

COMP 2401 -- Assignment #4 Grading Scheme

Fall 2014

Data structures: 10%

- 5 marks: HeapType contains correct field
- 5 marks: required data type is defined correctly

Memory Hunter functions: 90%

- 3 marks: mh_init function initializes content of heap variable
- 10 marks: mh_cleanup function
 - 4 marks: examines every block
 - 6 marks: frees correct list information
- 30 marks: mh_alloc function
 - 3 marks: uses malloc to allocate new memory
 - 5 marks: allocates new block
 - 3 marks: initializes every field in new block
 - 8 marks: allocates and initializes new node
 - 8 marks: adds node to the **end** of the linked list and shifts pointers accordingly
 - 3 marks: returns pointer to new memory
 - Deduction:** all 8 marks if new node is added at the front of the list
- 22 marks: mh_dealloc function
 - 5 marks: finds block containing given address
 - 8 marks: removes node from the list and shifts pointers accordingly
 - 3 marks: frees memory at given address
 - 6 marks: frees correct list information
- 4 marks: mh_count function still works using linked list
- 4 marks: mh_dump function still works using over linked list
- 17 marks: mh_collect function
 - 4 marks: examines every block
 - 3 marks: for each block, frees memory at address in block
 - 6 marks: for each block, frees correct list information
 - 4 marks: reset head of linked list

Deductions: full marks for each of the above that cannot be tested because the code does not compile or run

Deductions and Bonus marks

- Up to 50 marks deduction for any of the following:
 - the code does not compile using gcc in the VM provided for the course
 - the code cannot be tested because the program doesn't run
- Up to 20 marks deduction for any of the following:
 - the Makefile or the readme file is missing
 - global variables are used
 - structures are passed by value
 - program is not broken down into multiple reusable, modular functions
- Up to 10 marks deduction for missing comments or other bad style (non-standard indentation, etc.)
- Up to 5 bonus marks for fun and creative additional features