

JUSTIFICATION

BOOK

GROUP 19



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CHAIN REACTION

Step 1:

With the help of team 18, we lift up our mine cart with a pulley to the top so our chain reaction can start.

Step 2:

The mine cart arrives at the top of our chain reaction/incredible machine. Here the mine cart touches a marble that continues the chain reaction.

Step 3:

The marble falls into a plate of nails here, and will continue its way in the chain reaction. As you can see at the images there is a plastic plate for this so that the marble can not fall out of the track.

Step 4:

When the marble has followed its way down between the nails, it ends up in a kind of funnel made of wood. After that the marble falls into a 'windmill' which will turn with the weight of the marble and will help the marble further in the chain reaction. With the windmill turning it will hit a switch connected to the Arduino so the game will start.

Step 5:

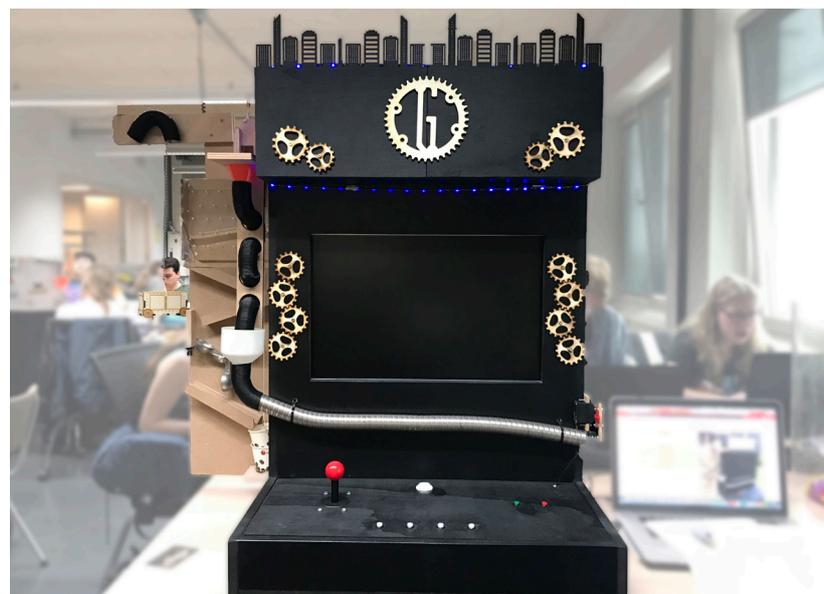
If the marble rolls on, it falls into a cup. Due to the marble's weight, the cup will drop into another cup. As a result, the rope attached to the cup is tightened and it will open a flap to allow another marble to continue on its way. (We touch about everything on the chain reaction. we even attached extra wood to the sides so that the marble would end up in the cup with certainty.)

Step 6:

When the valve is pulled up and the next marble continues its way, it will immediately end up in a funnel that ends in a tube full of bends and where the marble can continue its way.

Step 7:

When through the different tubes and different obstacles his way in the chain reaction has continued he will be stopped by a gear. This ensures that the game can be started by pressing the white button. When the game is over, the servo motor will start running and this will clear the way so that the marble can continue on to team 20.



INCREDIBLE MACHINE

A link to a video of the incredible machine/chain reaction:

https://drive.google.com/file/d/1mZLfNCEo7o3p9fzgNqzObr37M_QEufUG/view?usp=sharing

<https://drive.google.com/file/d/17ffsMoSQpwmHxEtRGXSQ4F92HuhmBVYH/view?usp=sharing>



MERCHANDISE

The merchandise we made for our incredible machine and MakerFestival Twente. We made an item visual and that is our mine cart with some candy what is looking like charcoal. All the stuff is in our special bag named: GEAR goodiebag



MERCHANDISE



**GIRLS
COLLECTON**



MERCHANDISE



**BOYS
COLLECTON**



PLAY TEST RESULTS

Most important/frequent feedback

- More items / more variation
 - For some, it was a bit unclear where they could place objects. They suggested guidelines
 - An undo button was requested because once you place an object you can't remove it.
 - An introduction or intro to the game would be nice instead of the game immediately.
 - The simple lines in the prototype should be improved visually.
 - A few suggested 'ramps' as an object.
- Improve the controls.

Implementation

We added two more items to the game: a wall and an upwards spring. In addition to the sideways spring and the bridge-block. A total of four items.

We didn't add 'guidelines'. Otherwise, it would really become too easy, even for kids. The idea is that they have to figure that puzzle out on their own.

An idea of removing already placed objects was in progress: The player would have had about 4-5 dynamite sticks. They would be able to drag those over a faulty placed object and destroy it. But with an eye on the time and the uncertainty of how many bugs that could've caused; we refrained from putting it in the game.

An intro as well as an outro for when the player finished the game was made. The screen would show the skyline of Gear-City without any lights and slide down to the underground caverns. Then the doors to the mine would open and the game would be visible. After the game is finished, it would slide up from the caverns and show the skyline again. Only this time the lights are on. You powered up the city.

The 'simple lines' were obviously replaced by drawn tiles of rails.

We did not add ramps. Instead, we added a conveyor belt in certain places that would speed up the car. So to keep it from going too fast and falling off, the player can place walls to stop it.

Game rules

Use objects to make a path for the minecart
The objects are limited, use them wisely!
Take your time, think things through.
Did you fail to clear a path? click on retry and start over



WEBSITE

You can find the website online at:

www.demidegraas.com/gear

We also made a special animation for the begin screen of the website, you can see this animation if you click on the url above. It fits our story with the dark city, you have to light the city up by finishing the game.



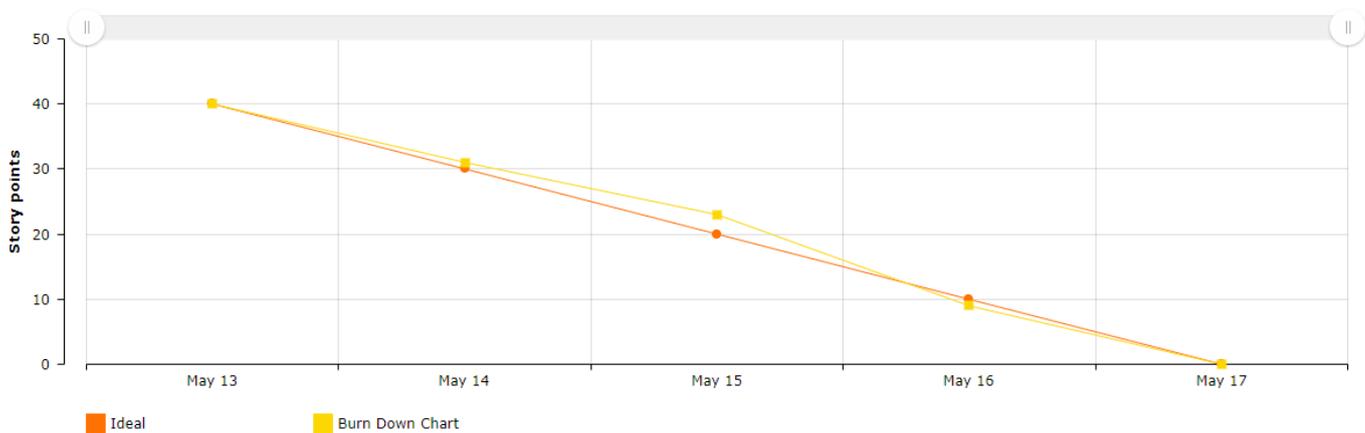
TRELLO / GIT

You can find the Trello online at:
<https://trello.com/b/AWYHeuLA/project-final-approach>

Burndown Chart Group 19



Burndown chart based on cost calculation



Burndown chart based on cost Trello

The image shows two side-by-side screenshots. The left screenshot is a Trello board titled 'Project Final Approach' with columns for 'User Stories', 'Product Backlog', 'Sprint backlog', and 'Progress'. The right screenshot is a GIT / SourceTree interface showing a list of files and folders, including 'Assets', 'Scripts', and 'SourceTree', along with commit history and file details.

Our Trello

Our GIT / SourceTree

INDIVIDUAL WORK

Jelle:

- Game code
- Asset list
- Arduino code
- Arduino circuitry
- GIT setup

Brandon (scrummaster):

- Synopsis
- trello/scrum
- audio moodboard
- Graphic design stylesheet
- design for the lasercut stuff
- Making the box
- Game rules
- logo design + names

Jimmy:

- HUD
- Moodboard
- Graphic design stylesheet
- Game over screen (opening door, game over screen)
- Level layout
- Art for the game
- Infographic

Judith:

- Art for the game
- Object/ character design
- Animation for robot/spring/explosion
- storyboard
- concept sketches

Kaylee:

- intro / outro image
- Art for the game (tiles, rail-tracks, furnace, conveyer belt object) + background
- Clock and gear image for the top
- Invision prototype
- Cost calculation

Demi:

- one paper
- presentations
- Making the box
- Design the box (how to make it etc.)
- Website
- Chain reaction
- Animation for the website
- Soldering
- Justification book



TEAM WORK

Brandon:

By demi:

A really kind and good team leader, keeps the team in track. Always nice input and good feedback to the teammates.

Maybe focus a little bit more on the high priority tasks instead of the 'nice' tasks.

Tip: keep on going, you're a good team leader, but you can be a little bit harder to your teammates sometimes :)

By Jelle:

Definitely a good team leader and hard worker

If nobody wants to do a certain something it doesn't mean you have to do it, so also try to give other people work.

Tip: Kind of as I said, try to give other people some more work as well when they don't take it themselves.

By kaylee:

Was very great at involving everyone into the process.

Great at keeping everything on schedule. Made sure we knew what we had to do and what was still a thing that had to be done.

Tip: Sometimes a bit 'too nice'. You don't need to take on so many of the tasks yourself. It will end up stressing you out more.

By Judith:

Is a great team leader, always knew what to do next and how to manage everything, very organized and always nice

Had a lot of visions and good ideas, though the priorities were sometimes a bit unclear

Tip: Like the others already mentioned, try to split the work a bit more, so you don't get a burnout

By Jimmy:

Most organized group leader I have ever had. He is not just the main contact point of the group but also really leads the group through the project.

Even Though he is a designer he is quite the talented artist too and has some great ideas.

Tip: Try not to take too much on your plate, it might create too much stress to handle.

Tip: try to keep the flow of ideas grounded for the amount of time we have.



TEAM WORK

Demi:

By Brandon:

Hard worker and really nice to work together with. Always gives her opinion and constructive feedback.

Focus more on your own tasks and work on one thing at the time instead of working on multiple ones at the same time.

tip: Keep up the good work, ask for help when you don't have enough time or if you're busy!

By Jelle:

You have done a lot and worked hard, and came up with a lot of ideas.

See if you can sometimes take a little minute of your own work for some quality assurance on other people's work.

Tip: (Kind of have none)

By kaylee:

Shows a feeling of great responsibility for her tasks.

When she comes up with ideas, she looks if it is possible to work out first and then asks if the group is behind the idea.

A bit of a perfectionist. But she knows that. And it has the possibility of being beneficial, but also can get in the way of finishing some things and can thus cause unneeded frustration.

Tip: like I said, the perfectionism works for a great looking product, but try to sometimes let go of it when you notice it only causes stress.

By Judith:

A very hard worker, always ready to help others

Tip:(don't have one)

By Jimmy;

Literally the hardest working person I have ever met.

Cares about the project a lot and motivates the group into enjoying the work.

Tip: Try not to overwork yourself. A burnout is not a fun experience.



TEAM WORK

Jelle:

By Demi:

You're a really really good engineer and can almost make all our 'wishes' come true! You know what you're doing and are confident about that which is nice.

Sometimes it's fine to say no, due time problems or just because it's difficult. I understand you won't to make everything and make your teammates happy. But take some rests, and some breaks :P.

Tip: Well as I already said, I don't have that much tips, take some time for yourself sometimes.

By Brandon:

Your engineering skills are amazing, you're a good listener and when something doesn't work out, you instantly ask someone to help out or go to a teacher for help.

Make sure to plan stuff correctly for yourself, watch out that you don't get distracted too much by other people. If you don't have enough time, make sure to tell it to the group.

Tip: Keep a list next to you so can see which tasks needs to be done and focus on the most important ones first. keep up the good work!

By kaylee:

You definitely have great skills in engineering.

It was nice that you could immediately tell us what you could do and what you couldn't make possible. It showed us the limits and gave us an indication in what direction our ideas should go.

Tip: I know that at some point a misunderstanding became clear: you had focused on a downwards scroller while the team was still thinking of a side-scroller. We all resolved it together quickly luckily.

But maybe in the future make sure for yourself that the team knows what you're working on and that they actually understand it to avoid it.

By Judith:

A very good engineer

Worked always well and hard, and was able to overcome any problems with the engine

Tip: (I don't have one)

By Jimmy

Provides what working together with an engineer should be, loads of interaction and discussions between the three branches of the creative process.

A very talented engineer.

Tip: When the workload becomes too much tell the rest so we can tone down a bit.

Tip: Take a few more breaks every now and then.



TEAM WORK

Jimmy:

By Demi:

You're a good artist, you can really draw and make beautiful art. The way you are thinking is different than others and gives a nice view on things. Also giving good and helpful feedback.

You have to believe more in yourself, you can really make it, be a bit more confident!

Tip: When you need help, ask for it.

Tip: Maybe discuss a little more about your own work(progress), don't wait till its ready and maybe have to make difficult changes.

By Brandon:

You're a good and fast artist, I really like how you designed the HUD out of nothing and it really helped our game.

Watch out that you don't get distracted too much with videogames, if there's nothing to do, always ask around if someone needs help or if there's a task you can do.

Tip: Look around, see what other people are doing and check trello for more tasks.

There's always something to do.

By Jelle:

Next to finishing your art really quickly, you also came up with some art which could just add to the little details, which in the end looked really good.

Sometimes a little less gaming when there are tasks left to do

Tip: you can sometimes ask if there are any tasks left to attend to

By Kaylee:

The art you make looks great and you also manage to make it fast on top of that.

You ask for enough second opinions on parts you're not sure about and do take that advice into account.

Tip: I know motivation can be a fleeting thing sometimes, but when it comes to school try not to give into that.

By Judith:

A good artist and very fast as well

Tip: Like others said already, when you got nothing else to do anymore, maybe look for other tasks



TEAM WORK

Judith:

By Demi:

A great artist with a good point of view and very nice draw and animation skills! (i'm jealous). Gives good feedback to others in the team and really know what you want and clear/good ideas.

Tip: If you're done just ask for some new tasks so you may can help people. Also maybe discuss a little bit more sometimes about the stuff what was going on in the project.

By Brandon:

You already started with some amazing sketches and in the end all of your art was really amazing, same with your animations.

Make sure to give us a heads up with what you're doing right now and see if you can help out somewhere else.

Tip: Look around and ask people if you can help them.

By Jelle:

Your art is amazing whether is was for this project or for previous, it's amazing.

Try to add more to ideas of the project and try to speak up when roles and tasks are being divided.

tip: try to finish your own art a little bit faster so you can sometimes help on other things as well

By kaylee:

Animate was annoying you, I know, but you figured out a good way to resolve that and work it out in photoshop instead.

The art and sketches you came with were great and helped visualise the style of the game early on.

Tip: you said I was acting a bit as a desinger when I joined in the brainstorming and taking on tasks. And I know it's not a natural thing for you to speak up in such situations, but then start with speaking out about what you know you can do. Offer that you can animate some stuff and that you're open to ideas as to what you could animate. Or when people mention something you think you could do; speak up about it ;3

By Jimmy:

Very talented artist and animator.

The delivered work is exactly what we expected out of it and really added to the visuals of the project.

Tip: Interact more with the group. Sometimes we had no clue what you were currently doing and what your opinions were.



TEAM WORK

Kaylee:

By Demi:

Also a really good artist with great drawing skills, always nice ideas and input on almost everything. Everything is consistent in style and really fits our ideas for the project and how it has to look like. You also want to help people all over the place during the 2 weeks of projects, which is really helpful and nice for all of us.

Tip: If there is not that much work left maybe ask for some other tasks, I don't really know a good tip right now, but this would be extra helpful.

By Brandon:

You made some nice backgrounds and always asked for feedback and implemented them right away. When someone asks you "can you do this" you immediately say yes (if you have time for it). Sometimes just look around and see what other people are doing and look at trello for tasks.

tip: If there's no more work left, talk to people and see what they are doing and help them out if you can.

By Jelle:

You think all the art through and you ask how I want in delivered (alignment, format and stuff) See if you can help out on other tasks sometimes as well, when your own stuff is finished (only when there is stuff left to do of course).

Tip: When you are finished ask in the group if anybody has a task left which an artist can also attend to

By Judith:

You're a great artist

Like I mentioned, you were very eager and helpful and tried to offer your help, as long as you knew you were capable of doing that task.

Sometimes I had the feeling, that you took up too much work for yourself, but you managed to always finish it in time

Tip:(I have none)

By Jimmy:

Amazing artist, Wish I could learn some of your drawing techniques.

Fast drawer. When asked to make some last minute art it is done before you know it.

Tip: Be more on the lookout for new tasks when you are done with a previous one.



TEAM WORK

Overall feedback:

By Demi:

I loved working with this team, six super motivated students who are willing to receive the best possible grade. We had a great engineer, 3 amazing artist and Brandon (the other designer) was also great! Everyone had their own tasks and they kept to this. We worked as a team, cummunicated as a team and it were 2 nice weeks.

By Brandon:

It was really nice to work together with this team. Everyone knew what he or she can and wanted to do and the tasks were divided like that. Even though things were divided, we all worked together as a group and always asked for feedback and stayed in touch through Discord.

I think if we had more time, we would've made an even bigger game!

By Jelle:

The team was really great to work with, since everyone had their own job and they kept to it. The communication was also good, since we discussed what someone needed and what still could be done. The quality insurance went also well since we always checked each other's works and gave feedback on it.

By kaylee:

I loved working with this team. We all seemed excited about the idea we came up with, despite some confusion about the project initially. But most problems that arose were taken care of quickly because of the joined effort. The game turned out really well as a whole and I'm actually proud of it.

I would like to work with these people again.

By Judith:

It was a great team to work with. Everyone was nice and knew what they could and couldn't do right away, which helped a lot, clarifying and splitting the work from the beginning. At the beginning there were a few hiccups, with some people not entirely knowing, what to do, but that was more the fault of the project being badly communicated to us, rather than bad communication amongst the team. As soon as we all knew what to do, it was a nice working atmosphere and I cannot complain. I sometimes felt a weird, when people would suddenly speak in dutch, but they always ended up translating important information to me, so I wouldn't miss anything. All in all, I would like working with this team again.

By Jimmy:

Best team I have ever worked with. The interaction was great and we all knew what the rest was working on. If there was a issue somewhere it was dealt with quickly and professionally. The start was a bit rough but at the end of the first and the entirety of the second week we worked like a train. Help to other group mates was plenty. Just ask and 2 or 3 people asked what they could do to help. Brandons leadership really motivated us to keep working at high tempo. The amount of work he and Demi were doing motivated me to work harder. Like mentioned before the interaction between the different branches was amazingly good, I worked with Jelle a lot to make the art in the game work like the artists had envisioned. To conclude, this group was for the the example of a near perfect production team and I hope to work with them on many more projects.

