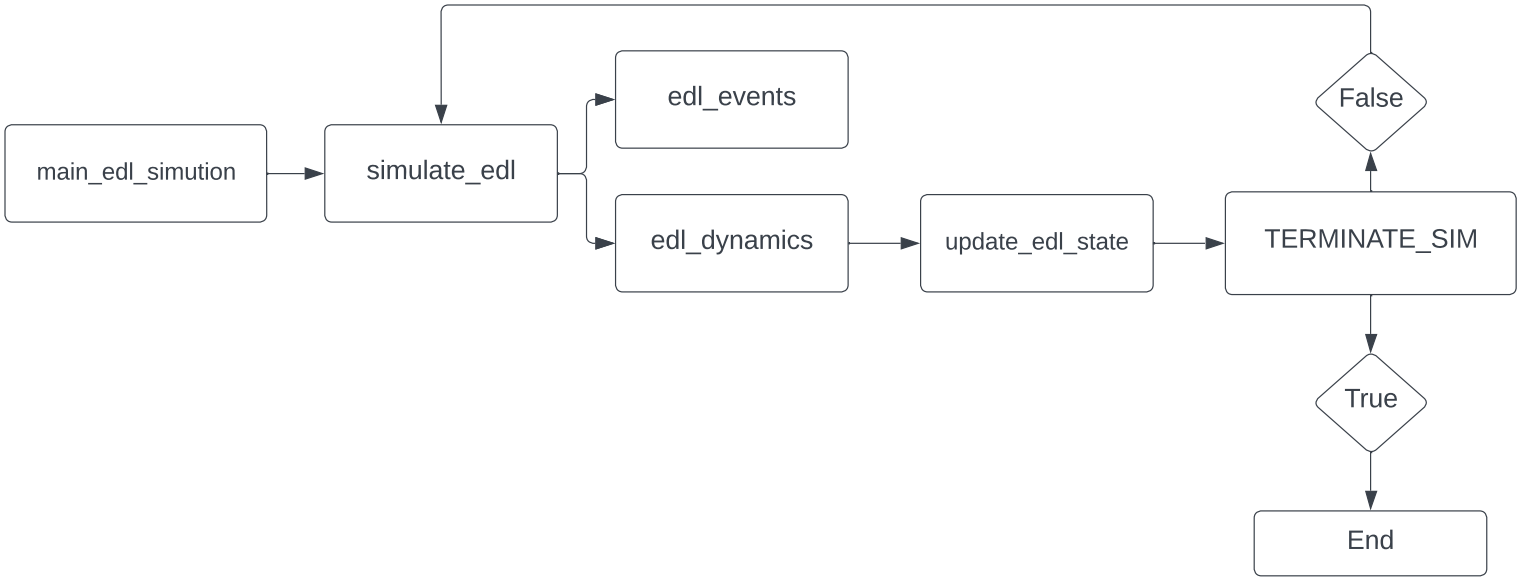
Task 4 Flowchart



The main_edl_simution functions works by calling the simulate_edl function. The simulate_edl function is a loop that is essentially the brains of the EDL System and process simuation on Mars. Using edl_events, the function gathers information regarding EDL events, required altitude data, and time data. This information is then used to form a function based on edl_dynamics. An ODE IVP solver, which is a high order Runge Kutta method, is used to run the simulation. With the help of initial conditions provided from edl_state, the ODE is solved and returns data involving time and altitude as well as the events that occur at those speicified times and altitudes. The EDL state vecotors are updated via update_edl_state using this new data. update_edl_state also checks if the parameters for a simulation occured. If not and if the max simulation time is not reached, the loop starts with solving the ODE again.