multithreaded/p_stack.h

```c
1   #include <stdio.h>
2   #include <string.h>
3   #include <stdlib.h>
4   #include <stdbool.h>
5
6   typedef struct p_stack_struct
7   {
8       // max capacity of the stack
9       size_t size;
10      // position of the last item pushed onto the stack
11      size_t pos;
12      // memory for stack
13      void **items;
14  } PSTACK;
15
16  #define PSTACK_RESIZE_FACTOR 2
17
18  int init_pstack(PSTACK *p, size_t PSTACK_size);
19  bool is_full_pstack(PSTACK *p);
20  bool is_empty_pstack(PSTACK *p);
21  int push_pstack(PSTACK *p, void *item);
22  int pop_pstack(PSTACK *p, void **p_item);
23  int resize_pstack(PSTACK *p);
24  size_t num_elements_pstack(PSTACK *p);
25  int cleanup_pstack(PSTACK *p);
```