```
 1 // tlb.h
 2
 3 #ifndef REALTLB_H
 4 #define REALTLB_H
 5
 6 #include "copyright.h"
 7 #include "ipt.h"
 8 #include "addrspace.h"
 9
10 // function declarations
11
12 //----------------------------------------------------------------------
13 // UpdateTLB
14 //      Called when exception is raised and a page isn't in the TLB.
15 // Figures out what to do (get from IPT, or pageoutpagein) and does it.
16 //----------------------------------------------------------------------
17
18 void UpdateTLB(int possible_badVAddr);
19
20 //----------------------------------------------------------------------
21 // InsertToTLB
22 //      Put a vpn/phyPage combination into the TLB.
23 //----------------------------------------------------------------------
24
25 void InsertToTLB(int vpn, int phyPage);
26
27 //----------------------------------------------------------------------
28 // PageOutPageIn
29 //      Calls DoPageOut and DoPageIn and handles IPT and memoryTable
30 // bookkeeping.
31 //----------------------------------------------------------------------
32
33 int PageOutPageIn(int vpn);
34
35 //----------------------------------------------------------------------
36 // DoPageOut
37 //      Actually pages out a phyPage to it's swapfile.
38 //----------------------------------------------------------------------
39
40 void DoPageOut(int phyPage);
41
42 //----------------------------------------------------------------------
43 // DoPageIn
44 //      Actually pages in a phyPage/vpn combo from the swapfile.
45 //----------------------------------------------------------------------
46
47 void DoPageIn(int vpn, int phyPage);
48
49 //----------------------------------------------------------------------
50 // clockAlgorithm
51 //      Determine where a vpn should go in phymem, and therefore what
52 // should be paged out.
53 //----------------------------------------------------------------------
54
55 int clockAlgorithm(void);
```

```
56
57 //----------------------------------------------------------------------
58 // GetMmap
59 //      Return an MmapEntry structure corresponding to the vpn.  Returns
60 // 0 if does not exist.
61 //----------------------------------------------------------------------
62
63 MmapEntry *GetMmap(int vpn);
64
65 //----------------------------------------------------------------------
66 // VpnToPhyPage
67 //      Gets a phyPage from a vpn, if exists.
68 //----------------------------------------------------------------------
69
70 int VpnToPhyPage(int vpn);
71
72 //----------------------------------------------------------------------
73 // PageOutMmapSpace
74 //      Pages out stuff being mmaped (or just between beginPage and
75 // endPage.
76 //----------------------------------------------------------------------
77
78 void PageOutMmapSpace(int beginPage, int endPage);
79
80 #endif // TLB_H
81
```