

Activity 2

CSCI 331: Fall 2023

Your name: _____

Memory Allocation Activity

Refer to the buggy code below to answer the questions.

```
1 #include <stdio.h>
2
3 typedef struct record {
4     char first_name[20];
5     char last_name[20];
6     char identifier[20];
7 } record_t;
8
9 record_t* create_record(char* fname, char* lname, char* id) {
10     record_t r;
11     r.first_name = fname;
12     r.last_name = lname;
13     r.identifier = id;
14     return &r;
15 }
16
17 int main() {
18     record_t* r = create_record("Jason", "Bourne", "70014051");
19     printf("First name: %s\n", r->first_name);
20     printf("Last name: %s\n", r->last_name);
21     printf("Identifier: %s\n", r->identifier);
22
23     return 0;
24 }
```

Answer the following questions.

1. This program has several bugs. What are they?
2. Draw the memory state of the program right after `create_record` returns. What problems do you see?

3. How might I fix this program? Write your modified code below.