

## Quiz 2

**Deadline: Due at 9:15AM on Feb 14, 2024**

Implement a function `isPalindrome` in the provided `quiz2.c` skeleton file that checks if a singly linked list is a palindrome.

You are provided with a skeleton file, you are not allowed to modify any other part of code except **`isPalindrome`** function from line 18 in **`quiz2.c`**.

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <stdbool.h>
4
5  // update this with your A number
6  char a_num[] = "00001";
7
8  struct ListNode
9  {
10     int val;
11     struct ListNode *next;
12 };
13
14 bool isPalindrome(struct ListNode *head)
15 {
16     int is_palindrome = true;
17     // WRITE YOUR CODE HERE
18
19     // DONT EDIT ANYTHING BELOW THIS LINE
20     return is_palindrome;
21 }
22
23 int main(int argc, char *argv[])
24 {
```

The signature of the function is:

```
bool isPalindrome(struct ListNode* head);
```

## Requirements

- The input linked list may contain integers.
- The input elements will be a value between 0-9.
- The main function reads the input from a file specified in the command line arguments and prints either "true" or "false" to the output file.

### Restrictions

- You are not allowed to write any additional **printf** statement anywhere in the file.
- You are not allowed to modify any part of the code except the **isPalindrome** function and the **a\_num** variable.
- If you have any doubts, ask me.

### Example

Here is an example of the input file, where 1 -> 2 -> 2 -> 1 is a palindrome:

```
1 2 2 1 E
```

Here is the output of running the input file through your program.

```
true
```

### How to Compile and Run

- The Makefile for quiz2 is provided.
- The Makefile is supposed to work with quiz2.c, input.txt, output.txt and ref.txt files so, make sure to modify the skeleton file and save the text files accordingly.
- Run the following command in vs code Terminal.

```
make
```

It should compile the code without any errors.

```
make convert_input
```

It should convert the input.txt file to unix encoding.

```
make run
```

It should run the compiled code.

```
make convert_output
```

It should convert the output.txt file to unix encoding.

- Run the following command to delete the out file.

```
make clean
```

- Run the following command to check the output with provided reference file.

```
make check
```

- You are not supposed to make any changes in the Makefile.

### Grading

The quiz must done in Unix environment. There will be no corner case inputs. Any grading failure due to not following instructions will result in 0.

- (3 point) Three test cases.

**Submission**

- You must submit only one .c file named: quiz2.c (case sensitive) to learning hub.
- Make sure to update your A number. Look at the top of quiz2.c and write your A number including leading 0's.