Agenda for meeting on 12-5-2020

Project: 1-2 Crazy Putting
Date: 12/5/2020
Group number: 4
Group members: René Steeman, Aaron Schapira, Ivan Poliakov, Jean Janssen, Matthijs Kusters, Haoran Luan
Chair: Aaron
Secretary: Matthijs

1. Opening at 12:00
2. Minutes last meeting
   a. Remarks from group: none
   b. Remarks from tutor (1 minute)

3. State of the project (5 minutes)
   a. Completed tasks/milestones: Basic bot, improved load/save system connection to physics (setting the loaded values), playable game, connection UI and backend, two Verlet solvers, finished UI system, main menu.
   b. In progress: Experiments, presentation, code clean-up, shoot UI and reset ball UI (reset ball is non-functional)

4. Planning (5 minutes)
   a. Things to finish before the next meeting: finish project and pass phase 2
   b. In progress before next meeting: -
   c. Twice a week, once on Saturday at 10:00 and on Tuesday at 10:00. If needed we'll schedule extra meetings 'on-demand'.
   d. Planning of the complete phase

Description	Who?	March 23	March 30	April 6	April 13	April 20	April 27	May 4	May 11-17	May 18/19	Extended description
MAJOR BUILDS / MILESTONES											
Basic working game											Working 3D engine, basic 2D UI options (text and images), 3D physics, the ability to shoot the ball and score (possibly with UI, but not necessarily), basic course designer (you can add and remove trees)
Editor build											Fully functional course editor, including adding or removing both trees and sand. It also has the ability to save and load a terrain.
Basic bot											A basic version of the bot that can already win the game with a simple course
Improved physics engine											The new physics solvers are implemented and working
Full-fledged bot											The final both for this phase is working as intended
PROJECT STRUCTURE AND PHASE 1 FIXES											
Improve the graphics engine structure	René										Make sure that the project structure is clear and flexible, focusing on the graphicsc engine's structure
Improve the physics engine structure	Ivan										Make sure that the project structure is clear and flexible, focusing on the physics engine's structure
Redo UI	Jean, Ivan										Create an improved version of the phase 1 UI in the new engine
Main menu	Ivan										Redo main menu
Shooting the ball	Jean										Redo shooting the ball UI
Resetting after hitting water (non-functional, that's for phase 3	Jean										Redo resetting after hitting the water UI
Editor											Create editor UI (loading and saving options as well as key bindings explained)
Have a playable game (for humans)	Ivan										Have a working game where you can at least shoot the ball and score
Redoing inputOutputModule	René and Ivan										Have to option to save and load the game information (start location, terrain info, etc)
GRAPHICS ENGINE											
Create new 2D engine basis	René										Add the option to add 2D elements to the UI
Create new 3D engine	René										Create a new 3D engine using lwjgl
Show a triangle											Be able to show a colored triangle in 2D
Add lighting											Add per pixel lighting and specular lighting
Camera system in 3D											Add a camera in 3D that can be moved around
Allow 3D shapes											Have the ability to create models in 3D by code
Import 3D models											Allow importing 3D objects from Blender
Basic terrain system (flat ground)											Create a system to deal with terrain rendering (specialized code, separate from other 3D objects)
Terrain with height											Add height to the terrain
Multiple textures for the terrain											Allow for multiple textures to be applied to the terrain (grass and sand)
Skybox											Add a skybox
Cursor to point on terrain											Convert a mouse click onto coordinates on the terrain
Spawn objects on clicked location											Add an object with the position being the point that was clicked on the terrain
Water system											Add water to the game with reflection, fresnel effect and 'movement'
Course designer basics (phase 3)	René										Enable the user to customize the terrain by adding sand and trees
Course designer finished, including saving/loading (phase 3)	René										Add a save and load option to the course designer
Expand 2D engine with buttons, slider, textfields and a file explor	Jean, Matthijs and René										Expand 2D engine with buttons, textfields and a file explorer
3D UI improvements (ball reset preview, shot direction indicator	René										Add 3D UI for resetting the ball and indicating in which direction you're shooting
Ball reset preview											Show where the ball would end up after resetting it when you hit the water
Shot direction indicator											Add a vector pointing to the shot direction from ball itself
Additional engine improvements (shadows, improved AA)	Haoran										Implement some additional and optional engine improvements
Physics											
Second order Verlet solver	Matthijs										Implement the second order Verlet solver for physics
Second Second order Verlet solver (velocity)	Matthijs										Implement a second second order Verlet solver, called velocity Verlet solver
Classical 4th order Runge Kutta solver	Matthijs										Implement the classical 4th order Runge kutta solver for physics
Bouncing against trees (phase 3 prep)	Matthijs										Add the physics for bouncing against trees, including hit detection
Consider flying balls (phase 3 prep)	Matthijs										Add the physics for flying balls and make sure the rest of the game still works when this is used
SOUND											
Music/sound effects	Haoran										Add music that plays while playing the game and add sound effects to actions like shooting and scoring
BOT											
Basic bot research	Aaron and Ivan										Figure out how a bot should work to meet the requirements for phase 2
Basic version of basic bot	Aaron and Ivan										Create a first version of the bot for phase 2 that can already meet the requirements
Hole in one if possible											If you can score in one shot, do so
Handle more than one shot to win											If you need multiple shots to score than the bot has to be able to do this
Improve heuristics											Improve heuristics to optimize the bot's behavior and performance
Finished basic bot	Aaron and Ivan										Improve the bot further and fix any problems that the bot may have
Research advanced bot (phase3)	Aaron and Ivan										Come up with an improved bot by doing research
Get started with advanced bot (phase3)	Aaron and Ivan										Start the implementation of this improved bot
Testing / experiments	Aaron and Ivan										
REPORT											
Start with report (mainly structure)	Jean, Matthijs and René										Prepare an outline for the report in LaTeX and learn LaTeX if needed
PRESENTATION											
Create the presentation	Everyone										
Planned duration											
Finished earlier than planned											
Critically behind on schedule											
Possible extension											
Disaster											

5. Any other business (2 minutes)
   a. From group: Haoran still doesn't respond.
   b. From tutor:
6. Chair/Secretary for the next meeting. Chair: René, secretary: Jean
7. Closing at 12:15