Flow Chart Of Railway Crossing

1. Initialize:
   * Set the initial state of the crossing, including barrier positions, signal states, and any other relevant variables.
   * Establish communication with train control systems, sensors, and traffic management systems.
2. Monitor Train Approach:
   * Continuously monitor train detection sensors to detect the approaching train.
   * If a train is detected, proceed to the next step. Otherwise, continue monitoring.
3. Activate Warning Signals:
   * Activate warning signals such as flashing lights, bells, and audio announcements to alert road users of the approaching train.
   * Update the signal state variables accordingly.
4. Lower Barriers:
   * Lower the barriers at the railway crossing to prevent vehicles from crossing the tracks.
   * Update the barrier positions accordingly.
5. Wait for Train Passage:
   * Wait for the train to pass completely through the crossing.
   * Monitor train detection sensors to determine when the train has cleared the crossing.
6. Train Clearance:
   * Once the train has passed, verify that the train has cleared the crossing area by checking the train detection sensors.
   * If the train has not completely cleared the crossing, wait until it has.
7. Deactivate Warning Signals:
   * Once the train has cleared the crossing, deactivate the warning signals.
   * Update the signal state variables accordingly.
8. Raise Barriers:
   * Raise the barriers to allow vehicles to cross the tracks safely.
   * Update the barrier positions accordingly.
9. Repeat:
   * Return to Step 2 and continue monitoring for the next train approach.
10. Terminate:
    * End the algorithm when the railway crossing management system is shut down or no longer in operation.