REDX
Hyderabad

Open Eye CAD : Interactive Open Source Repository

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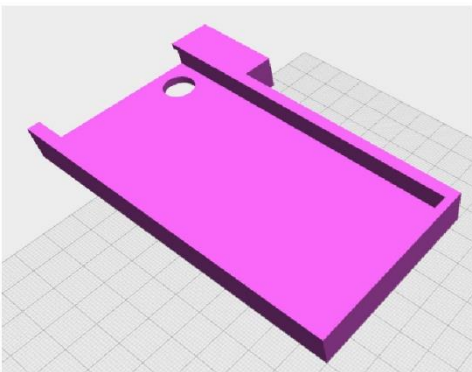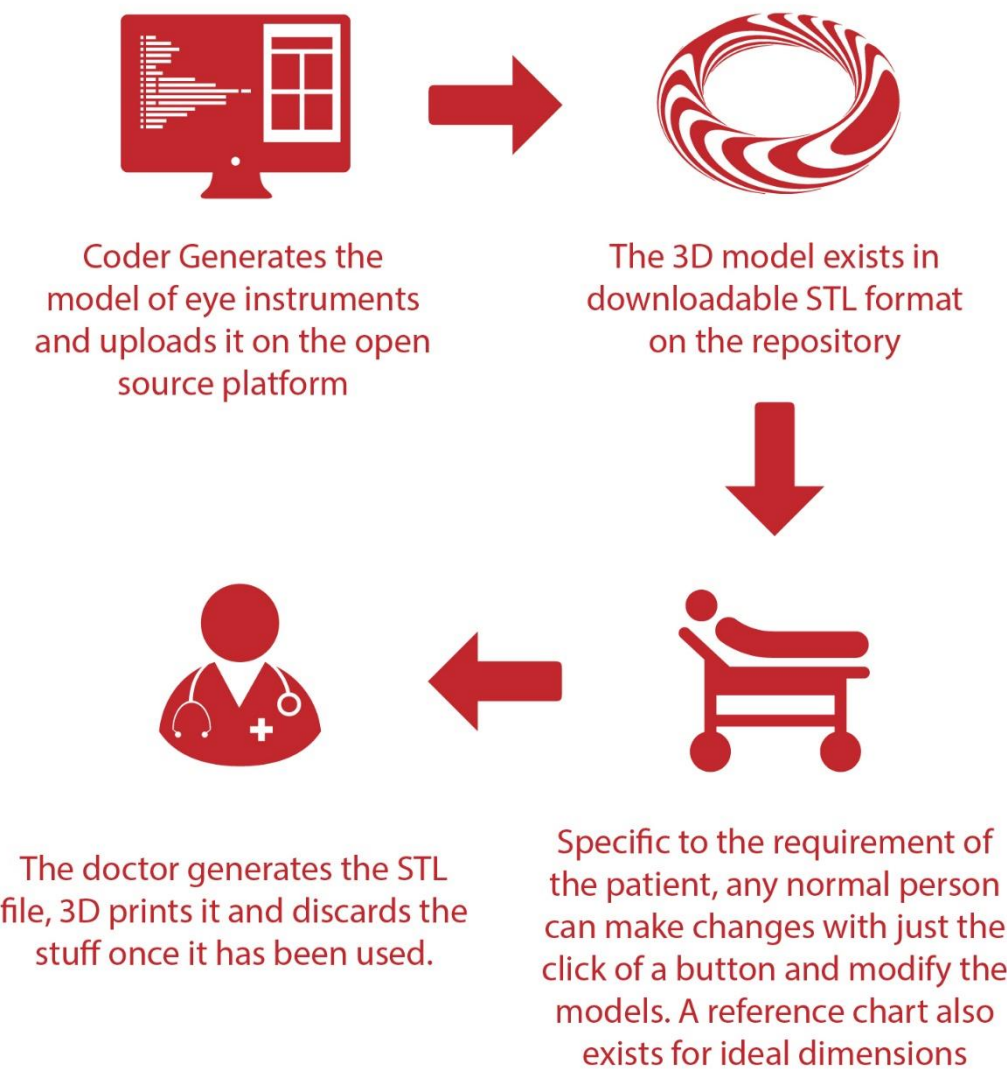Mentors : Tristan Swedish, Dr. Cathy Stern, Dr. Anthony Vipin Das, Sai Naga Sri Harsha Ch

Problem Statement

Online repositories for 3D models exist but customizability and accessibility to modify them is non existent! Files can be modified only by a proficient coder or a designer. For a normal person in medical profession, there is no provision for customizing things. Hence the accessibility and use of something as efficient as 3D printing is a segment doctors still don't touch.
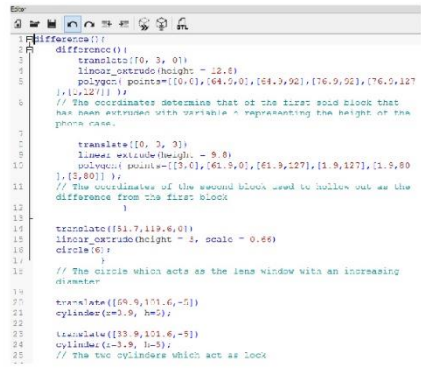
Potential Impact

Doctors and users can modify the models by changing just some parameters. The entire programming happens in the background. The modified rendered image can be viewed and the STL file generated then and there itself. 5 years down the line, when 3D printers are going to be a household name, this platform will revolutionize accessibility, be cost effective and tackle sterility as well.

Highlights

Coder Generates the model of eye instruments and uploads it on the open source platform

The 3D model exists in downloadable STL format on the repository

The doctor generates the STL file, 3D prints it and discards the stuff once it has been used.

Specific to the requirement of the patient, any normal person can make changes with just the click of a button and modify the models. A reference chart also exists for ideal dimensions

What The User Sees

Behind the Scenes

Eye Treatment process becomes smooth and personalized. Also, the repository which earlier always needed a designer or a coder for making the changes can easily be modified now with just the click of some buttons by any person.

Results and Future Work

Currently we have made a basic web repository with just a couple of models and a tutorial to start with. Each and every model of any device that can be 3D printed needs to be coded and then corresponding variables be introduced as parameters so that any change by the user modifies and generates the rendered image all in the background. Hence, the code for models need to be developed with open source participation from as many people around the world as possible.

Development of a software with an existing CAD platform to automatically generate parametric code is one prime target.

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