CS101 PROJECT Spring 2014-15

ImaGe-An Image Generator

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Overall Perspective

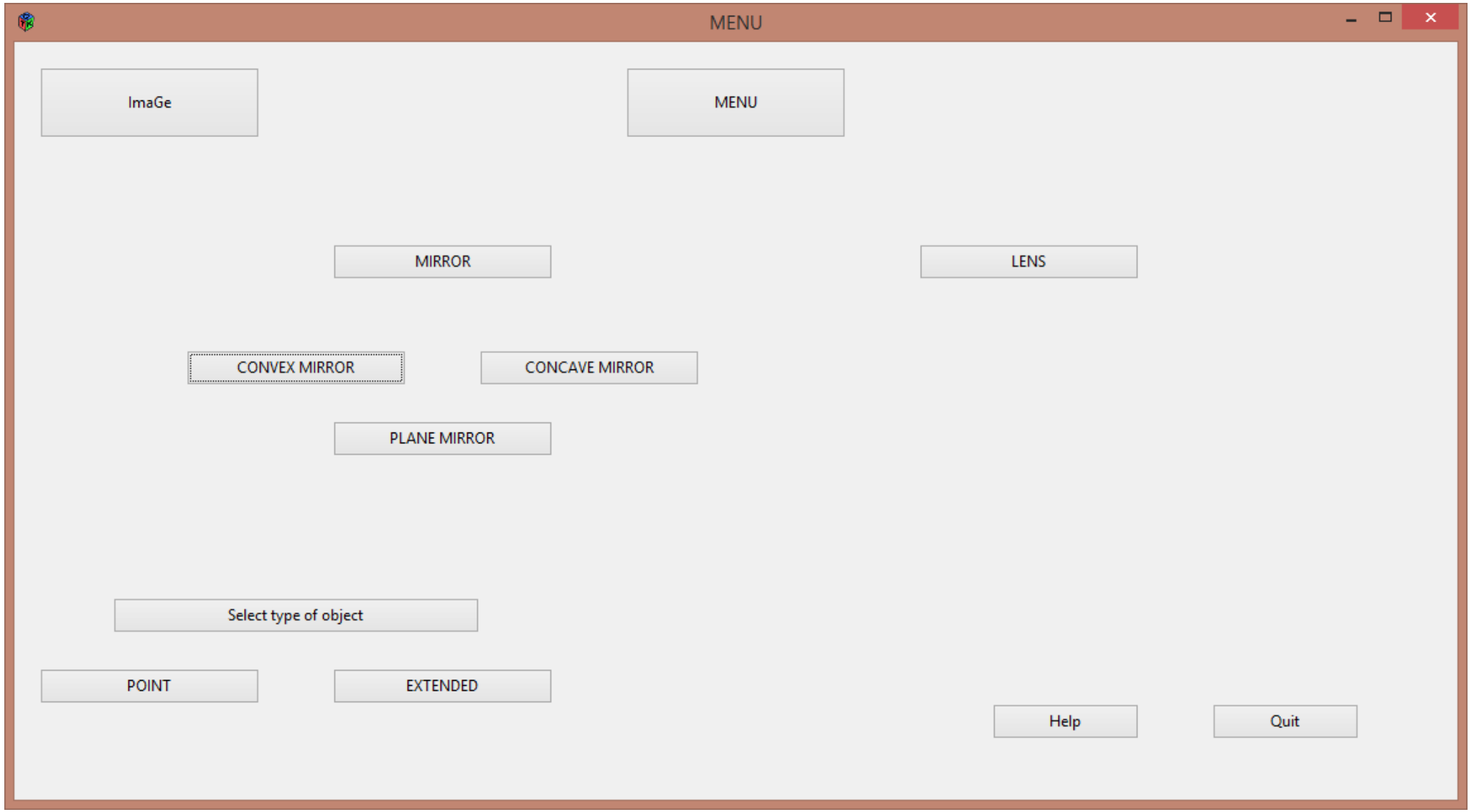
- Our software aims to construct the image of a point object or a ‘simple’ extended object, along with the required ray diagrams.

The main tasks in hand are:

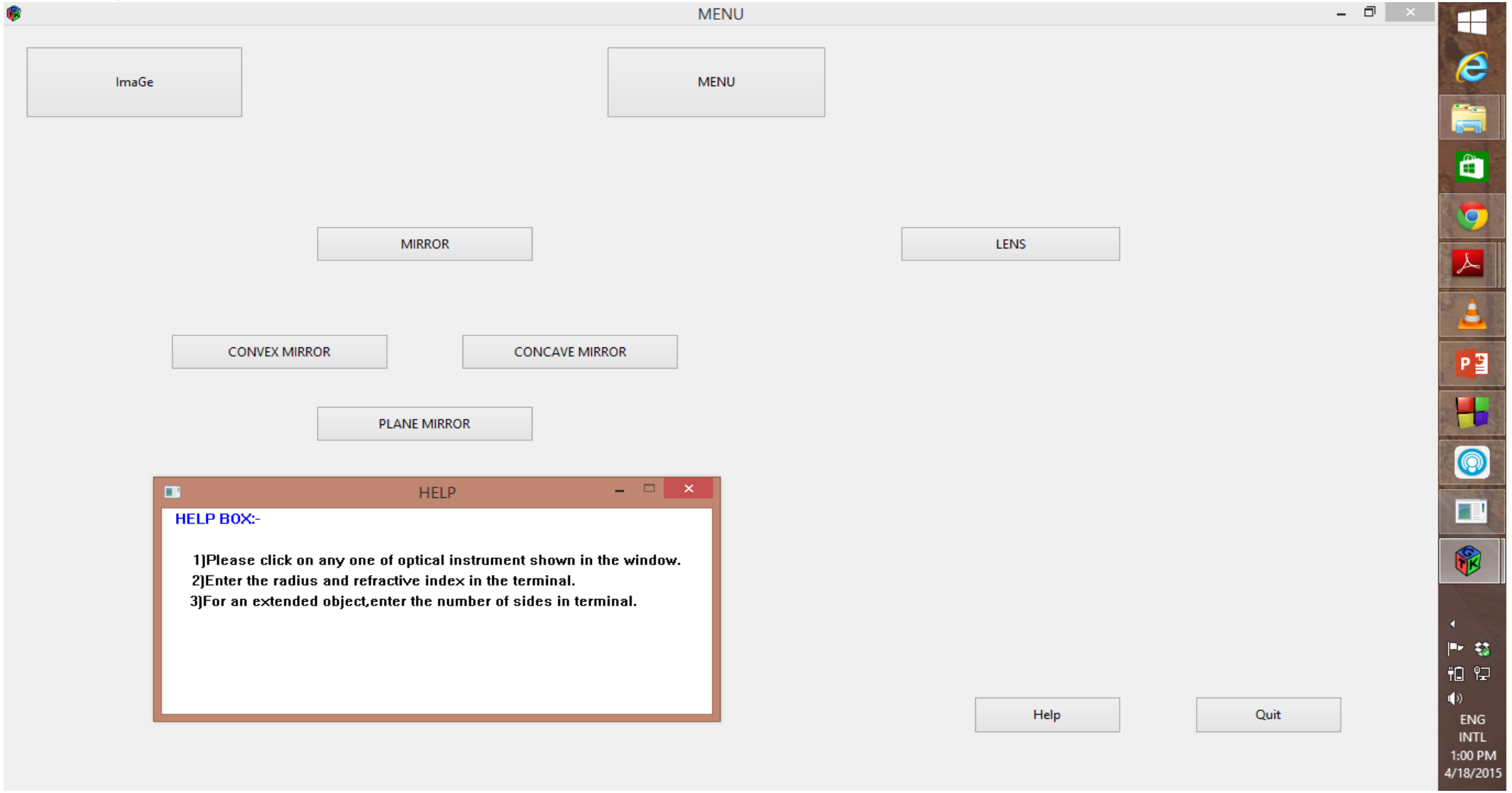
- To construct various base classes corresponding to each of the optical instrument, types of lines.
- To display the image parameters, alongside the ray diagram.
- To create a user friendly menu for inputting various optical parameters like refractive indices, radii of curvature.
- To develop a help box in case the user is unable to follow the instructions.

Project Images for Different Windows

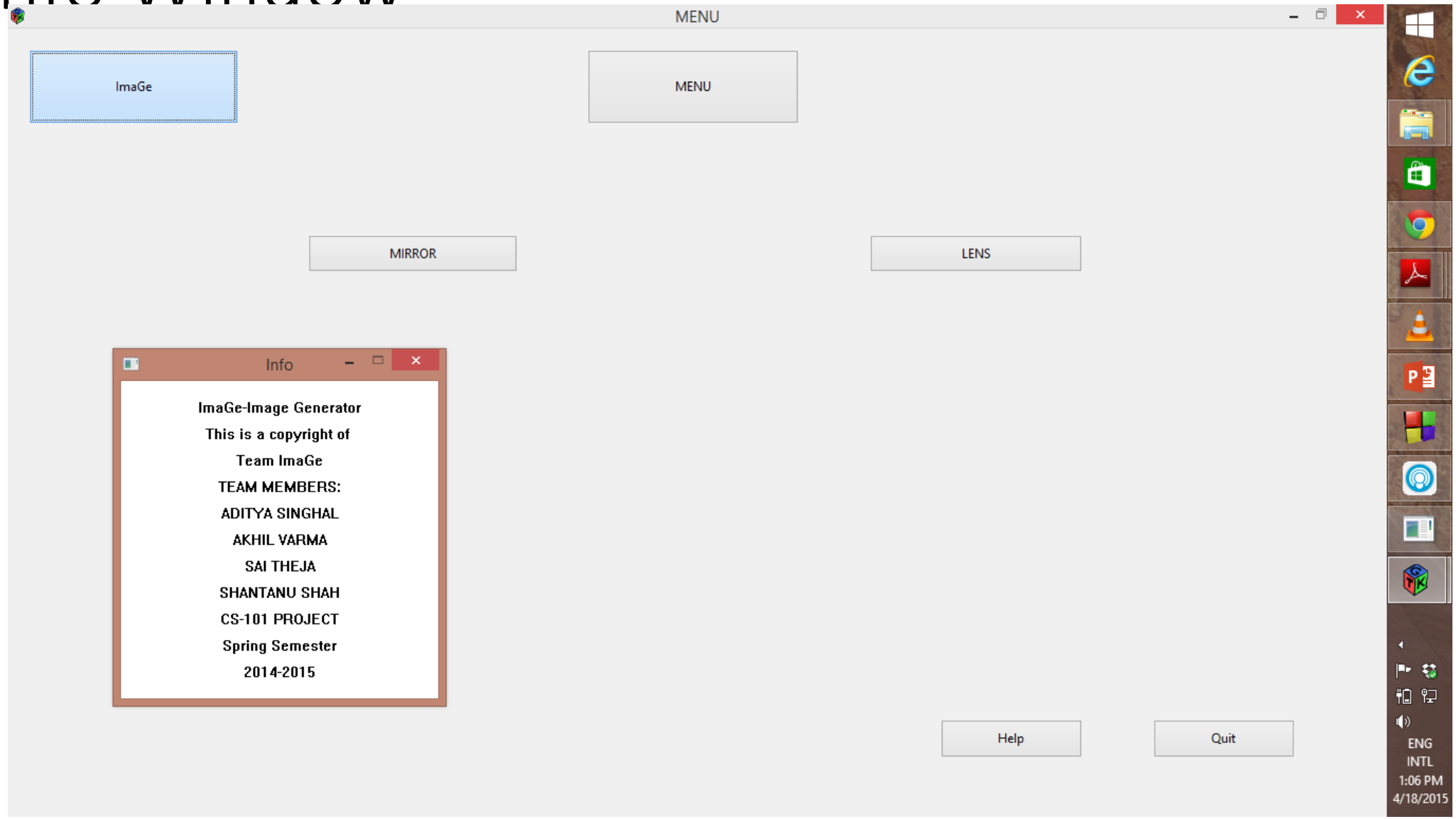
Menu Window


MENU
ImaGe
MENU
MIRROR
LENS
CONVEX MIRROR
CONCAVE MIRROR
PLANE MIRROR
Select type of object
POINT
EXTENDED
Help
Quit

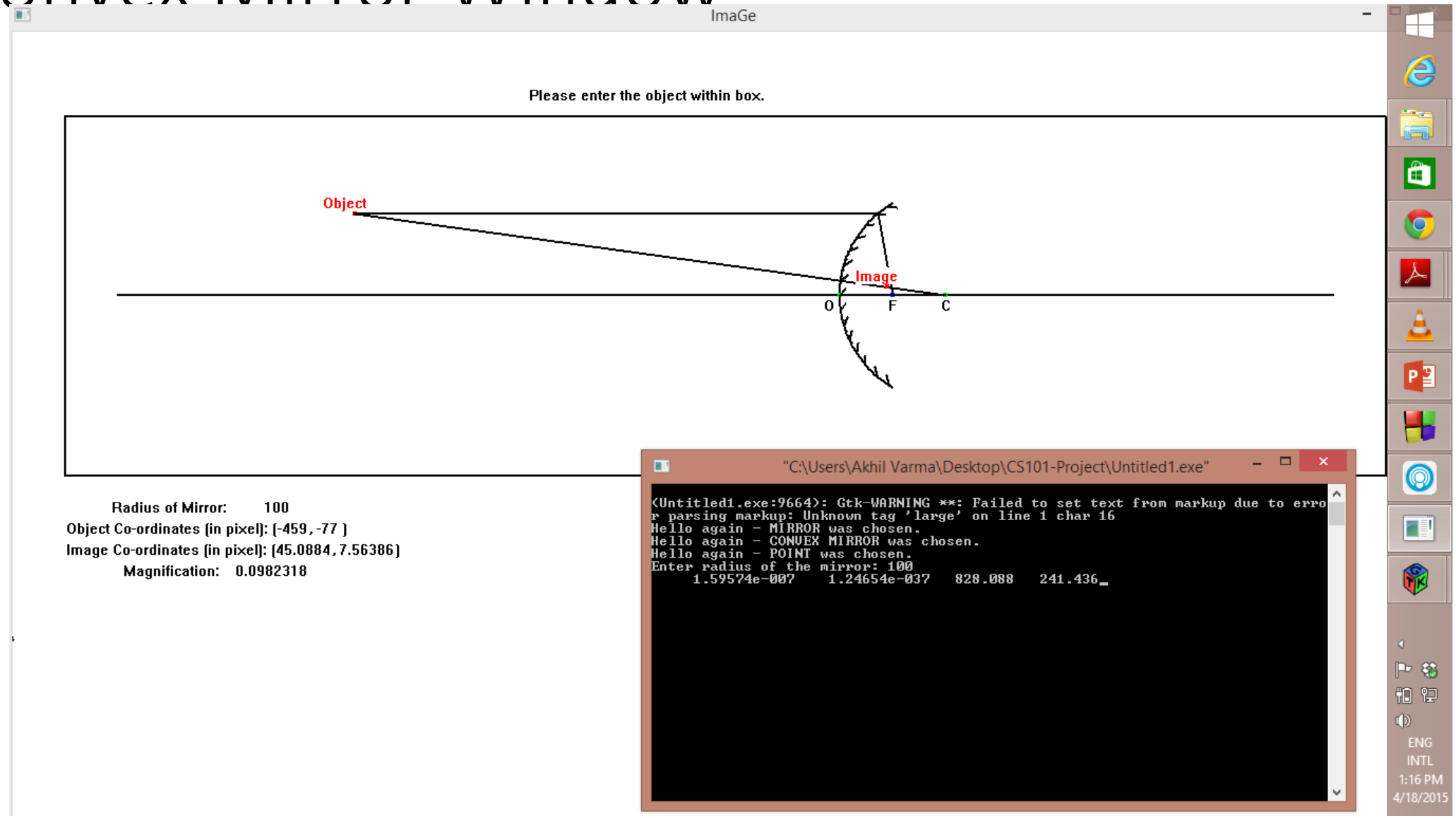
Help Window


MENU
ImaGe
MENU
MIRROR
LENS
CONVEX MIRROR
CONCAVE MIRROR
PLANE MIRROR
HELP
HELP BOX:-
1)Please click on any one of optical instrument shown in the window.
2)Enter the radius and refractive index in the terminal.
3)For an extended object,enter the number of sides in terminal.
Help
Quit
ENG
INTL
1:00 PM
4/18/2015

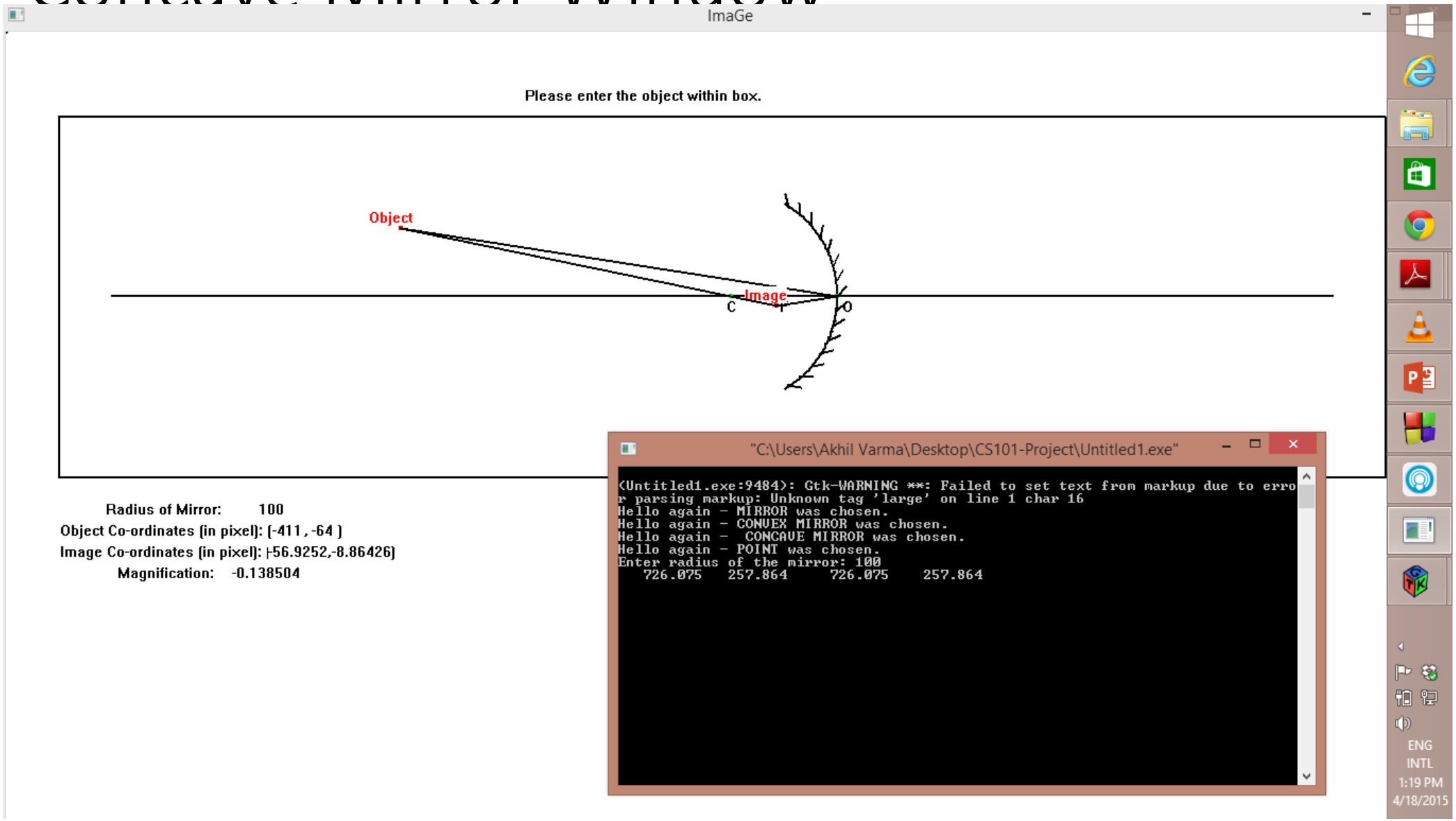
Info Window


MENU
ImaGe
MENU
MIRROR
LENS
Info
ImaGe-Image Generator
This is a copyright of
Team ImaGe
TEAM MEMBERS:
ADITYA SINGHAL
AKHIL VARMA
SAI THEJA
SHANTANU SHAH
CS-101 PROJECT
Spring Semester
2014-2015
Help
Quit
ENG
INTL
1:06 PM
4/18/2015

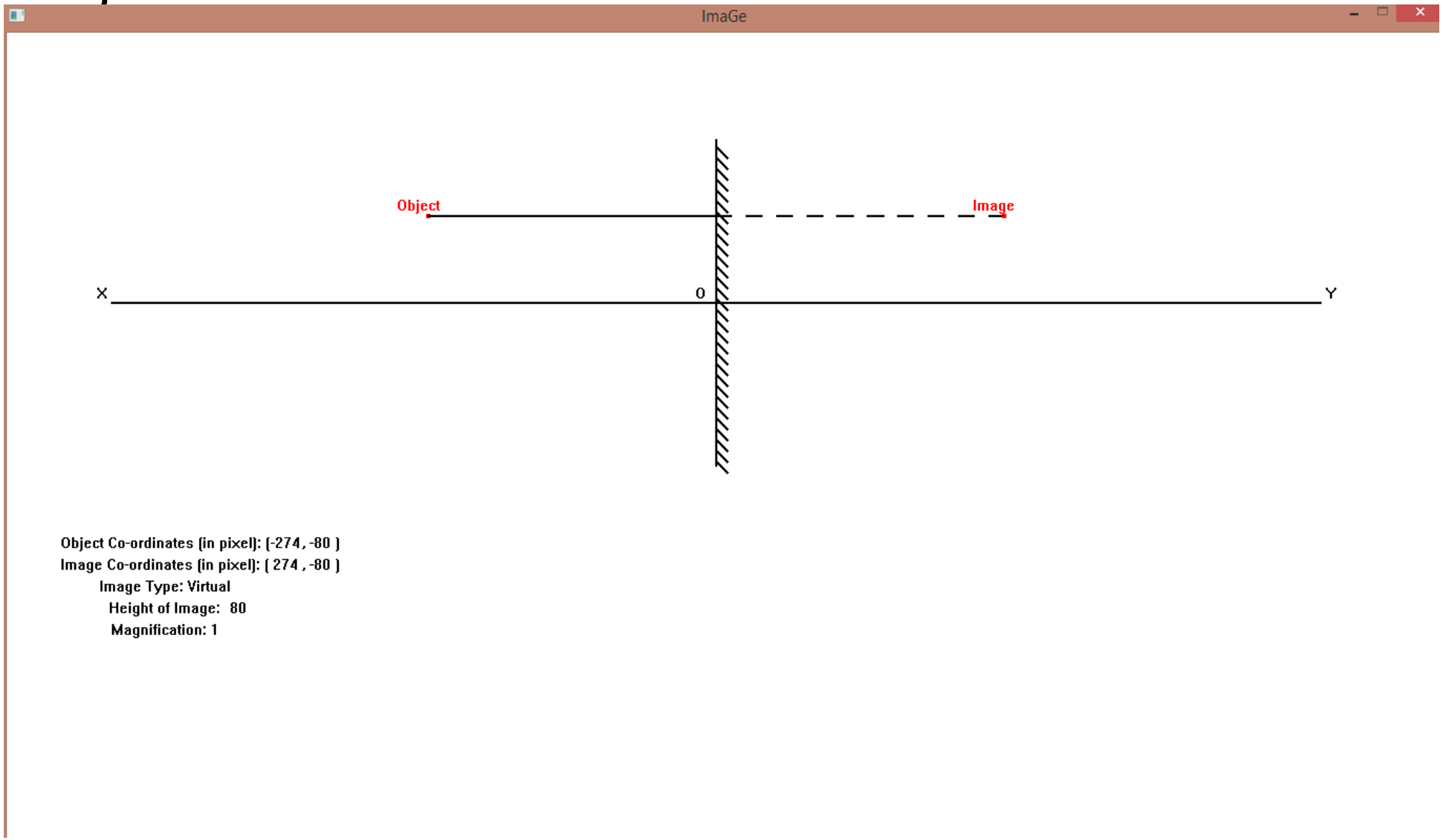
Convex Mirror Window



Concave Mirror Window



Project: Plane mirror window



Convex Lens

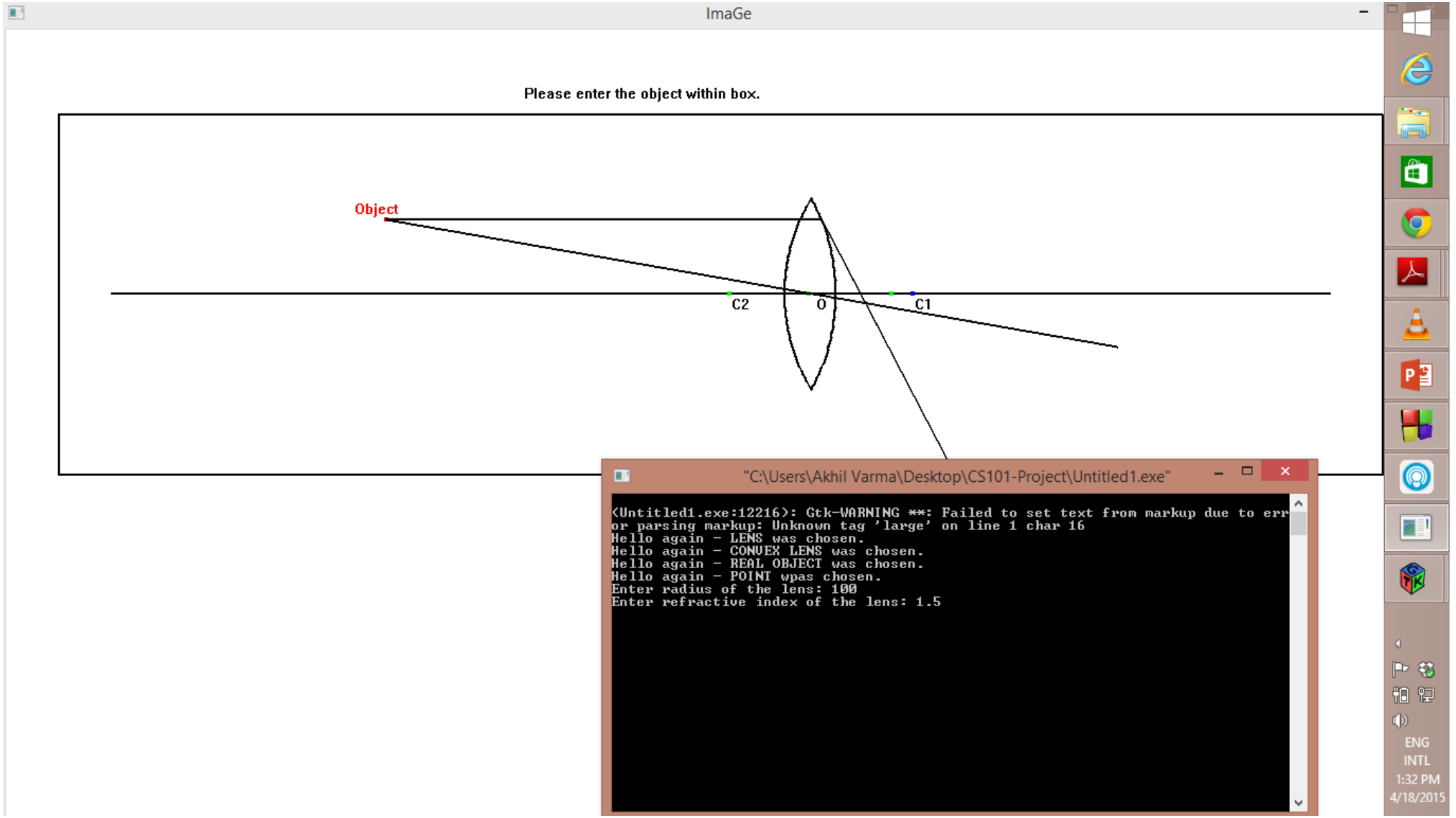
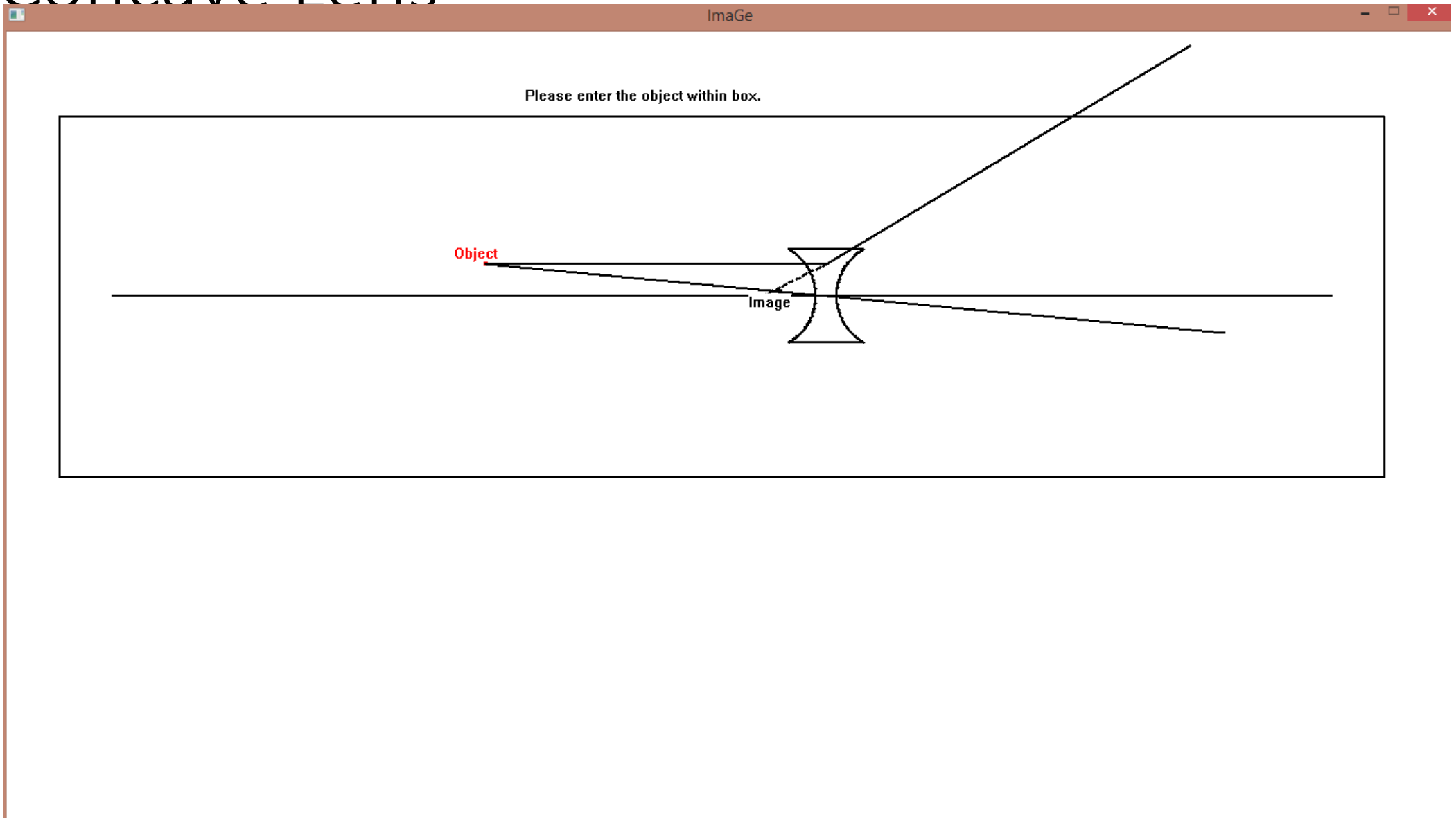
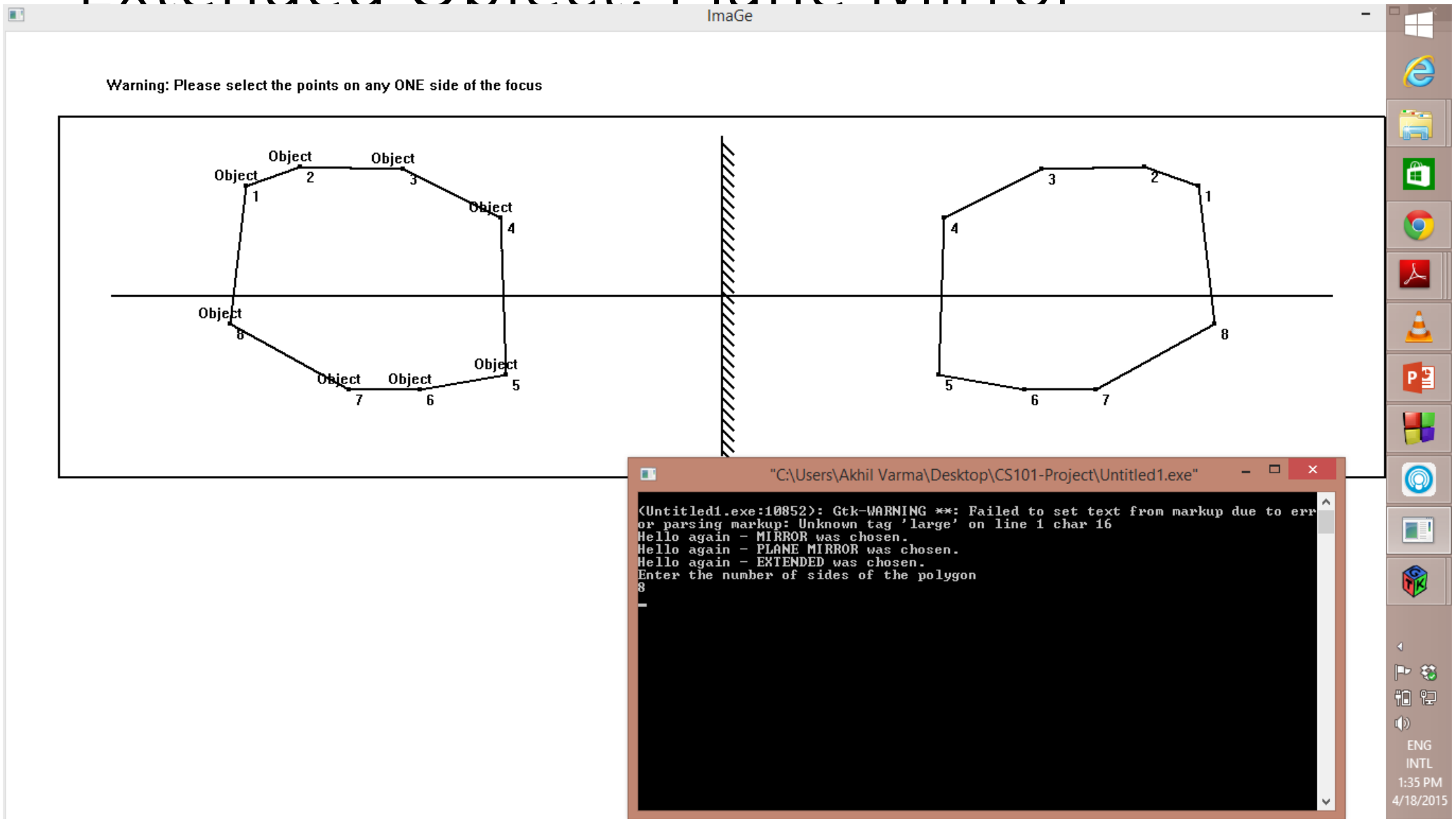


ImaGe
Please enter the object within box.
Object
C2
O
C1
"C:\Users\Akhil Varma\Desktop\CS101-Project\Untitled1.exe"
(Untitled1.exe:12216): Gtk-WARNING **: Failed to set text from markup due to err
or parsing markup: Unknown tag 'large' on line 1 char 16
Hello again - LENS was chosen.
Hello again - CONVEX LENS was chosen.
Hello again - REAL OBJECT was chosen.
Hello again - POINT wpas chosen.
Enter radius of the lens: 100
Enter refractive index of the lens: 1.5
ENG
INTL
1:32 PM
4/18/2015

Concave Lens



Extended Object: Plane Mirror



Major Challenges Faced

1. Setting up of two Canvas screens (This problem may be familiar to most of you!).The problem is that you cannot execute two Canvas screens in the same code in Windows OS.

   This issue does not occur when we use Ubuntu OS.
2. In some cases we saw that the image formed is well out of the canvas window.
3. The program doesn’t execute when we try to open more than one GTK windows.

Tackling Measures

What we did:

- We converted the menu window to run under GTK+ code, so that it can run in Windows OS too.

Redefine our way:

- Two canvas screens did not get executed simultaneously so we used GTK+ for our main title screen and menu screen and canvas screen for generating the image.

Future Improvements

- One major step would be to allow the user to draw freely. This can probably be done by creating a bitmap file in an MS Paint interface.
- Another can be when an user can create his/her own account and keep a track of whatever he has done in the past on the software.
- Taking this project to higher level, we can create whole optics which will help students to learn tough problems of optics with ease in real life.

THANK YOU