1. Setup: Load SPICE kernels and define spacecraft parameters (mass, thrust, Isp) and mission parameters (asteroids, start/end dates).
2. Initial Solution: Solve Lambert’s problem using grid search to determine v1, v2, flight time, and minimum Δv.
3. Control Initialization: Generate an initial thrust guess based on the departure velocity direction.
4. Trajectory Propagation: Perform forward and backward Keplerian propagation to update state variables and mass at each segment based on control inputs (thrust).
5. Optimization: Use MATLAB’s fmincon to iteratively adjust control variables, ensuring trajectory matching while minimizing fuel consumption.
6. Visualization: Plot the optimized trajectory, including forward/backward paths, thrust points, and asteroid orbits.