

Modern Computer Games

COMP 521, Winter 2012

Assignment 1: Narrative Games

Due date: Wednesday, February 8, 2011, by 6:00pm

Note: Late assignments will only be accepted with prior **written** permission of the instructor. You must **explain** all answers and **show all work** to get full marks! Please make sure your code is in a professional style: **well-commented**, properly structured, and appropriate symbol names. Marks will be very generously deducted if not!

Description

This assignment involves developing and performing simple analysis of a basic interactive fiction game.

1. First decide on a basic story. For this assignment you will all begin from the same tale, the story of “The Musicians of Bremen.” Please search for details on the story if you are unfamiliar with it.

This tale is not itself interactive in any way, and is also quite short. You need to develop an interactive game using the story as a starting point. You may, however, alter, embellish or distort the story as you see fit in order to achieve an interesting, playable game.

Your game should include the following features:

- the story must unfold following a 3-act format, including at least 6 of the 12 stages Vogler describes forming the hero’s progression.
- at least 10 rooms (not including the player inventory) and 10 objects (at least 5 of which have to be useful in the game in some way).
- the game should be able to be won in at least 2 different non-trivial ways, and lost in at least 3 different non-trivial ways.
- It should not be possible to win in less than 10 moves, but winning should be possible in less than 100 moves.
- non-trivial cyclic behaviour should be possible, and the player should be able to make meaningful choices.
- the player should have at least 6 commands unique to your game (ie other than basic NSEW movement, looking, take/drop, inventory management, and quit commands) but no more than 3 should be available at any specific point in gameplay.

Your game must not exhibit significant pointlessness—once a player cannot win they should lose quickly.

Describe your game as a plot DAG, indicating (as notes) places where choice or cyclic behaviour is required. Clearly identify to which story stage each node belongs.

2. Argue that your game is of good quality and appeals to players—give 3 specific justifications (other than lack of pointlessness). 7
3. Implement your game in the PNFG system. You should produce a game.pnfg file, which compiles to a game.nfg file, and which is executable in the nfg interpreter. 3
4. Give all possible minimum-length winning or losing solutions (exact list of commands) to your game. Let s be the length (number of game commands) of your smallest winning solution; use the PNFG system to search for the first winning solution, from depth s to depth $s + k$ for $k = 0 \dots 10$ (or deeper). Graph the resulting search performance; does the shape of the graph reveal anything interesting about your game design? Discuss. 10
5. Assume your game is modeled by a state machine with a starting state and distance functions giving the minimum or maximum (non-cyclic) distance between any two states. In class you saw that pointlessness can be formally defined in terms of reachability in a state space. Come up with two other interesting undesirable (or desirable) properties 5

of narratives, and formally express them in terms of state reachability and min/max/average distance. Explain why your narrative satisfies or does not satisfy your properties.

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What to hand in

For assignment submission use moodle: <http://moodle.cs.mcgill.ca/moodle>

For programming questions hand in your source code code only, and include directions (readme.txt) if compilation and usage is not trivial and obvious. For non-programming questions you can provide an ASCII text file with your answers, or a .pdf file *with all fonts embedded*. Do not submit .doc or .docx files. Images (plots or scans) are acceptable in all common graphic file formats.

Note: by submitting an assignment you are declaring that it represents your own, exclusive efforts, and that all ext and code have been written by you.

This assignment is worth 15% of your final grade.

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