One of the purposes of this course, as directed by ABET, the accreditation board for engineering schools, is to encourage engineering students to be aware of the effects of technology on society. One of these effects is the moral issues that are raised by technology.

One of the more interesting recent issues raised by technology has to do with voting machines. After the voting problems in the 2000 election, many county, municipal and state governments have purchased touchscreen voting machines. Some studies have shown that these machines produce less errors than the older punch card machines. Henry Brady, a political scientist at U.C. Berkeley, found that there was a 7% rate of flawed ballots with the older punch cards, as opposed to about 1.3% with touchscreens.

Despite these advantages, there are a number of disadvantages to electronic voting. It tends to be more expensive, for example. Some state officials have pointed out that the machines take way money that could be used for health care, schools, parks and roads.

There are other problems. A *New York Times* article on July 11, 2004, reported that in a March 9 Democratic primary, 1 out of 100 votes using the new ATM-style machines were not recorded, and that there were eight times the number of flawed votes cast in the same election with paper ballots marked by pencil. It quotes critics as arguing that the new machines are “too expensive, confusing to a large segment of voters and packed with flawed software.” The new machines are particularly confusing to seniors. According to one story, an elderly woman cast her ballot too early and became increasingly frustrated in the voting booth as she tried to correct the problem. The article goes on to say that human behavior specialists need to be involved in the design of the machines.

An article in the Lawrence, Kansas, *Journal-World* on June 1, 2004 finds two risks with electronic voting: deliberate manipulation of the votes and accidents of one kind or another. Other articles quote computer scientists as saying that inherently susceptible to manipulation.

An article in the *San Francisco Chronicle*, on April 26, 2004 by John Wildermuth, points out that when Congress passed the *Help America Vote Act* in 2004, it was confident that the new technology, and $3.9 billion would solve the problems revealed in the 2000 election in Florida. This has not been the case, however. The article gives several examples:

“--In Broward County, Fla., a January special election for a state House seat found that 134 people who used the Touch-screen system didn’t have a vote recorded in an election won by 12 votes.
--Touch-screen machines in North Carolina lost 436 votes in a 2002 election.
--In Maryland, which went totally electronic this year, a test team showed in January that it was possible for hackers to guess the password needed to access the voting machines, break into the results transmitted from the election site and even fiddle with the software so that a vote for one candidate was recorded as a vote for another.”

The article continues: “In San Diego, counting software credited several thousand of John Kerry’s votes to Dick Gephardt, who had already dropped out of the Democratic
presidential contest. In October’s recall election, a software problem shifted thousands of absentee votes for Democratic Lt. Go. Cuz Bustamente to a Socialist candidate from Southern California.” The vote shifts were caught only because the counties were able to compare the electronic results to the paper absentee ballots.

One final quote from the same article: “In 2001 congressional testimony, Rebecca Mercuri, a computer voting expert now at Harvard, warned that electronic balloting systems are at the mercy of the people who build, program and maintain the machines. ‘Any programmer can write code that displays one thing on a screen, records something else and prints yet another result,’ she said. ‘There is no known way to ensure that this is not happening inside of a voting system.’”

Despite these problems, many believe that electronic voting is the wave of the future. Somehow the problems must be eliminated.

Assignment
(1) Conceptualize the moral problem that you find in this issue. Remember that a moral problem usually involves a conflict between at least two moral considerations or values. The problem should involve considerations of one of the following three types: utility vs. utility, utility vs. RP, or RP vs RP. (1 points)
(2) Demonstrate the moral conflict by giving arguments for each side of the controversy. These arguments should be utility vs. utility, utility vs. RP, or RP vs RP. Example: If you believe the controversy is best described as a conflict between utilitarian considerations that run in two different directions, you might give a utilitarian argument for one side of the controversy and a utilitarian argument for the other side of the controversy. You could use either rule- or act-utilitarian arguments, depending which you think is more appropriate. Or you might decide the controversy is between utilitarian and RP considerations or between RP considerations on both sides of the issue. (6 points)
(3) Suggest a creative-middle-way solution to the problem, and show how it solves, or helps to solve the problem presented in the two arguments in (2). If you believe the best creative-middle way solution you can think of is unsatisfactory, show why this is the case. (3 points)

The essay should be no more than four double-spaced typewritten pages, and it is due at the recitation section on Friday, October 15.

Before you give the essay to your TA, submit it to turnitin.com. See http://itsinfo.tamu.edu/turnitin/students.htm for details. You will need to create an account before your paper will be accepted by the system. After creating an account, use the following ID and password to submit your paper: ID: 1178752 Password:482ethics.

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