technische universität dortmund

fakultät für informatik

CS 12 computer science 12

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Exercise Sheet 7 (Practice)

(10 Points)

Please note: Solutions to the theory assignment must be submitted (individually or in pairs) until 29.11.2019 at 10:00 AM (mailbox in OH16, ground floor, in front of room E16). Submitting solutions via mail is *not* possible. Discussion: 02.-06.12.2019.

1   Preparation (3 Points)

Please note: The solution to this assignment must be submitted!

Previous to the exercise session, read chapter 7 and 13.5 in the OSEK manual. Please answer the following questions:

- a.) By means of what can an event be clearly identified?

- b.) Which system services can only be executed by the task that owns the event?

- c.) Why can only an extended task own an event?

2   OSEK Events (7 Points)

Use the credentials you received at the beginning of the exercise session for logging in. Down In the CI-Lab, log in using the credentials you received. Open the folder containing the material for the current exercise session (if in doubt, ask your tutor). In the folder `ev3osek/example/AdvancedCollisionDetect`, the file `adv_collision.c` is located.

Complete the .c file so that the robot turns while an obstacle is in front of it. For this purpose, use the event `DistanceEvent` which is owned by the task `Motors`. The task `CheckDistance` has priority 2 and is executed twice per second. The task `Motors` has priority 1 and is also executed twice per second. Both tasks can be active only once. Please note that the LED flashes in green if the robot makes a turn.