

# Process plan

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## *Project 4: The "Build-a-Robot-and-play" game*

### **Current thoughts/plan**

Our main idea is to make a game that is tailored for, and designed specifically to be played at an exhibition. Since the project will be presented at an exhibition we thought this would be a good suitable goal.

To do this we must know what this implies exactly. Currently we only have some basic ideas. First and foremost we would like people to be able to come and go as they please. Anyone should be able to join the game at any given time, and later leave the game when they want to. To allow this we cannot have "rounds", that is we cannot have the game idle and waiting to start until the right amount of people join, or for any other reason. Instead the game should be running constantly.

There are also some issues that need to be considered. To mention some that we have noted so far, exhibitions are usually crowded and filled with commotion, there are many different booths and the environment is very noisy and there are plenty of distractions. This means that we have to be careful about how we use sound. It might also be hard to get people's attention, selling the game quickly to passersby is probably good. Another constraint is that many visitors at the mall, where the exhibition will be held, also carry shopping bags or suitcases as they are traveling to or from work.

A possibility is also that there is some connection between different players in time. Which means that players can see what others before them have done, and also make them realize that the actions they do now will affect players later on. This would support the feeling that even if your own play session only takes place for a short period of time and is quite quick, it could still be meaningful in the future.

Based on these thoughts the current plan is to make a game where the player builds a robot of some kind, and then has to race with it through some type of obstacle course. This supports our main goal in the following ways.

Robots made earlier can be used by others later on, which would be the connection between players in time. A player can choose just to make a robot, and then if he wants to also run it through a few obstacle courses or he could just pick another robot already made by someone else and just dive straight into one of the different levels. This allows people to come and go as they want at least to some degree.

This is the current idea for the game, but since our main goal is just to make game for an exhibition the game concept might change drastically during the course of the project. We did not set out to specifically make a game about building robots or a platform game. It is possible that we keep many of our ideas that we currently have and tweak aspects of the game to adjust it to work well for an exhibition, or we might end up doing drastic changes to the whole game.

This year's theme, lightness, has not yet played a significant part of our project but the plan is to incorporate it into the game design or gameplay somehow. Players could for example benefit from making light robots since it could make them faster. Another example could be that players can use their smart-phones as controllers. This would make the interface between the players and the game light since you don't need extra hardware. Also, there is a possibility to use the theme to build a lightweight story around the gameplay.

## Rough schedule

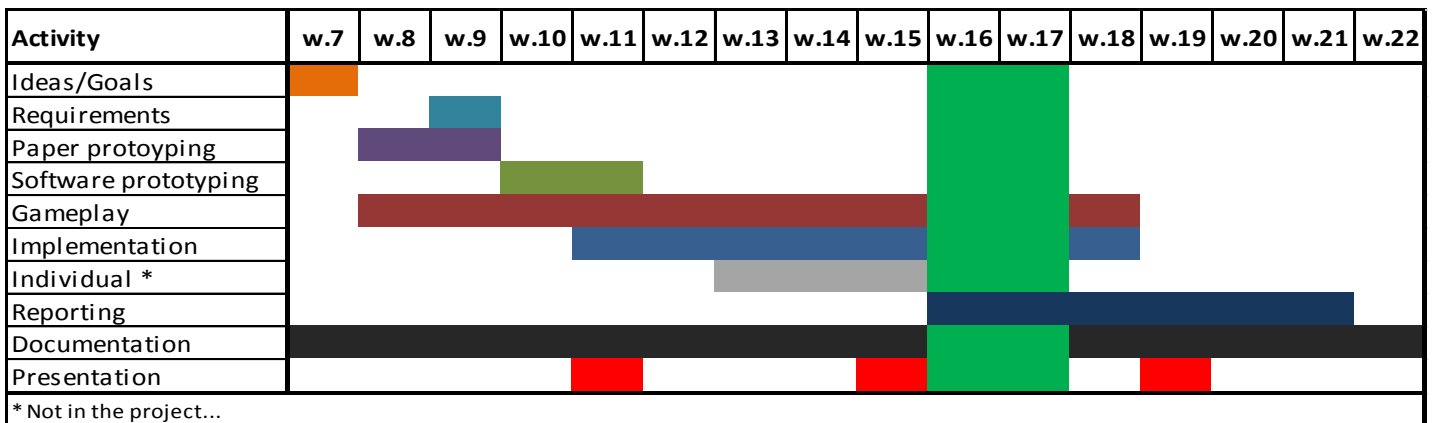
Currently the exact plan for the project is quite diffuse, but a rough week-by-week plan is established and planned to be a kind of guideline for the process to prevent being stuck without knowing what to do.

The different activities or process/project parts have been identified as the following:

- **Ideas/Goals (already done)** - involves coming up with a core concept and how this fits the different aspects of the project (time frame, theme, etc.), and also deciding own goals that the individuals in the group wants to achieve
- **Requirements** - involves looking at the goals and set up testable statements for the final product to fulfill
- **Paper prototyping** - involves making simple paper prototypes of the building and playing phase of the intended game
- **Software prototyping** - involves making testable prototypes of the game in its correct environment
- **Gameplay** - involves testing the prototypes and to think about the rules and other factors of the game process
- **Implementation** - involves actually creating the necessary content (code, graphics, sound, etc.) to make the game work
- **Individual (not included in project)** - involves writing the individual essay for the course (this would require some time taken from the project process)
- **Reporting** - involves structuring and writing the content of the group report
- **Documentation/Blogging (always included)** - involves documenting any meeting or piece of code throughout the process as well as continuously keeping the blog updated
- **Presentation/Exhibition** - involves preparing the presentations as well as both the performance and the material aspects for the exhibition

A preliminary schedule week-by-week for these activities would look like this:

- w.7: Idea/Goals, (platform)
- w.8: Paper prototyping, playtesting
- w.9: Paper prototyping, playtesting, requirements
- w.10: Software prototyping, playtesting/gameplay
- w.11: Software prototyping, playtesting/gameplay, implementation, presentation1
- w.12: Gameplay, implementation
- w.13: Gameplay, implementation, (individual)
- w.14: Gameplay, implementation, (individual)
- w.15: Gameplay, implementation, presentation2, (individual)
- w.16: Easter break, reporting
- w.17: Re-exam week, reporting
- w.18: Gameplay, implementation, reporting
- w.19: Exhibition, reporting
- w.20: Reporting
- w.21: Reporting
- w.22: Finishing



*Gantt chart over the project process.* The green area represents the Easter break and the re-exam week where no time consuming activities in group are planned.

## Milestones

**Paper prototype of editor/game** - The paper prototype of the editor should explore the interaction of the robot building process. It will try to answer the questions of how to design for accessibility and how to design for the chosen hardware interface - that is, hopefully for a touch screen in this case. It will hopefully generate answers to how the construction of the robot will take place, with regard to the hardware and accessibility issues.

The paper prototype for the game part (where the player traverses a level) will aim to find out if our thoughts about the core gameplay seem feasible. The prototype should try to answer what, with different configurations, a robot can handle and what obstacles might be appropriate for it.

**Software prototype of editor/game** - The software prototypes will serve to both test out the ideas prototyped earlier in their proper medium and at the same time make the team comfortable with the chosen technical platform.

**Functional game** - Combining the experiences and answers gained in the prototyping process, the team will build a version of the game which implements the core features. It should include a functional editor that produces a robot for the game part. This robot should be able to traverse a level in the game part and reach a “winning” or “finished” state.

**Half-effort report** - The vision is to have a version of the report ready relatively early. This version will not be complete, but the efforts to write parts of it early on should alleviate some pressure in the latter stages of the project.

**Finished game** - The finished game includes an editor which can be used to create different kinds of robots, which in turn can be used in platformer gameplay in the gaming part of the game. The robot should be able to traverse levels using different means of transportation and be able to use different tools to aid it during the traversal.

**Exhibit** - Exhibition is held where the project is paraded. (Details on the presentation are yet to be decided).

**Full-effort report** - The report is delivered in its complete form.

## Risk analysis

To prevent unexpected problems during the project process, a risk analysis has been made to set up backup plans in case of these problems occurring:

Problem	Probability	Significance	Alternative actions
Can not use our preferred game controller	Medium	Low	Use keyboard and mouse as controller.
Can not use our preferred screen setup	Medium	Medium	Redo the game to work with normal computer screen with one player per computer.
Our chosen game engine is not suitable	Low	High	Go back to drawing board and look up Unreal Engine, XNA and possibly other options.
Running out of development time	Medium	Medium	Remove some planned features and try to make something playable as soon as possible.
Unable to implement planned feature	High	Low	Search for possible work-arounds and/or replace that feature with some other less prioritized feature.
Team member quits	Low	Medium	Divide that member's work between remaining group members and cut some planned features if necessary.
Program often crashes	Medium	Medium	Try to investigate the reason behind the crash and stop developing new functionality until it is fixed.
Hard disk drive crash	Low	Low	Other than prematurely setting up SVN or similar, get a new HDD or use/buy another computer to work with.
SVN or similar stops working or can not be used	Low	Medium	Use dropbox to share files

## Possible methods

In our process, which we intend to keep very iterative, we aim to use a few different methods to aid our development. As can be seen in the schedule above we intend to work heavily with prototyping in the initial stages of the project. We intend to use this method throughout the project and do paper prototyping for example for game levels. We also aim to use play testing as frequent as we can in order to make sure that the game live up to our goals of accessibility and fun, etc. There are other methods that we might use as well; brainstorming for example is one that has already been used for ideation.