

Conclusion Chapter - Game Programming Lab 2009

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Dirty Derby

1. Final results

1.1. Game play

- Added a message if the player gains or loses points



Image 1: point messages

- Added a time and a points limit for the rounds
- Players can carry and switch between a whole set of weapons at the same time

1.2. Physics

- The desired realistic vehicle physics has been included

1.3. Graphics

- Added User Interface

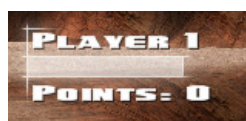


Image 2: user interface

- Improved car model and texture



Image 3: final car model

- Created a destroyed version of the car



Image 4: destroyed car

- Improved weapon item model and texture

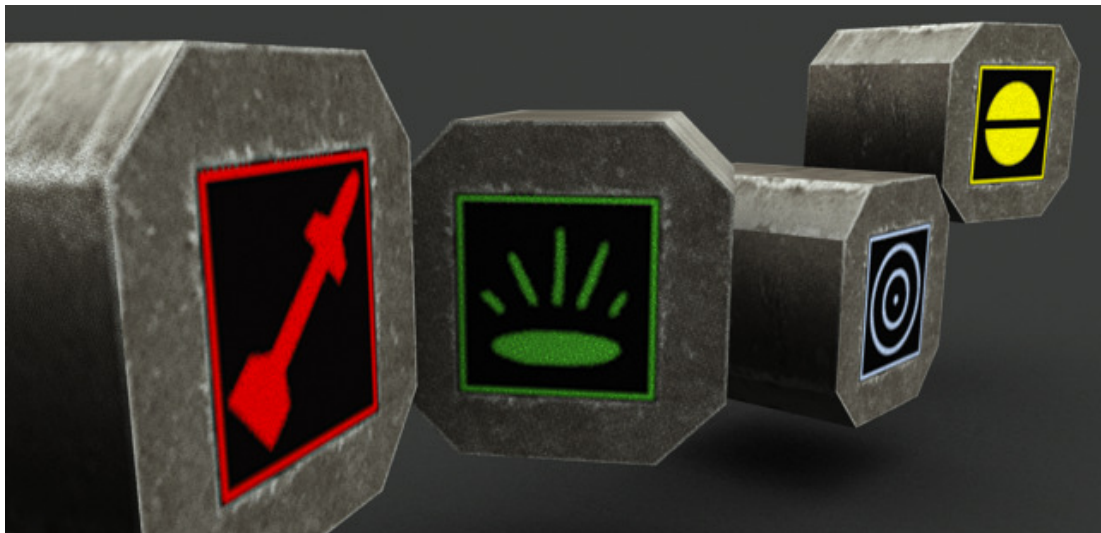
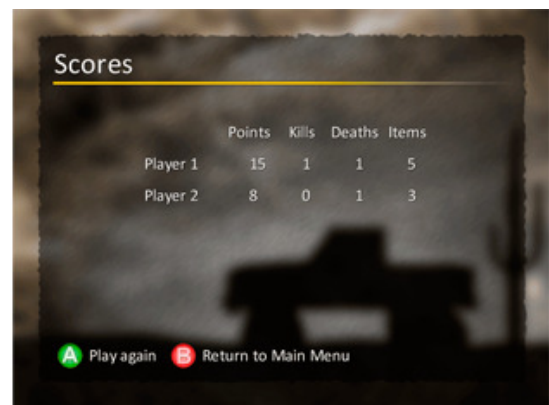
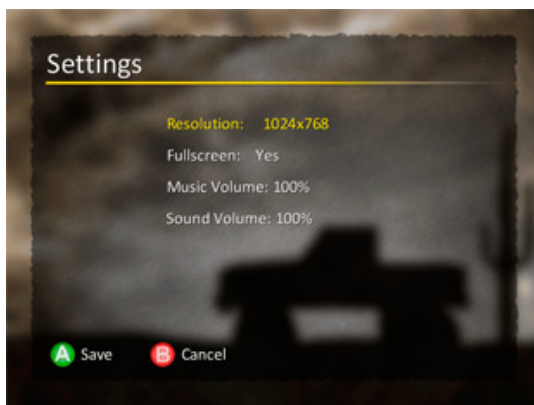
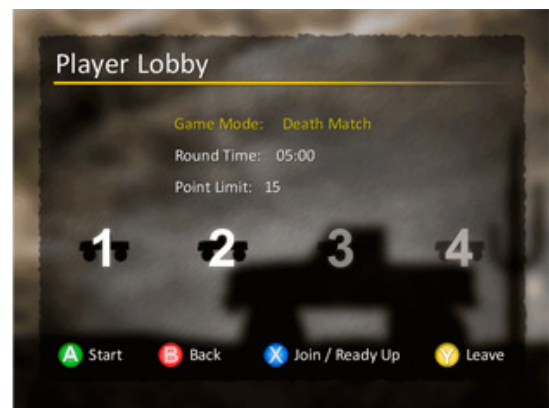


Image 5: ammunition boxes
(left to right: missiles, mines, force, seeker mine)

- Created menu graphics





- Added post processing effects



Image 6: (left) unprocessed, (right) bloom effect



Image 7: (left) blur effect, (right) unprocessed

- Added Skybox



Image 8: 6 texture images are mapped to the sky cube



Image 9: in game view of the skybox

1.3 Audio

- We implemented an audio player class that controls playing sound effects and background music.

2. Experience

- We realised a very ambitious design idea which required a lot of work on different topics (physics, modelling, level design, texturing, ...)
- The distribution of the work between the group participants was well organized. Unfortunately two of us don't live in Zurich, so we always had to pre-plan our meetings.

3. Conclusion

3.1. Personal Impressions

This was a very interesting lecture, both fun and challenging.

3.2. Debriefing Questions

What was the biggest technical difficulty during the project?

Graphics: Not really a technical, but the biggest difficulty was to create a plausible texture for the car. Especially find textures for parts with details, as the front with lights and radiator grill, which match the car type is really difficult.

Physics: Using a library for collision / rigid-body-behaviour. The BulletX and BEPUphysics both were very easily implemented at first and allowed a variety of complex simulations. But because of

incomplete / unhelpful documentation the tweaking of parameters, finding the right constraints and using them correctly proved to be almost (I believe) as hard, as implementing the real thing.

What would you do differently in your next game project?

Graphics: Nothing.

Physics: Begin with simple physics, build upon that – but importantly: implement by yourself.

What was your greatest success during the project?

Graphics: Creating a nice looking car model, that includes a destroyed version of it with some nice textures.

Physics: Finally getting the coefficients right... And at the same time realizing, that what was implemented before was all working as anticipated in the final result.

Are you happy with the final result of your project?

Graphics: Yes, but there could be more scenery objects.

Physics: Quite, but after all the effort it's a pity not having ones very own engine.

Do you consider the project a success?

Yes.

To what extend did you meet your project plan and milestones?

Graphics: Completed all five layers.

Physics: Completed the desirable target.

Game logic: Completed the desirable target.

Audio: Completed the desirable target and reached some goals of the high target.

Scenery and landscape: Completed the desirable target.

Performance on the XBox: Reached 40 Fps for two players.

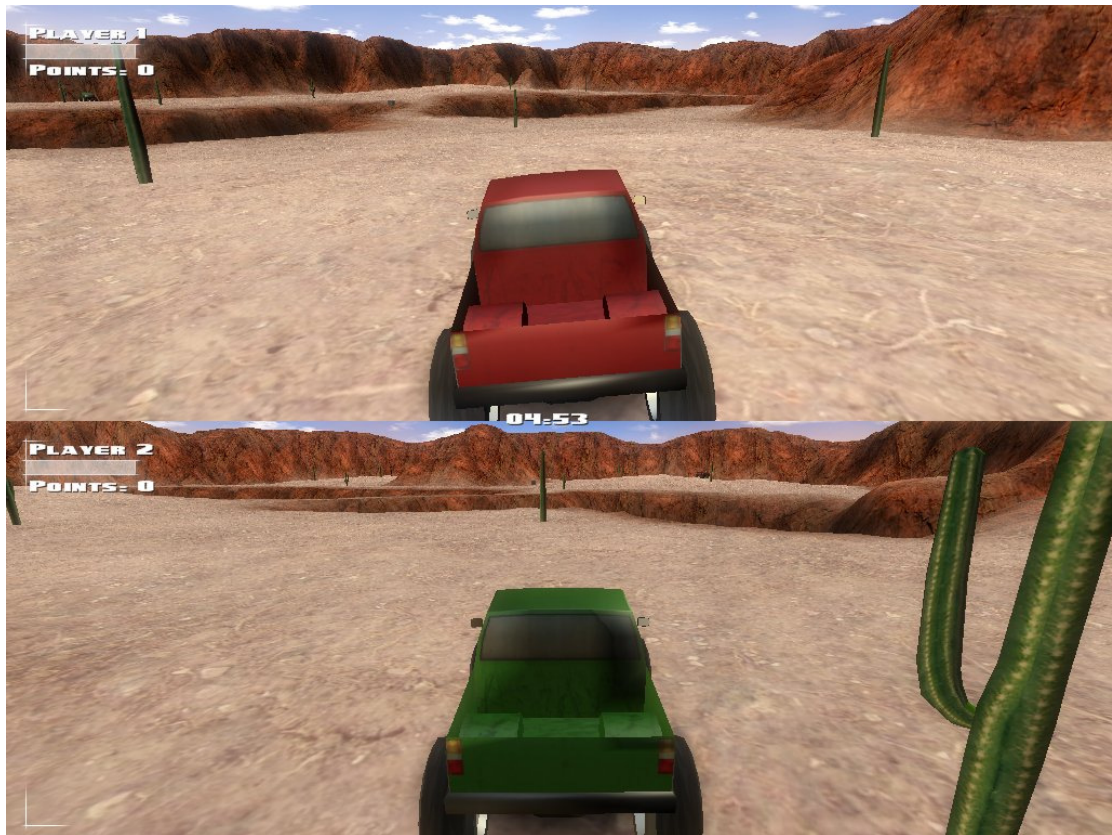
What improvements would you suggest for the course organization?

More real life examples for the lectures and may be collaboration with some design students or similar for the project.

Did you like the XNA framework?

Yes and no. The abstraction for the graphical devices is very helpful and quite powerful. But since there's so much need for optimisation in the end, besides good coding style anyway, having a garbage collector is a real drawback (since it's the culprit there is the .Net framework maybe we just didn't like the XNA to be written for .Net.)

4. Screenshots



5. Appendix [manual]

5.1. Death match

- Points limit : first player to reach the limit is declared the winner.
- Time limit (early end of match) : of course there's a ranking as well – and the shame...
- Pick up ammunition for your weaponry and destroy everyone!
- To get even more points, pick up those fancy looking white thingies called diamonds.

5.2. Controls

- Driving (Acceleration, braking and steering) : left thumb stick
- Camera : right thumb stick
- Fire current weapon : right trigger
- Select next weapon : right shoulder
- Suicide : left shoulder
- Pause : start button

5.3. Diamonds and Weaponry

- Diamonds : the awesome award of collecting these shiny objects is three points.
- Mines : once placed they mask themselves as ammunition boxes and they do heavy damage.
- Missiles : somewhat guided, simply head for your enemy, fire and watch him go away.
- Force (aka bouncer) : activates a force field that keeps your enemies away, quite useful.
- Seeker mines : these little buggers find their own targets, once they got too close.

5.4. A note on video resolution

- Our game supports 4:3, widescreen and most resolutions from 800x600 to 1680x1050.