Homework Assignment 2

Note: You should submit a hardcopy (typing is strongly recommended or writing clearly) before the beginning of class time on the due date.

Read all articles about DARPA grand challenge (posted in our website under Unit B case study) and answer the following questions:

1. During the 2004 Challenge the Blue Team neglected to turn on the unit responsible for maintaining balance. Consequently, the robot fell over immediately and was unable to right itself. What changes might be made to the system to prevent this sort of blunder?

2. In 2005, Team DAD used a Toyota truck with a system of spinning lasers as it's "visual" system. What advantages and or disadvantage does such a system have compared to camera-based systems?

3. How different was the 2007 DARPA urban challenge from the earlier ones? Do you think that difference led to the design of the new robots to exhibit some human like personalities?

4. Which team (robot) won the 2004, 2005 and 2007 DARPA challenges respectively?

5. What is the main goal of "Shelley", the robot Audi designed to climb the Pikes Peak in Colorado? What advantages does it hold over a human driver?