Computer Programming 2 Lab

2023/03/29 Andy Hung

Outline

- HW 4
- Function in struct
- Using .h files

HW4

Description

There’s some rumor that students will fry sweet potato balls in front of the NCCUCS department office, which is untrue. In fact, students farm some normal potatoes. These potatoes then get fried by themself and become potato balls, the process does not change the weight of the potato (after frying a potato weight a, you get a potato ball with weight a). The magical potatoes have magical effect on them, which is kept after frying. Now, you need to fry two different types of potato balls in the same way.

HW4

Input

The first line gives a positive integer `N`, which is the rand seed.

Output

Please print out informations if it runs to print.

HW4

Input

```
1
```

Output

```
Potato:
  producer: Tom
  weight: 887
Potato Ball:
  producer: Tom
  weight: 384
```

HW4

What you need

```
struct PotatoBall {
  struct PotatoProducer* producer;
  int weight;
  int magical;
  char effect[32];
  void (*print)(struct PotatoBall** potatoBall);
  void (*dtor)(struct PotatoBall** potatoBall);
};

struct Potato {
  struct PotatoProducer* producer;
  int weight;
  int magical;
  char effect[32];
  void (*print)(struct Potato** potato);
  struct PotatoBall* (*fry)(struct Potato** potato);
};
```

HW4

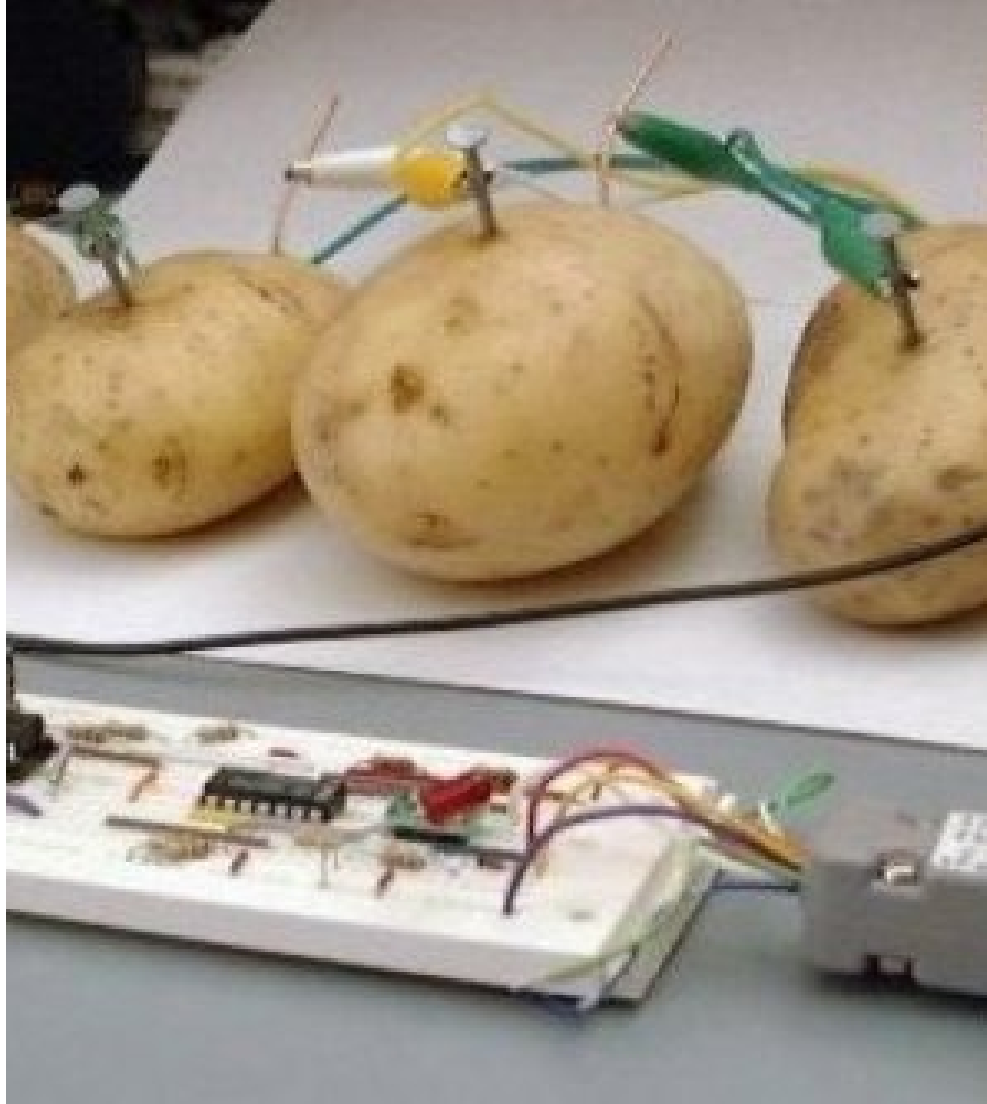
What you need

```
struct PotatoProducer {
  char name[20];
  int magical;
  struct Potato* (*produce)(struct PotatoProducer* producer);
};

void init_potato_producer(struct PotatoProducer* producer, const char* name, int magical);
```

HW4

- Producer name may change
- Destroy itself when `` `fry` `` or `` `dtor ``
- Print detail of the potato/potato ball
- Magical effect will always be "slowness"
- Potato weight will be `` `(rand() % 1000) + 1` ``, which is an integer between 1 and 1000



HW4

Print Sample

```
Potato:
  producer: Tom
  weight: 95
Magical Potato:
  producer: Jane
  weight: 995
  effect: slowness
Potato Ball:
  producer: Tom
  weight: 95
Magical Potato Ball:
  producer: Jane
  weight: 995
  effect: slowness
```

Function in struct

```
1   struct test {
2     void (*test_function)();
3   };
4
5   void this_is_test() {
6     printf("Hello world");
7   }
8
9   // ...
10  test->test_function = this_is_test;
```

Using .h files

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include "potato.h"
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- To prvent muti declaration

Using .h files

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#include <stdio.h>
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```

- To prvent muti declaration

```
// some_header_file.h
#ifndef SOME_HEADER_FILE_H
#define SOME_HEADER_FILE_H
// your code
#endif
```

Thanks for listening
Any Questions?