

CS 110 Project Suggestions Spring 2009

During the semester we have studied how to design solutions for a variety of problems, and we have written implementations of these designs using java. Among the topics we have covered are variables, types, classes, methods, class variables, local variables, parameters, arrays, searching and sorting, and picture manipulation.

Now the time has come for you to choose a problem of your own, something of special interest to you, possibly, but not necessarily, connected to your major. You will write a problem statement carefully identifying the problem you plan to solve. You will then prepare a design of a solution for the problem, and finally, you will write the java code to implement the solution. Your problem should incorporate most of the topics covered above and should also include at least one new topic that you will learn about while working on the problem.

You may work alone or with another person on this project. If you work as a pair, 80% of the grade will be the same for both of you. The other 20% will be determined by peer evaluation and your obvious understanding of the work. The project will count as a test grade.

Here are some suggestions:

1. Learn about graphics and make your TicTacToe game user friendly by drawing the board on the screen and allowing players to use a mouse click to make their selection.
2. Choose another game (not chess) and implement it. One example is the mine sweeper.
3. Write a program that manages large data sets by providing a way to store and retrieve a variety of data and to put that data into order according to choice of key. For example, you might allow for storing names, addresses, phone numbers, and whatever other data you might want and then allow for the data to be arranged alphabetically by name and allow lists of those in a particular geographical location to be displayed.
4. Write an interactive program that allows users to choose pictures and then modify those pictures according to their choice and then to combine them in whatever way they want to produce a collage. For example, you might take a picture and turn it into a cubist style or an impressionist style
5. Write an encoding and decoding program that allows a user to enter messages and have them encoded and also allows the user to receive messages and decode them.
6. Write a program that hides secret messages inside a picture.
7. Write a program that could be used by a retailer to allow users to choose items they wish to buy and then prepares a bill for the purchases. This is the kind of program an online store would use
8. Write a drawing program that allows users to draw lines, circles, rectangles, etc.
9. Write a program that acts as a calculator.

10. Write a program to process text material according to some requirement.
11. Write a program that allows a user to prepare a picture album for the family.
12. Write a program that introduces animation into a picture.

You need to write a draft of your program statement by April 13, so you will get feedback on whether your project choice is reasonable.

The project is due May 4.

Grading:

Problem Statement: 5%

Program 60%

Organization into Methods

Use of java capabilities

Loops

Arrays

Variables

Parameters

I/O

Comments in Program 20%

Something New 15%

Total: 100%