



Norwegian University of
Science and Technology



Physical Computing Workshop: Day 4

Mini hackathon and the real world

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19 October 2018

Learning Outcomes



- Be capable of synthesizing and being critical on self-reflective practice.
- Develop peer critique practices.
- Be able to express a concept from ideation to prototyping.
- Get a sense on how to combine and build on previous code.
- Explore how to design a custom-made musical instrument based on performance, engineering and originality/creativity.
- Learn how to present a custom-made musical instrument.
- Demonstrate a custom-made musical instrument in a performance setting.
- Reflect on the custom-made musical instrument and performance using a blogging style.

Preparation: Reading



- Read the three daily blog posts written by your group during the physical computing workshop and be ready to present it in 10 minutes.

Preparation: What to Bring to Class?



- All the required items at hand to develop the final prototype.

Preparation: What We Do Provide?



- We can provide any of the items used during the workshop under request.

Outline



- Block I: Reflective recap
- Block II: Mini Hackathon
- Block III: Rehearsal and final performance

Reflective recap: 9:15–9:45



Each group is asked to summarize the week through the three blog posts during 10 min (a countdown timer will be used).

- 9:15–9:25 Group A
- 9:25–9:35 Group B
- 9:35–9:45 Group C

Conceptualization: 9:45–11:15



The class should split into teams and define the concept of their prototype (the concept should shape the technology and not the other way around!). Some idea generation techniques include brainstorming, mindmapping, storyboarding, and so on. Here you can find some idea generation techniques: <https://www.cleverism.com/18-best-idea-generation-techniques/>

- Trondheim: Due to the Open Day, two groups can stay in the portal and the third group can go to the 16-channel room.

Presentations of the prototype concepts: 11:15–12:00



Each group is asked to present their prototype idea during 10 min + 5 min more for Q&A (a countdown timer will be used).

- 11:15–11:30 Group B
- 11:30–11:45 Group C
- 11:45–12:00 Group A

Mini-hackathon & rehearsal: 12:00–15:00



Each group has 3 hours to develop their idea and rehearse how they are going to pitch it.

- Trondheim: Due to the Open Day, two groups can stay in the portal and the third group can go to the 16-channel room.
- All: Due to the Open Day in Trondheim, groups of students will come and enquire about what you are doing / hacking 13:00–14:00. This can be a good exercise to get feedback on the prototype.

Some tips & tricks on how to pitch a technology idea:

- 18 Pitching Essentials: How to Pitch an Idea to Investors (and Early Customers):
<https://www.ryrob.com/how-to-pitch/>

Final performance: 15:00–16:00

Each group is asked to present their prototype idea during 15 min, where they should pitch their idea and perform with the instrument (a countdown timer will be used). We will have a special guest: one of the three jury members of the mini-hackathon will be present during the oral presentations. The other two jury members will read the blog post and listen to the audio recording of the performance to assess each music hack.

- 15:00–15:15 Group C
- 15:15–15:30 Group A
- 15:30–15:45 Group B
- 15:45–15:55 Free improvisation with all the three groups
- 15:55–16:00 Closing

Post-activities



- Fill in the following questionnaire after the workshop ends (ideally before Monday, October 22, 2018, at 14:00):
<https://goo.gl/tUn8LJ>
- The final blog post about the music hack should be published by Monday, October 22, 2018, at 14:00. In the blog post, make sure to combine text with media to communicate the concept of your music hack, from ideation to prototype. The blog post will be sent together with the audio recording of the performance to the two jury members who are not able to come presentially to the mini-hackathon.
- The final grade of the workshop will be independent of the results of the mini-hackathon. The criteria of the workshop evaluation is explained in “pcw-intro.pdf”.

Jury members



- We have the privilege to have three jury members for this mini-hackathon:
 - **Tone Åse**, Associate Professor and Singer working with voice, improvisation and live electronics (Department of Music, NTNU, Norway): <https://www.ntnu.no/ansatte/tone.ase>
 - **Charles Martin**, Postdoctoral Fellow specialising in music technology and machine learning (Department of Informatics, UiO, Norway): <https://www.mn.uio.no/ifi/english/people/aca/charlepm/index.html>
 - **Gerard Roma**, Postdoctoral Fellow specialising in real-time computer music systems and sound analysis and retrieval (Department of Music, University of Huddersfield, Norway): <http://www.flucoma.org/>

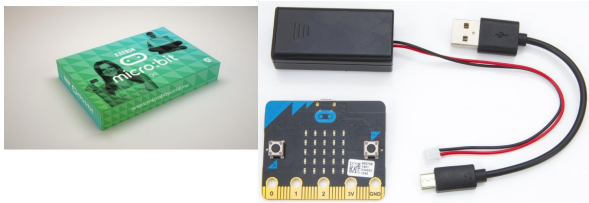
Criteria of evaluation (jury)



The criteria of evaluation that the jury members will look at are the following:

- Originality / Creativity
- Design / Engineering
- Performance / Musicality

Prize



The best music hack will be awarded with...

— A **BBC micro:bit Go!** for each team member!:

<https://microbit.org/>

- Let's make some noise! It's the BBC micro:bit MusicFest:
<https://www.microbit.co.uk/musicfest>
- Music — BBC micro:bit MicroPython 0.5.0 documentation:
<https://microbit-micropython.readthedocs.io/en/latest/tutorials/music.html>

Happy Hacking!



Image source: <https://www.indiatoday.in>