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CSCE 313
Spring 2015

Machine Problem 1

1. When a value is a inserted whose length is less than the max payload size, then the memory not used by the value isn't freed, and is then wasted. This can be fixed by using a dynamically sized payload that knows the length of the value.
2. Similar to number 1 above, if all of the possible node space is used, but the payloads are not entirely filled, then there will still be unused memory, but no more insertions can be made.
3. When the pointer is 8 bytes, then the maximum size of the value will be the size of the memory block (B) minus 16 bytes (P = B – 16 bytes). The general expressions will be: $(2^{31} - 1) / T$, where T is number of tiers.