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CS 214 Assignment 2: Malloc and Free with Error-Detection

Readme

We implemented malloc using a heap size of 8000 blocks, made with a char array, the size of which is declared in the header file. In malloc, we check for the first time a block has been initialized, and then handle errors for too large a block size, too large a block size plus header, and we also handle non-contiguous sections of memory being allocated. In free, we merge smaller blocks of memory to handle the non-contiguous issue, as well as checking for doubly freed or de-referenced pointers. We also handle invalid pointer addresses. An optimization we made in free is re-aligning non-contiguous blocks of memory, to better optimize available space.