Project Report

Project Title : Ray-Optics Visualizer

Purpose : Teaching Learning Simulation which helps understand image formation through Lens and Mirror.

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Modules : (1) Image Formation Through Lens
(2) Image Formation Through Mirror

Java Features Used : (1) Java Swing
(2) Java AWT
(3) Java Event Handling Mechanism
(4) Exception Handling Mechanism
(5) Inheritance
(6) Multithreading
(7) Basic File Handling
(8) Aggregation

Project Features :

- User Interactive : Wide range of control in the hand of the user. User can adjust the value of distance of the object, height of object and focal length, refractive index of lens as well as medium in Lens.

- Dynamically Adjusting Scale : When an object or image is out of scope it sets scale accordingly.

- Layered Program :
  GUI -> Event Handling -> Business Logic

- Explanatory : It includes detailed information about each Optical device used in modules. It also includes detailed information about Ray-Optics.

- Robust : It can handle a wide range of exceptions.

Project Outcome :

- learned about practical applications of java.
- Problem Analysis
- Team Work
- Project Management
- Modern Tool Usage
- Explored new topics apart from curriculum.