

C++ Bootcamp

Project demo

Team E

C++ Bootcamp project demo, TeamE : Mikko H, Jakob S, Annica N

11/19/2020

Course engine/gearbox project MVP deliverable

EXE1: (one thread)

Receive user input (keyboard or logfile)

Convert user action to CAN message in sequence

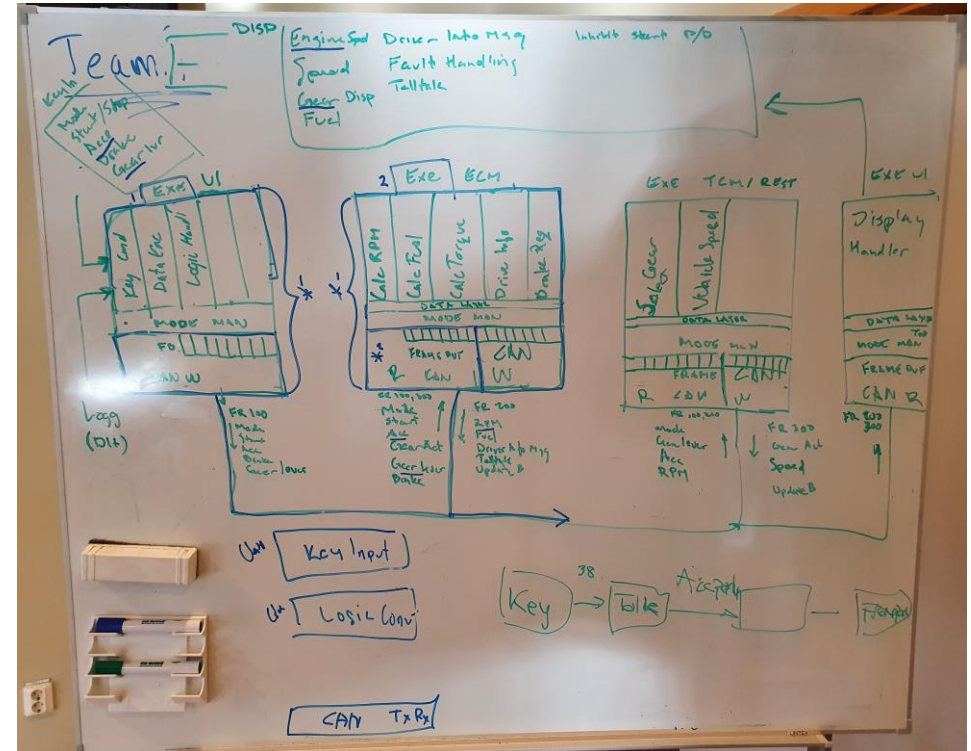
EXE2: (two threads)

Read CAN messages

Emulate engine in parallel

Link to code:

https://github.com/anormen/courseCPP_TeamE



Function overview

User inputs:

Accelerator and brake pedals

Startbutton and mode buttons

Gear selector

Emulated functions:

Vehicle speed

Engine speed

Gear lever and actual gear

Fuel consumption (instantaneous and average)

Driver information messages (4)

Telltales for lamp check, brake and fault display

Engine temp

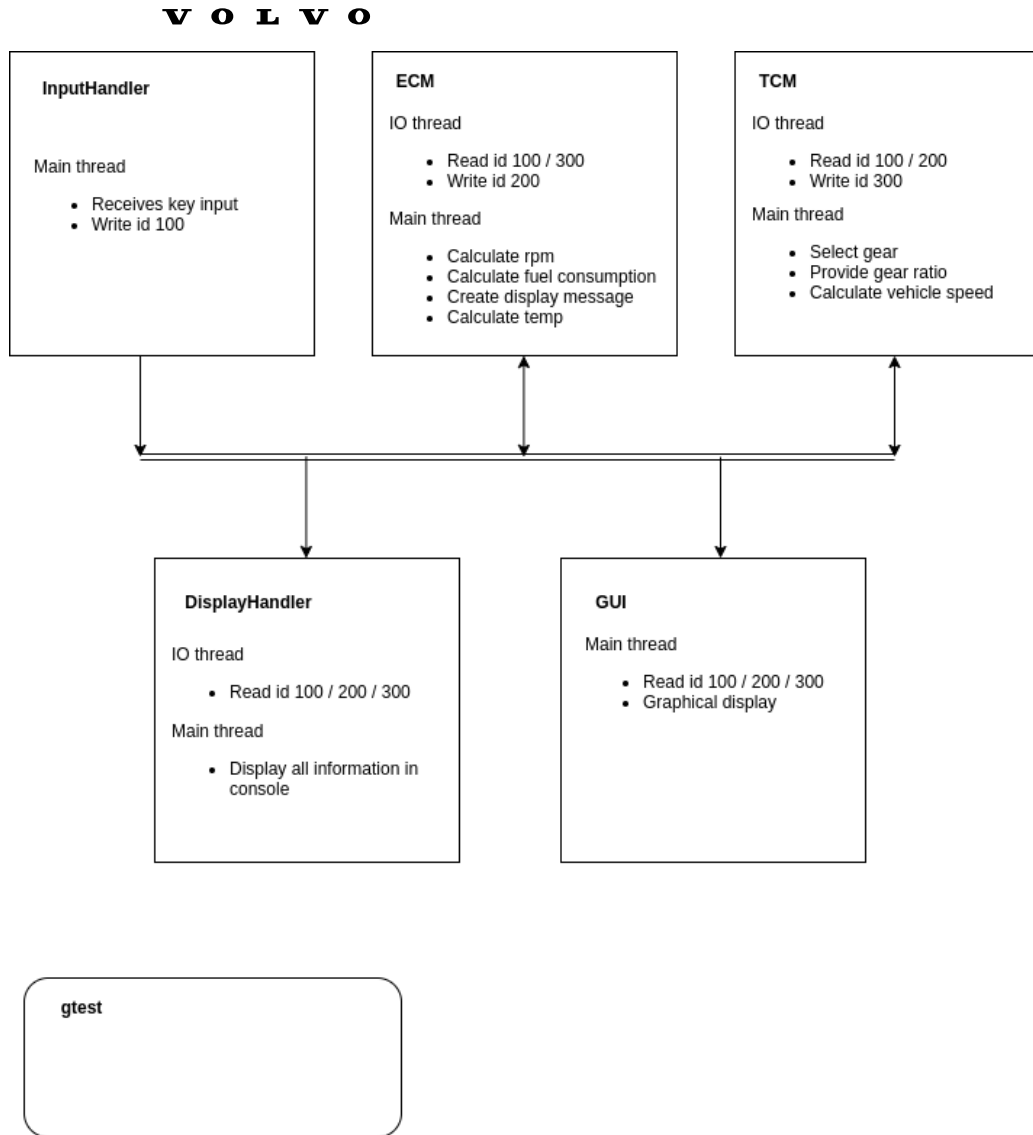
CAN Communication and mode handling

Backlog:

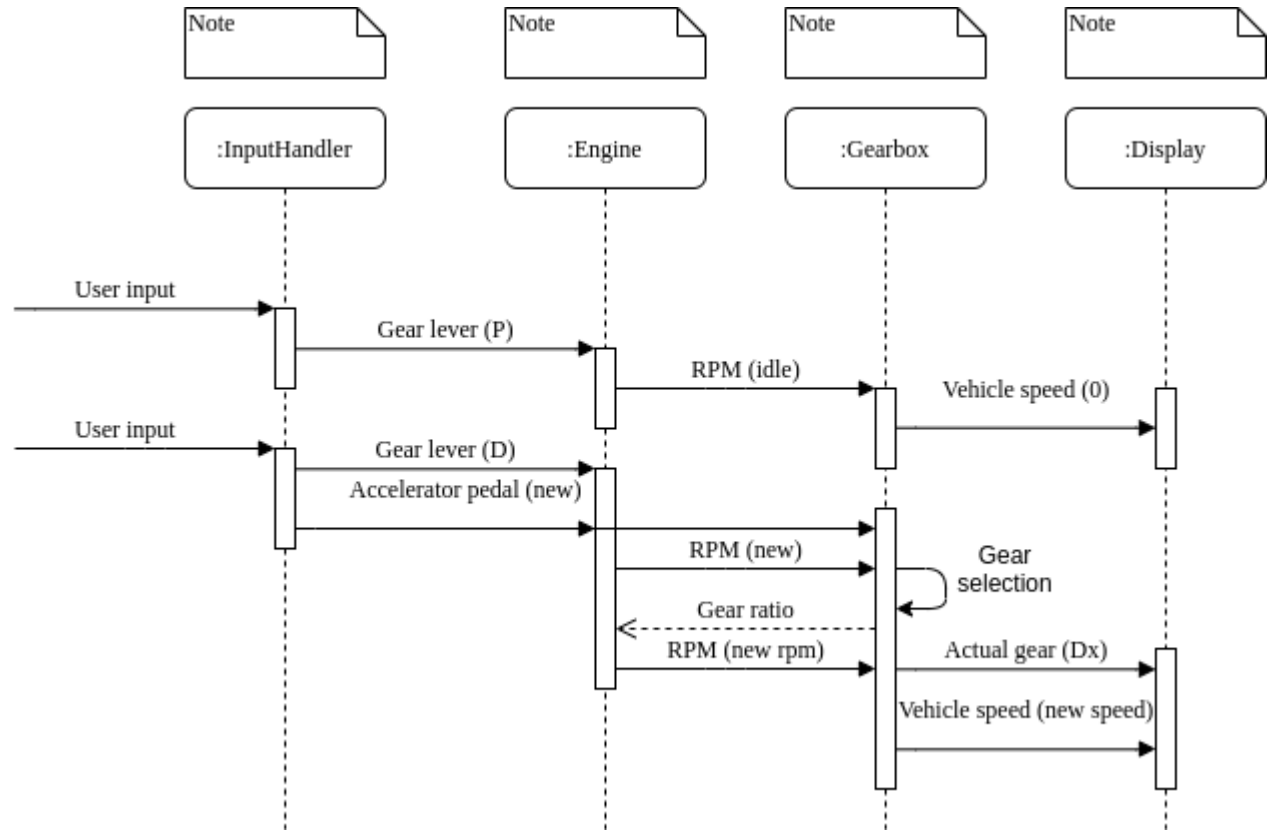
https://github.com/anormen/courseCPP_TeamE/issues?q=is%3Aissue



System overview



Function distribution



Unit testing

Started created unit test for our project

Pilot test cases done for gearbox in google test

```
File Edit View Search Terminal Help
[100%] Built target testGearbox
anormen@anormen-HP-EliteBook-850-G6:~/CPP_Kurs/courseCPP_TeamE/build$ ./test/testGearbox
Running main() from /home/anormen/CPP_Kurs/googletest/googletest/src/gtest_main.cc
[=====] Running 5 tests from 1 test suite.
[-----] Global test environment set-up.
[-----] 5 tests from FrameFixture
[ RUN    ] FrameFixture.test_park_speed
[ OK     ] FrameFixture.test_park_speed (0 ms)
[ RUN    ] FrameFixture.test_park_gear
[ OK     ] FrameFixture.test_park_gear (0 ms)
[ RUN    ] FrameFixture.test_drive_gear_20
[ OK     ] FrameFixture.test_drive_gear_20 (2 ms)
[ RUN    ] FrameFixture.test_drive_gear_100
[ OK     ] FrameFixture.test_drive_gear_100 (2 ms)
[ RUN    ] FrameFixture.test_neutral_speed
[ OK     ] FrameFixture.test_neutral_speed (1 ms)
[-----] 5 tests from FrameFixture (5 ms total)

[-----] Global test environment tear-down
[=====] 5 tests from 1 test suite ran. (6 ms total)
[ PASSED ] 5 tests.
anormen@anormen-HP-EliteBook-850-G6:~/CPP_Kurs/courseCPP_TeamE/build$
```

Backlog remainder

Brake functionality

Torque calculation

Telltales

Implement more gtest testcases

Input from log file

Beautification and optimization of code

Link to backlog:

https://github.com/anormen/courseCPP_TeamE/issues

<input type="checkbox"/>	🚨 8 Open ✓ 28 Closed
<input type="checkbox"/>	🚨 Implement brake functionality enhancement #36 opened 15 days ago by jsuld 🏷 sprint 3
<input type="checkbox"/>	🚨 Investigate brake functionality question #35 opened 15 days ago by jsuld 🏷 sprint 3
<input type="checkbox"/>	🚨 Investigate testing #29 opened 15 days ago by jsuld 🏷 sprint 3
<input type="checkbox"/>	🚨 Investigate mode manager functionality enhancement #27 opened 15 days ago by MikkoHarma 🏷 sprint 0
<input type="checkbox"/>	🚨 Investigate torque calculations enhancement #26 opened 15 days ago by jsuld 🏷 sprint 3
<input type="checkbox"/>	🚨 Create data logger reader for input simulation enhancement #23 opened 15 days ago by MikkoHarma 🏷 sprint 3
<input type="checkbox"/>	🚨 Telltale function implementation enhancement #18 opened 15 days ago by MikkoHarma 🏷 sprint 3
<input type="checkbox"/>	🚨 Telltale function analysis question #16 opened 15 days ago by MikkoHarma 🏷 sprint 3



Demo time
Thank you!