- Write a short recap of the four tracking steps and what you implemented there (EKF, track management, data association, camera-lidar sensor fusion). Which results did you achieve? Which part of the project was most difficult for you to complete, and why?
    - Extended Kalman Filter (EKF): A nonlinear Kalman filter has been implemented for a system with six states. The main issue with this part was calculating the Q for the filter because the formula was not mentioned in the course so I had to write it down, otherwise it was easy to implement the Kalman filter because I have worked with these kinds of filters during my PhD studies.
    - Track Management: Creating new tracks, updating the status of the exciting ones and deltation of the old ones are the tasks of this part of the project.
    - Data Association: Matching tracks and measurements using Mahalanobis distance is implemented in this part of the project. Track management and Data Association were really challenging for me and took lots of effort to solve the issues.
    - Camera-Lidar Sensor Fusion: Using both sensors' data is implemented here. Both Lidar and Camera sensor's data is used to make sure we have a real object and it's not just a ghost.
- Do you see any benefits in camera-lidar fusion compared to lidar-only tracking (in theory and in your concrete results)?
    - It is necessary to have both sensors to make sure that the detections are real objects. Before using both, some ghost detections were in the results but after sensor fusion, the ghost ones' state was just "initialized not 'tentative' or 'confirmed'.
- Which challenges will a sensor fusion system face in real-life scenarios? Did you see any of these challenges in the project?
    - Different weather conditions
    - Time of the day
    - Coordinate matching
    - Sensor calibration

  None of the challenges were happening in the project but for a real-life implementation all of these could make real problems.
- Can you think of ways to improve your tracking results in the future?
    - More motion model could be implemented
    - Unscented Kalman filter could be tested
    - An adaptive version of the Kalman filter could be implemented to make make it possible to work in a more dynamic environment/condition