

## COP 3502 Fall 2023 Sections 1, 4 Recitation Program #4

### Shiritori

**Kattis link:** <https://open.kattis.com/problems/shiritori>

For each recitation program, in order to get full credit, you must submit your solution to open.kattis.com and get your solution accepted on all test cases. In addition, each one will have some separate requirements to fulfill based on your code. When submitting your work to Webcourses, please carefully read the corresponding directions document before submitting all of your files.

**NOTE: Over the course of the semester, you must submit TWO out of the four recitation programs. It is expected that while you are in recitation, you start working on each of them. But, afterwards, you can choose which two to finish up.**

### What This Program Is Testing/Implementation Requirements

While there are many ways to correctly solve this problem, one method involves storing each input string in a hash table. **For this assignment, the requirement will be that you store each input string in a hash table of size 100003 (a prime number) using separate chaining hashing with the hash function that is provided below.** You must provide code to insert an item into a linked list and search for an item in a linked list. In order to receive full credit you must also properly handle all dynamically allocated memory and dynamically allocate only the necessary memory for each string (instead of allocating 121 chars for each string). **(Any VLAs will be an automatic 10 point deduction even if you get your program accepted.)**

Please use the following hash function:

```
#define SIZE 100003
// Returns the hash value for word, which is just the base 26 interpretation
// of word mod the hash table size.
int hash(char* word) {
    int len = strlen(word);
    int res = 0;
    for (int i=0; i<len; i++)
        res = (26*res + word[i]-'a')%SIZE;
    return res;
}
```

### What to Submit

Please submit the following:

- 1) Your source file, shiritori.c.
- 2) A screenshot of your solution's accepted status on Kattis. **This screen shot needs to include your name at the top right and all of the check marks as well as the starting of your code below.**