

Marking Scheme – Twenty-Forty-Eight

1. Correctness (70%)

- a. Input (10%) – Input is read in correctly from the standard input.
- b. Output (10%) – Output is done according to the problem statement.
- c. Correct maximum points (50%):
 - Merge same-numbered tiles into one new tile with the correct number (10%)
 - Does not merge same-numbered tiles that are newly-formed on the very same move (10%)
 - Stack two different-numbered tiles / tiles that collide with the edges (10%)
 - Able to slide tiles left (5%), right (5%), upwards (5%), and downwards (5%)

2. Programming Style (30%)

- a. Meaningful Comments (10%)
 - Pre- and Post- conditions (5%)
 - Each method and function must have pre- and post- condition.
 - **Pre- and post- conditions must be correct!**

Deduct marks proportional to the number of methods / functions with them:

- Ignore comments in unused functions
 - Ignore comments from skeleton file
 - Post-condition should depend on the algorithm
 - Pre-condition should also depend on the algorithm
- Other Comments (5%)
 - No other comments at all (deduct 5%)
 - Has very few comments (deduct 2%)
 - b. Modularity (10%)
 - Only main method (deduct 5%)
 - Global variables (deduct 5%)
 - Improper modifiers (public / private / protected) (deduct 3%)
 - ➔ There should be some reason to use public, otherwise attributes and helper methods should be private.
 - c. Proper Indentation (5%)
 - Start each line in column 1 (i.e. no indentation at all): deduct 5%
 - Inconsistent indentation for more than 5 lines: deduct 2% - 3%
 - Only a few lines are improperly indented (1 to 5 lines): deduct 1%
 - d. Meaningful Identifiers (5%) [note: for both **variable** and **method** names]
 - Use only single character variables and/or methods (besides the one given in the problem statement or for loop counters): deduct 5%
 - Some names are not meaningful: deduct 2%

3. Compilation Error: Deduct 50% from total marks obtained.

Note: Provide explanation on why certain marks are deducted in the remarks column. Most importantly, comment on their submission to help them improve their program.