Report for Programming Assignment 5

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Goal : Make a linux SLAB allocator and make it thread-safe and re-entrant.

First of all we create a bucket (initialized to NULL) . Whenever user requests for memory to be allocated, corresponding size of bucket is located and then a slab is allocated. Bitmap is used to keep track of an object whether it has been allocated or not. Variable base is used to keep track of the address of slab allocated. Base gets incremented according to the size of memory requested and gets decremented if myfree() is called. The whole slab is deallocated once all object bitmaps are set to false.

To enable thread safety, semaphore is used on bucket. Multiple threads cannot access bucket at the same time.