



WHILE WAITING:

Download **Inheritance**
from the lab page of the
CS50 website!

duck of the week - 'fire duck'

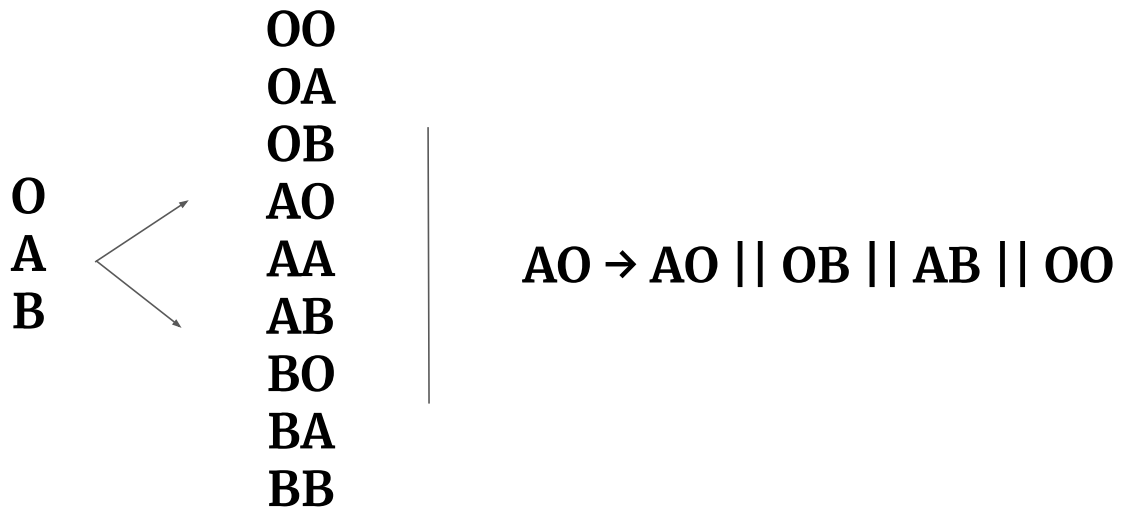
CS50 Week 5 Lab

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Notes From Pset 4

- Deep breath!
- Inline Comments (don't feel overwhelmed)
- Staff Solutions (releases after grades)
- **Read the spec, watch walkthrough!
- Blur...

Lab 5: Inheritance



```
// Each person has two parents and two alleles
typedef struct person
{
    struct person *parents[2];
    char alleles[2];
}
person;
```

```
// TODO: Allocate memory for new person
```

- We allocate memory to pointers, such that when we store data at that memory, the pointer tells us where to look to access that data
- We allocate memory using malloc. The sizeof function may be useful.

```
// TODO: Set parent pointers for current person
```

- Recall that we can use arrows to go to an address and look inside a struct.
- What type are parent0 and parent1 defined above?
- What type are parents in the person struct?

```
// TODO: Randomly assign current person's alleles based on the  
alleles of their parents
```

- Recall how we access the allele value within the person struct.
- How can we access the alleles of the parent?
- Hint from specification: `rand() % 2` gets you 0 or 1

```
// TODO: Set parent pointers to NULL
```

```
// TODO: Randomly assign alleles
```

```
// TODO: Return newly created person
```

```
// TODO: Handle base case
```

- What is p if it has no memory assigned to it?

```
// TODO: Free parents recursively  
// TODO: Free child
```

- If this is a recursive function, how do we call it within itself?
- Note that the function takes in a person pointer as an argument. You'll have to include arguments when you call the function recursively – how might you get those arguments?

If up for a challenge, you can try ‘Tries’.

```
wget https://cdn.cs50.net/2022/fall/labs/5/trie.zip
```

(but not in lab today)

From here...

Hash Tables

Blur


```
typedef struct node
{
    char word[LONGEST_WORD + 1];
    struct node *next;
}
node;

node *hash_table[NUMBER_OF_BUCKETS];
```

tinyurl.com/gabecs50feedback