This is part II of the project which writes a simulation program that translates logical to physical addresses for a virtual address space of size 2^{16} = 65,536 bytes. Your program will read from a file containing logical addresses and, using a TLB (size of 32) as well as a page table, will translate each logical address to its corresponding physical address and output the value of the byte stored at the translated physical address. You need to use an LRU policy for updating your TLB. The goal behind this project is to simulate all the steps involved in translating logical to physical addresses. Since you have already learnt C programming in Project 1, 2, 3, 4 and 5 you can use JAVA to implement this project. Specifications and explanations can be from Page 458 to Page 561. Please also find starting code and supporting files at the bottom of the page.

Rubric:

1. Use LRU policy for TLB. (10 pt)
2. Print "Page Faults = " with the actual number of page faults accrued and "Page Fault Rate = " with the actual page fault rate value. (5 pt)
3. Print "TLB Hits = " with the actual number of TLB hits. (5 pt)
4. Print "TLB Hit Rate = " with the actual TLB hit rate value. (5 pt)

Tips:

1. The backing store is provided as the file BACKING STORE.txt (JAVA) or BACKING STORE.bin (C). When a page fault occurs, you will read in a 256-byte page from the file BACKING STORE and store it in an available page frame in physical memory.
2. Frame, page table and TLB are provided in the starting code (C) or in separate classes (JAVA).

Submission Instruction:

1. Take a screenshot of your output required in "Rubric" and save it in a PDF file. The PDF file should be named following this format, YourCSUNID_YourLastName.pdf
2. Upload all your source code in one file either in .c or .java.
3. The source code file should be named as yourCSUNID_2.c or yourCSUNID_2.java.
4. All files need to be submitted here in Moodle.

Submission failed to meet the submission requirement will not be graded. Grade may be forfeited.