Quiz 1

Software Systems
Spring 2018

This quiz is open book, open notes, open Internet. You can use a C compiler to check code, but beware of spending too much time on it.

1. There are two ways to assign a string literal to a variable:

   ```c
   char *pointer = "String literal";
   
   and
   
   char array[] = "String literal";
   
   Explain two ways that pointer and array behave differently.
   ```

2. For each of the following errors, indicate which stage of compilation would detect the error:

   • The program calls a function that is not defined anywhere in the program or its libraries.

   • The code in a header file has mismatched parentheses.

   • The program tries to access an element beyond the bounds of an array.

   • The type of a function argument does not match the type of the corresponding parameter.

3. For each of the functions on the other side, explain what’s wrong and how to fix it, if there is an error; otherwise, indicate that the function is correct.
Quiz 1

#include <stdio.h>

/* add: return the sum of x and y */
int add(int x, int y) {
    int z = x + y;
    return z
}

/* addp: add the pointees of p1 and p2, and store the result in the pointee of p3. */
void addp(int* p1, int* p2, int* p3) {
    p3 = *p1 + *p2;
}

/* test_add: test add and print the result. */
void test_add() {
    sum = add(3, 4);
    printf("%d\n", sum);
}

/* test_addp: test addp and print the result */
void test_addp() {
    int a = 3;
    int b = 4;
    int c;

    addp(&a, &b, &c);
    printf("%d\n", c);
}

/* check_parity: return "n is even" if n is even, and "n is odd" otherwise */
void check_parity(int n) {
    switch (n%2) {
    case 0:
        return "n is even";
    case 1:
        return "n is odd";
    }
}

void main() {
    test_add();
    test_addp();

    char *s = check_parity(n);
    printf("%s\n", s);
}