

```

1  using System;
2  using System.Collections.Generic;
3  using System.Threading;
4  using System.Threading.Tasks;
5  using Structures;
6  using UI;
7  using static Program.Constants;
8  using Gtk;
9  using Gdk;
10 using Cairo;
11 using Graphics;
12 namespace Program {
13     static class Program {
14         public static PlanetarySystem activesys {get; set;}
15         public static SystemView sys_view {get; set;} = null;
16         public static double timestep {get; set;}
17         //public static List<Boolean> RadioOptions {get; set;}
18         public static List<Body> CustomBodies {get; set;} = new List<Body>();
19         public static List<bool> CustomCenters {get; set;} = new List<bool>();
20         public static Gtk.Window mainWindow {get; set;}
21         public static double radius_multiplier {get; set;}
22         public static int line_max {get; set;}
23         public static void Start() {
24             activesys = new Structures.PlanetarySystem(CustomBodies);
25             if (activesys.centers == null) activesys.centers = new List<int>();
26             activesys.centers.Clear();
27             for (int i = 0; i < CustomCenters.Count; i++) {
28                 if (CustomCenters[i]) activesys.centers.Add(i);
29             }
30             mainWindow = new Gtk.Window("Astrodynamics Simulation");
31             mainWindow.SetDefaultSize(1280,720);
32             mainWindow.Events |= EventMask.PointerMotionMask |
EventMask.ScrollMask;
33             mainWindow.DeleteEvent += delegate { Application.Quit (); };
34             mainWindow.KeyPressEvent += Input.KeyPress;
35             mainWindow.MotionNotifyEvent += Input.MouseMovement;
36             mainWindow.ScrollEvent += Input.Scroll;
37             sys_view = new SystemView(activesys);
38             sys_view.radius_multiplier = radius_multiplier;
39             sys_view.line_max = line_max;
40             mainWindow.Add(sys_view);
41             activesys.StartAsync(step: timestep); // Start Mechanics
42             sys_view.PlayAsync(interval: 0); // Start Display
43             mainWindow.ShowAll();
44         }
45
46         static void Main(string[] args) {
47             try {
48                 Application.Init();
49                 var menu = new UI.Menu();
50                 Application.Run();
51             } catch (Exception e) {
52                 Console.WriteLine("An unexpected error occured");
53                 Console.WriteLine($"{e.Message}\n{e.StackTrace}");
54             }
55         }
56     }
57 }

```