

```

1 // Stack consists of linked list of nodes.
2 // The following defines a stack node:
3 struct Node {
4     struct Node* next;
5     void* value;
6 }
7 // Pointer to top of the stack, initially
8 // NULL as the stack is empty:
9 Node* stack = NULL;

```

(a) Definitions

```

10 void push(void* v) {
11     Node *old_top, *new_top = malloc ();
12     new_top->value = v;
13     while (true) {
14         old_top = stack;
15         new_top->next = old_top;
16         if (CAS(&stack, old_top, new_top))
17             return;
18     } }

```

(b) Pushing a value

```

19 void* pop() {
20     Node *old_top, *new_top;
21     while (true) {
22         old_top = stack;
23         if (old_top == NULL) return NULL;
24         new_top = old_top->next;
25         if (CAS(&stack, old_top, new_top))
26             return old_top->value;
27     } }

```

(c) Popping a value

