### CS 278 Exam 2: Hands on Practical Problem – Kaleidoscope (60% of the total Exam 2 Score)

**INSTRUCTIONS**:

* Since this is a take-home exam you will need to work on the honor system. You must put the following statement at the top of the .ASM file you write for this problem:
* **I affirm that all code given below was written solely by me, <give your name>, and that any help I received adhered to the rules stated for this exam.**
* Submit on WhitGit by the due date.
* Matt is supplying some pseudocode to help you out. One recommended strategy is to translate that pseudocode first to C++, then translate that C++ to assembler using the C++ code to comment your program.

In your CS 278 folder on CS1, make a folder called EXAM2. Inside this folder, place an assembler project called **Kaleidoscope**. Your program should loop continuously and make an ever-changing random pattern like that shown in the following figure. HINT: After every program loop you will need to clear the screen in the dos window. You may also wish to call a delay function between each update. You must complete this project using only the information described in chapters 1 – 5 and 8 of your textbook (technically, you don’t need chapter 8, you may use it though if you wish).

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| **CATEGORY** | **POINTS** |  |
| Honor statement was included. Note: refer to the academic honesty statement in the syllabus. If we detect you copied/shared code from/with another student, you will fail the entire exam 2. You will receive a 0 on both portions. |  | 6 |
| You must write and use at least one subroutine (function call) to develop this program (do not put all the code in main) |  | 12 |
| Your code must include a header and descriptive comments. Too many comments is better than too few. |  | 6 |
| Your program must generate a pattern with 4-fold or greater symmetry. (i.e. like the image shown, or a higher degree of symmetry, if you wish). |  | 6 |
| Code written reasonably efficiently. Use the fewest number of instructions that you can. |  | 6 |
| Code works correctly runs without crashing. |  | 24 |
| **TOTAL** |  | 60 |

