

Assignment 2 – MapReduce Library

Category	Mark
Structure and functionality <ul style="list-style-type: none"> • Marks will be deducted for: failing to implement the specified scheduling algorithm (-10), defining additional functions in <code>mapreduce.h</code> (-5), adopting a hash function that yields a significantly non-uniform distribution of tasks (-5), failing to properly sort intermediate data structures in the map phase (-5), adding unnecessary data members to the thread pool structs (-2 each). 	/20 marks
Runtime <ul style="list-style-type: none"> • Marks will be deducted for: implementation is not efficient and concurrency management is not done economically (will also depend on the actual runtime of the program on large test cases). 	/20 marks
Test cases <ul style="list-style-type: none"> • Marks will be deducted for: failing on test cases. 	/40 marks
Makefile <ul style="list-style-type: none"> • Marks will be deducted for: missing a required target (-2 each), missing necessary flags (-1), assigning a different name to the executable (-2). 	/5 marks
Readme <ul style="list-style-type: none"> • Marks will be deducted for: missing or incomplete explanation of your data structure (-5), missing time complexity analysis of <code>MR_EMIT</code> and <code>MR_GetNext</code> (-5), missing explanation of the library functions and global variables (-5), missing description of your own tests (-5). 	/15 marks

Note: Deductions may be applied at the grader's discretion if the submission:

- Does not meet the requirements or does not support all the features listed in the assignment description;
- Does not compile or run correctly (and to a lesser extent does not compile cleanly with `-Wall -Werror -pthread` flags);
- Has extremely poor code structure, style, or modularity;
- Uses an existing thread pool library or `mapreduce` library;
- Has memory leaks.