UECS2103/2403/2423 Operating Systems

Tutorial 6

1. Briefly describe internal fragmentation and external fragmentation.

2. Consider a buddy system with 1MB of memory. Show the memory partitioning and allocation for the following requests.

   102K, 120K, 16K, 200K, 50K, 250K

3. Given 1MB of memory is available in a buddy system. Show the allocation and memory partitions for the following events.

   Request A: request 120KB
   Request B: request 20KB
   Request C: request 60KB
   Request D: request 230KB
   Release B.
   Request E: request 190KB
   Release C.
   Request F: request 100KB

4. What is the difference between simple paging and virtual memory paging?

5. Consider a user process of 8GB, is divided into pages, each page is 8KB and each page table entry is 4 bytes. How much memory space required to store the

   a) page table when simple paging is applied?

   b) root page table when 2-level scheme paging is applied?

6. Briefly describe thrashing.

7. What is translation lookaside buffer and what is the purpose of translation lookaside buffer?