System_object

+type
+m
+x
+y
+Vx
+Vy
+Fx
+Fy
+color
+image

-

Star

+R

-

Planet

+R

-

GUI

+start_button
+space
+header_font
+window_width
+window_height
+scale_factor
+displayed_time
+load_file_button
+save_file_button
+time_label

+main(solar_system, inout_system, gui)
+calculate_scale_factor(self, max_distance)
+scale_x(self, x)
+scale_y(self, y)
+create_star_image(self, space, star)
+create_planet_image(self, space, planet)
+update_system_name(self, space, system_name)
+update_object_position(self, space, body)

Solar_system

+gravitational_constant
+perform_execution
+physical_time
+time_step
+time_speed
+time_step
+time_step_entry
+space_objects

+main(solar_system, inout_system, gui)
+calculate_scale_factor(self, max_distance)
+scale_x(self, x)
+scale_y(self, y)
+create_star_image(self, space, star)
+create_planet_image(self, space, planet)
+update_system_name(self, space, system_name)
+update_object_position(self, space, body)

InOut_system

-

+read_space_objects_data_from_file(self, input_filename)
+parse_star_parameters(line, star)
+parse_planet_parameters(line, planet)
+write_space_objects_data_to_file(output_filename, space_objects)
+open_file_dialog(solar_system, gui)
+save_file_dialog(self, solar_system)