

CS106 W19 - Assignment 02

Due: Friday, January 18, 11:59 PM

This assignment uses arrays, `char[]`, and `String[]`. Arrays, `char[]`, and `String[]` were covered in class on the week of January 14th. If you need to refresh yourself, review the slides that were presented in class and the demo code examples that were provided. They are both on LEARN.

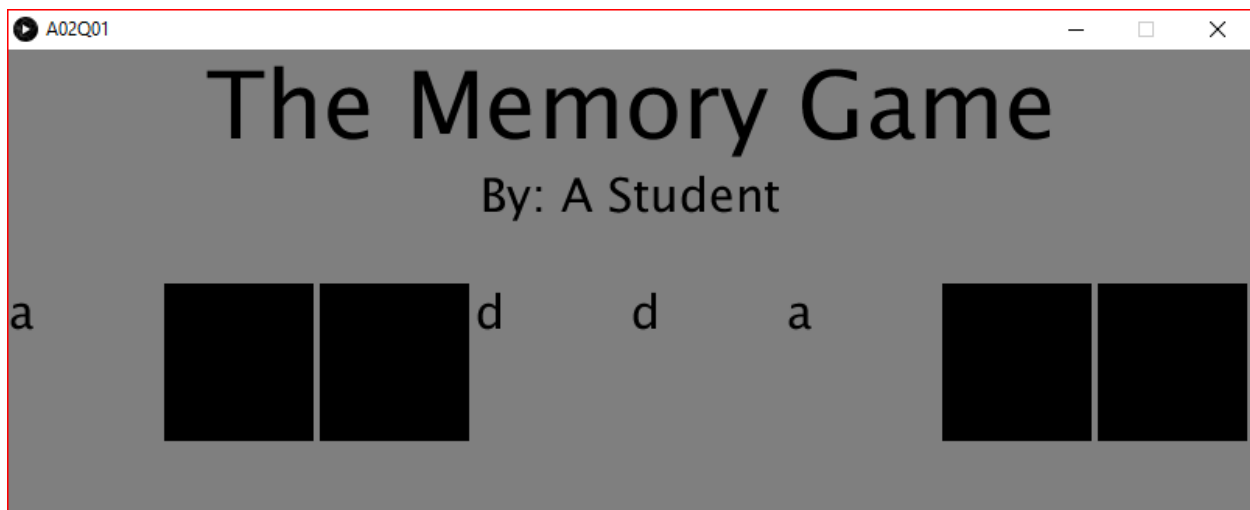
QUESTION ONE (80% of A02)

Write a program to create the Memory Game. Mimic what you see in this YouTube video:
<https://youtu.be/v2nyH28YDMw>

- Your hidden letters under the squares in the Memory Game must be of type `char[]`. You may want to start with code such as the following which includes the letters in a `char[]` called “pairs”. In the code below the array “pairs” is of size 8 but your code must work with arrays of sizes 8, 10, or 12. We have also included the declarations for the arrays “uncovered” and “currentPair” which you may also want to use.
- Note that when a user uncovers two letters that are not a match, your Memory Game must wait for a second or so to allow the user to see the letters before they are covered up again. To do this you will probably use a timer. There is a timer in your demo code for the week of January 14th.

```
char[] pairs = {'a', 'c', 'b', 'd', 'd', 'a', 'b', 'c'};
boolean[] covered = new boolean[pairs.length];
int[] currentPair = new int[2];
```

- Replace “A Student” with your name.



QUESTION TWO (20% of A02)

Modify your solution for QUESTION ONE so that instead of letters behind the squares in the Memory Game, there are Strings. You may want to use the following code:

```
String[] pairs = {"Hearts", "Spades", "Diamonds", "Clubs",  
    "Clubs", "Hearts", "Diamonds", "Spades"};  
boolean[] covered = new boolean[pairs.length];  
int[] currentPair = new int[2];
```



Don't forget, when comparing two strings you do not use equal signs but rather you use "str1.equals(str2)".

Requirements and Grading

QUESTION ONE:

[4 marks] Correctness

- The sketch must meet the requirements listed above.

[2 marks] Coding Style

- Comment your code appropriately. Avoid superfluous comments.
- Correctly and consistently indent your code blocks.
- Use correct inline spacing in function calls, function definitions, and variable declaration and assignment.
- Use good line spacing to chunk sections of your code.
- Pay special attention to inline spacing for your conditional statements

One or more marks may be deducted for solutions that have obvious inefficiencies.

- Variables that are declared or assigned, but not used.
- Unnecessarily repeating the same code in multiple places.

[2 marks] Visual Design and Creativity

- Higher marks will be given to sketches with extra details for creativity and artistic appeal.

QUESTION TWO:

[2 marks] Correctness

- The sketch must be the same as your submission for QUESTION ONE, except use `String[]` instead of `char[]`.

Submitting

Create a folder “A02_username”, but replace “username” with your UW id. So if your email is “jac926@edu.uwaterloo.ca” you would create a folder “**A02_jac926**”.

SAVE your sketches in that folder as “A02Q01_username” and “A02Q02_username”. Again, replace username with your UW id.

Zip your “A02_username” folder (with “username” replaced by your UW id) and submit it the correct assignment dropbox.

It is your responsibility to submit to the correct dropbox with the correct files before the deadline. Otherwise you will have marks deducted.

Academic Integrity

All assignments in CS106 are done individually. Group work and sharing of code is not allowed.

Detecting Plagiarism:

- We monitor Reddit, File Trading Sites, past year CS106 assignments, etc.
- Measure Of Software Similarity (MOSS)
 - automatic system for determining the similarity of code

Discipline

- Discipline (Policy 71)
 - <https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71>