# Project 5 Virtual Memory Manager

# Data Structures: Exercise

1. Can you design a data structure for tlb entry? This is a building block for tlb
2. Can you design a data structure for TLB using TLB\_entry? This is the TLB to speedup the address translation performance
3. Please design a few functions that access (i.e., read and update) the TLB data structure

int TLB\_init(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_);

int TLB\_replacement\_FIFO(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_);

int TLB\_display(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_);

1. Can you define new data types for logical and physical addresses?

typedef \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

typedef \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

1. Can you define new data types for Page\_num, frame\_num, offset?

1. Can you define offset bits for bitshift operators?
2. Can you define offset\_Mask to extract offset from a logical address?
3. Can you define a few system constants (hints: there are four system parameters)?