Ethics of Plumbers' Nightmare

by Team HighWaters

We have created a game called Plumbers' Nightmare that is designed for people who like to solve puzzles. It is a fairly simple game in which the player attempts to connect the starting and finishing pipes on the board before the water starts flowing. We recently learned about the ethics of computing and the potential consequences of software design, using the Therac-25 case as an example. In this case, several people were killed and injured as a result of errors in the computer program used to administer radiation treatment. After studying the Therac-25 case, we wish to explore the ethical issues that go along with software development and what ethical concerns are raised with Plumbers' Nightmare.

An important concern of software developers is the reuse and expansion of their programs by other designers. If the code used to create a program is made public, anyone has access to it and can manipulate it to their own needs. While this is beneficial to many people, it also has the potential to be dangerous depending on the intent of the new developers and their understanding of the code. The code for Plumbers' Nightmare could be used in many ways to create new games. Any type of puzzle game in which a grid is needed could be expanded from our software. We also have functions that rotate pieces of the puzzle, so those portions of our code could be used in a game in which users can click on an object to make it rotate. The theme of Plumbers' Nightmare could also be changed by creating a new background and new objects in the game board. These potential games and uses of our code do not seem to be dangerous in terms of software or hardware destruction.

Another issue in computing and internet use today is the sharing of user information. Our game currently does not collect any user information, so we do not have to be concerned with privacy issues. People can freely play our game and not worry that we might sell their information to another company. This is definitely something that is an issue with internet games today and contributes to
growing problems, such as identity theft. In the future, our game could be changed to collect names of players and other information, so there is potential for ethical issues to arise as a result of our initial software.

As computers and the internet have expanded, people are spending more and more time on their computers. As a result, health problems have developed around the use of computers. Carpal tunnel, obesity, eye strain, and headaches are all examples of conditions that may be caused by spending too much time on a computer. Games greatly contribute to increased computer use, especially among teenagers, which makes them more susceptible to computer related illness. It is easy to lose track of time while playing a computer game, and over time this can compromise health. Plumbers' Nightmare currently does not have multiple levels so it is very easy to keep track of how long you have been playing, but in the future more levels could be created. As the game is expanded and more people play through each level, Plumbers' Nightmare may contribute to the global increase in computer use.

If people do suffer from computer related health issues, it is necessary to consider who will take responsibility for the situation. For example, if someone makes their eyesight worse from playing Plumbers' Nightmare too much, are we responsible because we are the ones who created the game? Some companies purposefully make games that will be addicting to those who play, however we have not done this with Plumbers' Nightmare, so we do not believe we are at fault. It is important for users to be aware of the consequences of spending too much time using a computer and to monitor their use so they can maintain a healthy lifestyle.

Ethical issues of computing are greatly debated among software developers today. It is crucial for them to consider the consequences of the products they create, and how these products may be used in the future. While it seems that Plumbers' Nightmare does not have many ethical concerns, the software definitely has the potential to be changed. These changes include problems such as user privacy, increasing time spent playing computer games, as well as health issues surrounding prolonged computer use. At our level of coding, we do not know how to include security measures with our code,
so we just hope that our program will not be developed for unethical purposes and that further developers will seriously consider our concerns before they proceed with development.