İSTANBUL TECHNICAL UNIVERSITY
Department of Computer Engineering
BLG456E – Robotics – Fall 2018
Project Submission – Report & Demo

PROJECT

Summary

This is a group assignment. This assignment is to:

- Submit the final report about your term project.
- Demonstrate your working system for your term project.

The way the assessment for the project is calculated is described in the previously shared rubric.

You can also submit a video demo for some bonus marks, explained below. The bonus marks can be added to your marks for the course, not just for the project (so if you get 100% on the project, you can still earn marks with the video demo).

Video Demo

You can optionally provide a video demo, which can contribute some bonus marks.

The aim of the demo is to:

- Motivate future students to work on similar projects.
- Describe the problem you are solving.
- Demonstrate your solution to it.
- Show you can make cool videos.

Things to consider:

- Make your video demo no more than 2 minutes long, and try to keep it under 1 minute long.
- Use appropriate on-screen text or an appropriate voice-over.
- Make good use of the visualisations you have available.
- Don't dwell on technical details. Try to skip over the boring parts (typing commands, etc.).

The demo can be submitted as a YouTube link, in your report.

The report

The report should present:

- The problem you have tackled and its motivation.
- Background for the problem and a brief literature review (use at least one academic quality source for full marks).
- The design of the solution you have devised, and its relationship to any theoretical concerns.
- The main technical details of the implementation. In particular, a discussion of the relationship between the design and implementation. No more than snippets of source code (no full listings).
- An evaluation of your solution; for example a quantitative comparison to a baseline implementation, or a quantitative characterisation of performance, together with analysis.

- An analysis of the original proposal in the light of the final results and any lessons learned.
- Detailed instructions for how to use the software provided (submitted together with the software).

As far as format is concerned, the following are requested:

- Informative title.
- List of all authors & date.
- An informative abstract that briefly summarises the document (this is not an introduction – it also summarises the results).
- Informative section headers.
- Table of contents.
- Page numbers.
- All figures numbered with captions.
- Full reference list.

The report will be submitted some time **prior to the demonstrations** (exact dates on Ninova).

In-person Demo

You will present your successful robot project to your lecturer and colleagues.

Time available: 4 minutes + 2 minutes per team member (+ questions)

Schedule: Arranged separately.

Who is present: The whole team.

The preparation of a demo is an important skill and is difficult to do well.

It involves:

- Describing the problem.
- Selling the problem (why this problem?).
- Describing the approach.
- Selling the approach (why this approach?).
- Describing the result.

This is done with:

- Visualisation.
- Description.
- Organisation.

Visualisation

If you have a physical implementation, show off the hardware, show it solving the problem – *doing something*.

If you are working in simulation, show the simulation solving the problem – *doing something*.

Illustrate the concepts around the problem and approach with graphics, diagrams or working programs.

If you use a slideshow, use no more than 5 slides.

Try to *show* why it is a good solution. This may be in the demo or by presenting some results (briefly) on slides or suchlike.

Description

Keep up a practised monologue or dialogue explaining each step of the demo:

- why this step is important.
- what the audience should be looking for.

Organisation

Do not go over time.

Plan what you will show.

Prepare the demonstration materials (particularly the hardware or simulation) in advance.

Check technical capabilities and demo space in advance (e.g. projector compatibility).

Practice the demo.

You are encouraged to attend each other's demos.

Submission policy

- For the report, code and video, only electronic submissions through Ninova will be accepted.
- Late submissions or those submitted otherwise than according to instructions will not be accepted.
- Every member of the group should submit, at a date specified on Ninova prior to the demo:
  - As a **PDF file**:
    - The project report (in English).
  - As a **ZIP file**:
    - Code, libraries and instructions enough to get your programs running.
- Ensure you have a time scheduled at which to present your demo.
- Attend the demo with all your team-mates.
- Optionally, submit:
  - As a **youtube link in the report PDF**:
    - A video demo.
- Academic dishonesty, including cheating, plagiarism, and direct copying, is unacceptable.
  [remember to always quote borrowed text and cite borrowed text and ideas]
- In your code, clearly mark code that has been added by you (when most of the code in the file being submitted is template or generic code) or that has been added from other sources (when most of the code in the file being submitted has been written by you). E.g.
  - In a file containing mostly borrowed code:
    - `//*** BELOW CODE ADDED BY TEAM WINWIN 2018... 456 PROJECT`
  - In a file containing mostly your code:
    - `//*** BELOW CODE TAKEN FROM http://stackoverflow.com/XYZ`