
DADIU 2009, May



The Creation of Puzzletive: Garden

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June 10, 2009

During the month of May, 2009, the Danish Institute for Digital Interactive Entertainment gathered students from a multitude of educations around Denmark, who gathered in Copenhagen and Aalborg to create games in production teams of around 15 people. The author took part in the production which resulted in the jigsaw puzzle game named Puzzletive: Garden where he functioned as one of four game programmers.

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1 Introduction

During the month of May, 2009, I took part in my first DADIU production, as a member of Team 3. The team workspace was the Linux Lab¹ at the IT University² in Copenhagen. The production ran from the 27th of April to the 27th of May, and during this month Team 3 created the game Puzzletive: Garden.

¹The Linux Lab website: <http://www.linuxlab.dk/>

²The ITU Website: <http://www.itu.dk/>

The following report is separated into two primary sections: *Critique*, in the next section, containing critique of the production and the organisation behind it, and *The Product*, in section 3 on page 4, which contains a description of the end product as well as highlights from the code.

2 Critique

The following is a short discussion on certain parts of the production - both of positive and negative things. Note please that these are only highlights, as this report is far too small to properly convey a complete discussion of all issues discovered throughout the production.

2.1 The Danish Institute for Digital Interactive Development

During the course of the production, the student bar at ITU was loaned by DADIU to play host for the students' enjoyment. However, as it turns out, this was not planned ahead, and as such, one of the times this happened, the DADIU students had to vacate the premises due to the bar having been borrowed by a group of politicians who were in the building for a conference. This is beyond all reproach, and shows a clear misunderstanding of organisational skill.

All participants from Viborg's Animation Workshop were not present for the entire first week. Not only did this mean that they arrived so late that they could not take part in the pre-production phase, where creative decisions were made (over the top of the head of e.g. the lead animator). It also meant that while the other participants had spent a week together and worked together, in Team 3 by working on the game concept itself, the artists had been kept outside of this and thus took a while to adjust to the rest of the team.

Furthermore, it turned out part way through the production that not all the artists wished to take part in DADIU, and that they were forced to take part. It seems entirely non-sensical to force such people to go, as it subtracts from the experience of everybody else on the team, as well as being a logistical problem in themselves - they do not perform as well as they might, and thus slow down the rest of the team.

2.2 Accommodation

The author used the possibility of living elsewhere and thus receive DKK 1500, which in this case were used on transport and food. However, the last two days were spent in the dormitories used by the other 25 non-Copenhagen residents on the Copenhagen-based teams. In these dorms were, shared between the 25 people: 3 toilet cubicles, 1 shower, 1 kitchen and 1 washing machine (and no dryer). The end result being a logistical nightmare for all participants. Furthermore, the building was directly opposite Lynetten³, which is a very large sewage processing plant. As a result, the building stank every time the wind was in the wrong direction, which i have been told was the vast majority of the time.

The participants who stayed in Aalborg were put up in AAB College's dormitories, which is a purpose-built building where each flat houses one or two persons, and two flats share a kitchenette and a bathroom. In addition, the students who were put up here were offered free breakfast and pack-lunch facilities, something which also did not occur in Copenhagen.

³Lynetten's Website: <http://www.lyn-is.dk/>

On the last two days, the two teams based in Aalborg were driven in (by bus) to Copenhagen and put up in dormitories which anectdotally broke most health and safety regulations known to the participants.

2.3 Work Space

The IT University's facilities are purposebuilt for working in groups, and for encouraging social behaviour in the students. This has resulted in a production process which was, in the selfish opinion of the author, spectacularly pleasant. While the production itself was marred by lacking leadership by the visual leads and the game director, the work space itself gave the team's productive personnel (the modellers, audio designer and programmers in particular) the opportunity to work in a highly effective manner, where everybody had easy access to everybody else, and information hanging on the walls in the shape of burndown charts and other such tools could be used by everybody.

A highlight of ITU's possibilities is the Game Lab, which is a room full of high-powered computers with the newest games, which was used for example by the programmers for a knowledge sharing meeting. At this meeting, the programmers did not make use of the machines themselves so much, but did make use of the plentiful space to discuss problems and successes regarding the games each team had encountered. This was highly successful and it is the author's recommendation that this be suggested to the programmers on the next production.

2.4 Tools

The primary tool for this production was Unity3D, the rapid game prototyping tool developed by Copenhagen-based Unity Software. While it was clear during the course of the production that the tool was essentially a beta version on Windows in particular, it was also clear especially to the Aalborg progammers that it was vastly superior to the other possible tool, Valve's Source engine, which is in no way geared to the type of productions created at DADIU.

There are, of course, no roses without thorns:

The USD 1500 tool known as the Asset Server, while not entirely useless, is in no way worth that amount of money. It is in essence a version control system, but it is unable to manage merging of Unity3D's own file formats, and thus the only files it can merge are pure text files, meaning source code and .txt files (used in Puzzletive for internationalisation). As such, the author must recommend not using the Asset Server is money is an issue.

Unity Software did not inform the participants that they would like feedback on the software, and as such none of the participants took serious note of what went wrong. It would have been a good thing had they made this clear from the beginning, rather than the weekend before the deadline, so that notes could have been taken on this topic.

All in all, though, the experience with Unity3D was primarily a pleasant one, and it can be recommended for use again at a later point in time. While this is said, it must be made clear that knowing more game development tools than Unity3D, in the author's opinion, is vital to a game programmer, and as such it is recommended that no student on the Game and Engine Programming course be allowed to use Unity3D for the SP1 production.



Figure 1: A screenshot of the game. Image provided by Mads Bøgeskov.

3 The Product

The end result of the production was *Puzzletive: Garden*, which on the surface is a simple jigsaw puzzle. However, the game element of this is not the standard idea of putting pieces together to return a broken picture to its original, completed form, but rather to create combinations of the same type of puzzle piece, and thus create chains and squares of pieces, which in turn yield points. Figure 1 shows the game screen in level 3, before putting down any pieces.

On top of the game presented to the rest of DADIU, a hidden level and feature was introduced to the game, tentatively named *Evil Mode*. This is reached by typing "level4" while playing the game, and then after it finishes processing (that is, once level 4 is loaded), type in "kill" to enable the alternate play mode. This mode will allow the player to drop pieces on the animals, at which point the animals will either explode or become flat, and then begin spurting a fountain of blood. The graphics and music change drastically, and the camera is moved to a more direct angle.

This was all done in the last two days of the production by primarily by two of the programmers and two of the artists, since the task list was empty. It can be seen as a testament to the power of both Unity3D and of the codebase designed by the programmers for *Puzzletive*, but it was also used to describe the possibilities in the game concept itself - by spending relatively little effort, an entirely new game can be created, with new mechanics and a drastically changed look and feel, and the game can be sold again. In the final presentation this particular example was termed *Puzzletive: Graveyard*.

On top of the new game mode above, another feature made it in which proved to be highly effectful to the people who played the game. The game director was worried

that the game itself would be detracted from by adding a high-score feature, but the rest of the team was adamant that this was vital to a game in which the core game mechanics was a highly complex and elaborate point system. As such, it was important to especially the coders to prove that a high score system could be implemented rapidly and with little impact on the game itself. As such, once feature freeze was hit, two coders (the lead programmer and the author) sat down and coded the high-score feature in an afternoon, and thus it made it through the eye of the needle and ended up in the finished game.

The feature was used during the presentation of the game, where a competition for the highest score on each level during the course of the four hour presentation period would win chocolate. Unfortunately this was marketed so badly that only one person picked up their prize, though on the positive side, that meant that the team was able to gorge themselves on Marabou Daim and Merci chocolate bars at the party the following day.

4 In Conclusion

Finally shall be mentioned that, overall, the DADIU 2009 May production from the author's viewpoint, at the end of the day, went well. Overlooking things such as incompetent management by the Film School provided Copenhagen management, the production itself as experienced in Team 3 went fluidly and pleasantly, a credit to the rest of the team.

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