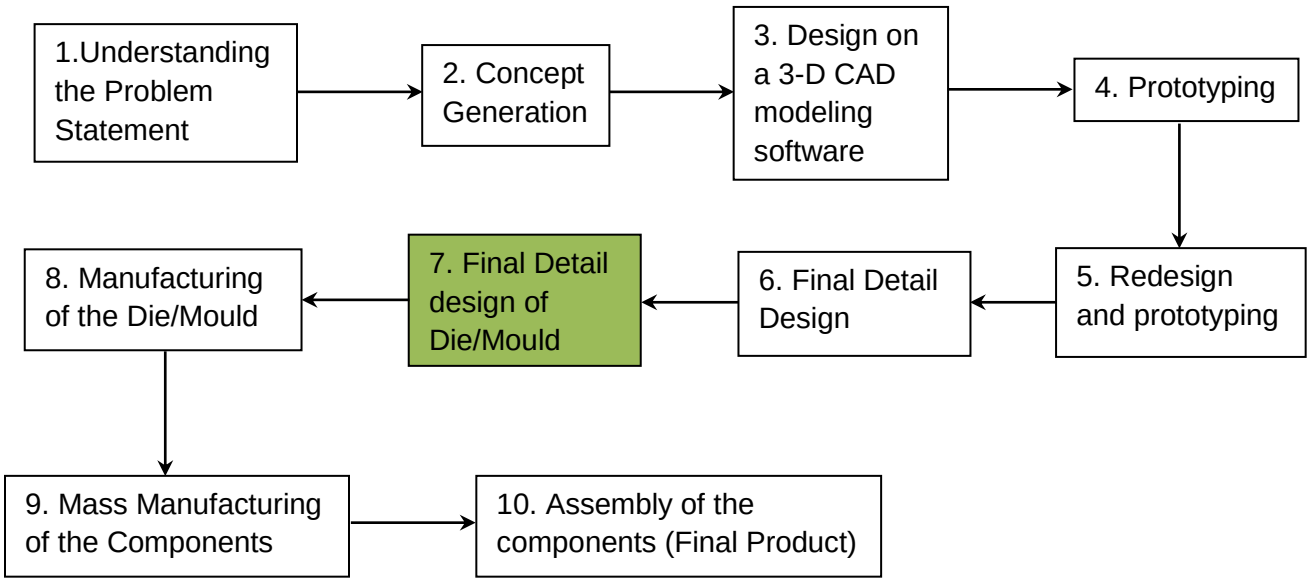
Face Protection Shield to help in Present COVID-19 Pandemic

Considering the requirement of protection equipment in the present epidemic which is COVID 19, IIT Jammu proposes to design and fabricate the aforementioned equipment dedicated to help various professionals especially Front line Doctors, Police and Armed Forces in J&K region.
The protection shield is going to be a plastic sheet which is going to protect the face of an individual from the surrounding or any contact.

The whole process of mass manufacturing the face shield can be described as follows:
1.Understanding the Problem Statement
2. Concept Generation
3. Design on a 3-D CAD modeling software
4. Prototyping
5. Redesign and prototyping
6. Final Detail Design
7. Final Detail design of Die/Mould
8. Manufacturing of the Die/Mould
9. Mass Manufacturing of the Components
10. Assembly of the components (Final Product)

At present, we are in 7th stage.



Presently, we are at stage 7 of this process.

Detail Design of the present product:

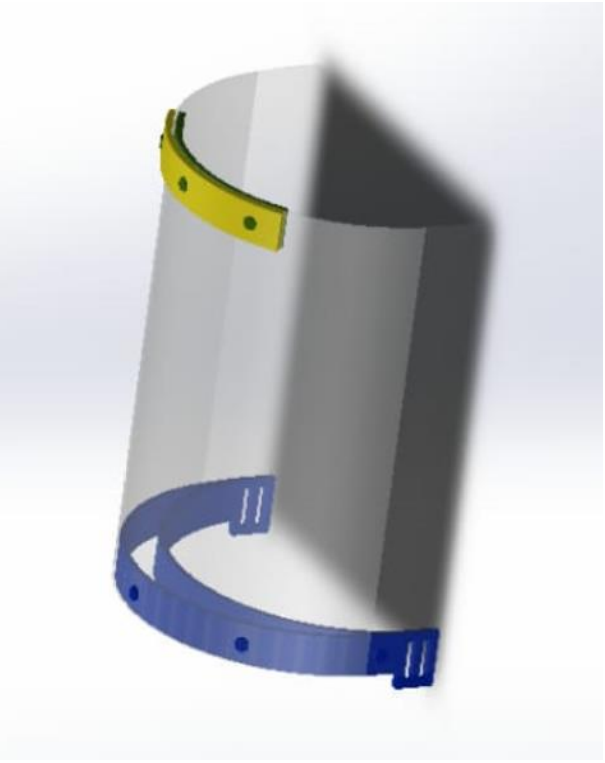
1. The design is a fit to head design with keeping in mind the ergonomics required.
2. The design is made such that the product can be assembled at any time without any extra fastener/joint required.
3. The transportation of a large quantity of product is easy because of possible assembly.
4. The injection molding process enables mass manufacturing in large quantities in less time.

Following are the required Material, proposed manufacturing processes and the cost estimates:

Cost estimate of Face Shield:

S. No.	Component	Raw Material	Manufacturing Process	Row material cost	Manufacturing cost	Approximate Cost (INR)
1	Safety sheet	Plastic sheet (15''X10'')	Holes using a Drill Machine			
2	Head strip (Fixed)	PDPE (30 gm)	Injection moulding			
3	Head Strip (Rotating)	LDPE (30 gm)	Injection moulding			
4	Chin strip	LDPE (20 gm)	Injection moulding			
5	Rubber band	Rubber band (15 inch)	Holes using a Drill Machine			
Total Cost						

A 3D CAD model and 3D printed physical assembly of the product:



For any queries/suggestions, please contact:

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