ECS 36B
Review Session

- Memory
- JSONCPP
- Final Project Presentation

Pointer & Reference

- **Pointers:** Pointers store address of variables or a memory location.

```
int i = 3;
int *ptr = &i;
```

- **References** : When a variable is declared as a reference, it becomes an alternative name for an existing variable.

```
int &ref = i;
```

Dynamic Memory

- **The stack** − All variables declared inside the function will take up memory from the stack.

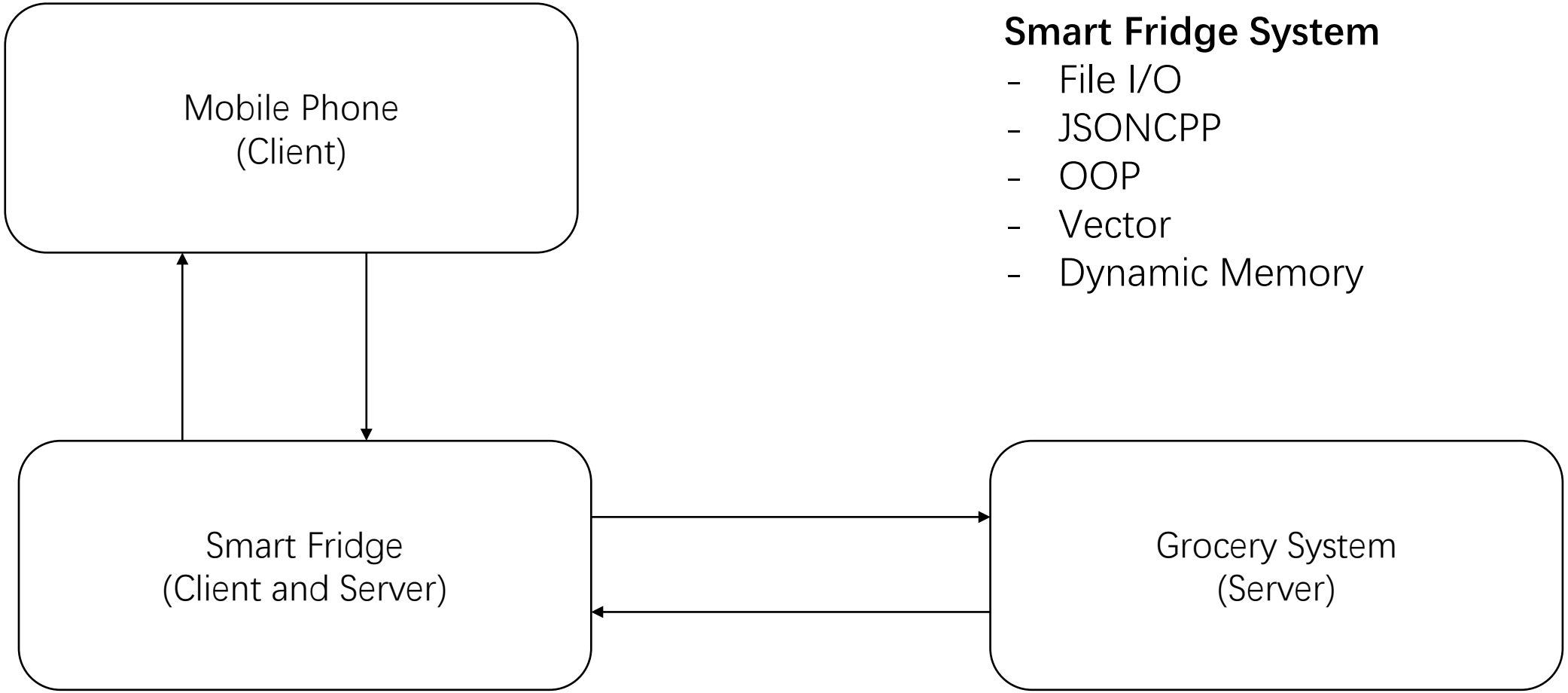
```
int stack_int = 1;
```

- **The heap** − This is unused memory of the program and can be used to allocate the memory dynamically when program runs.

```
int *heap_int = new int(1);
```

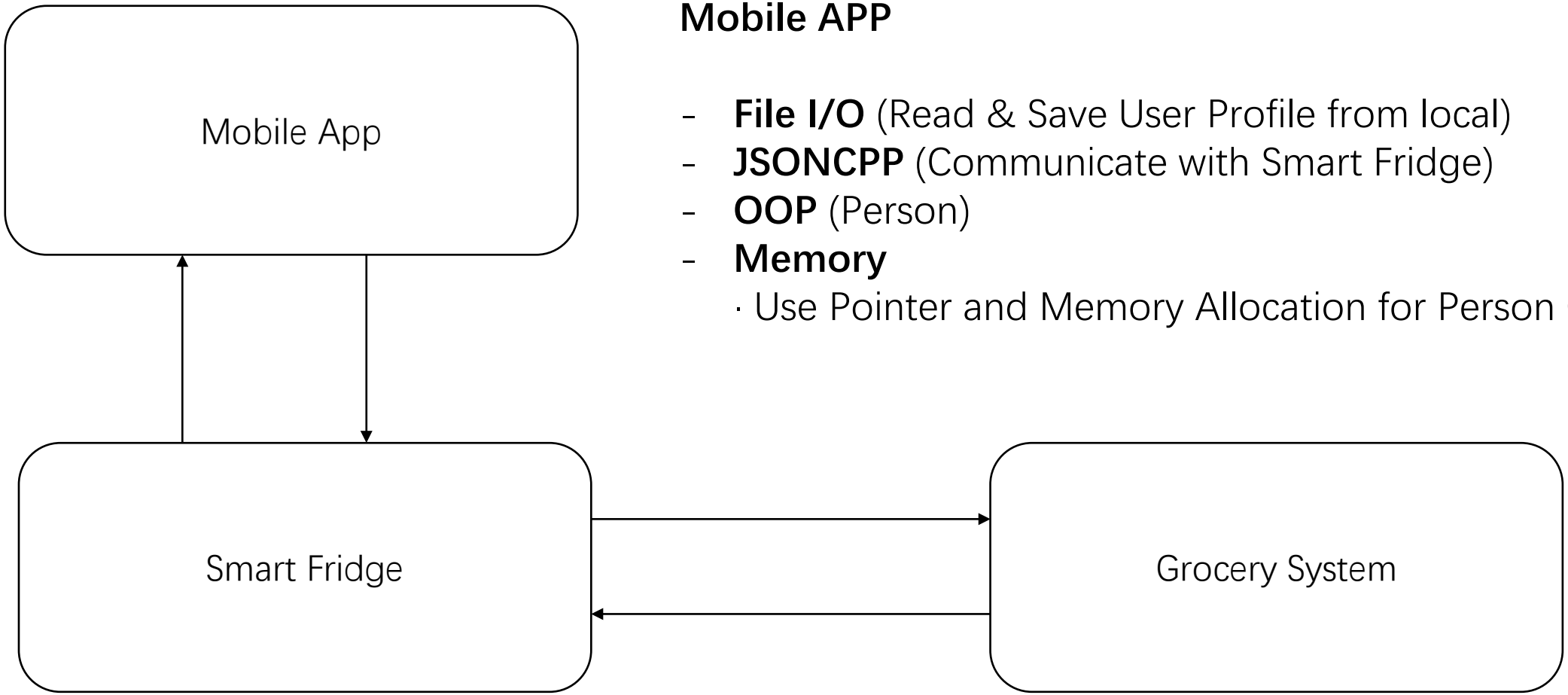
2020 Fall ECS 36B Final Project

Smart Fridge and Grocery System



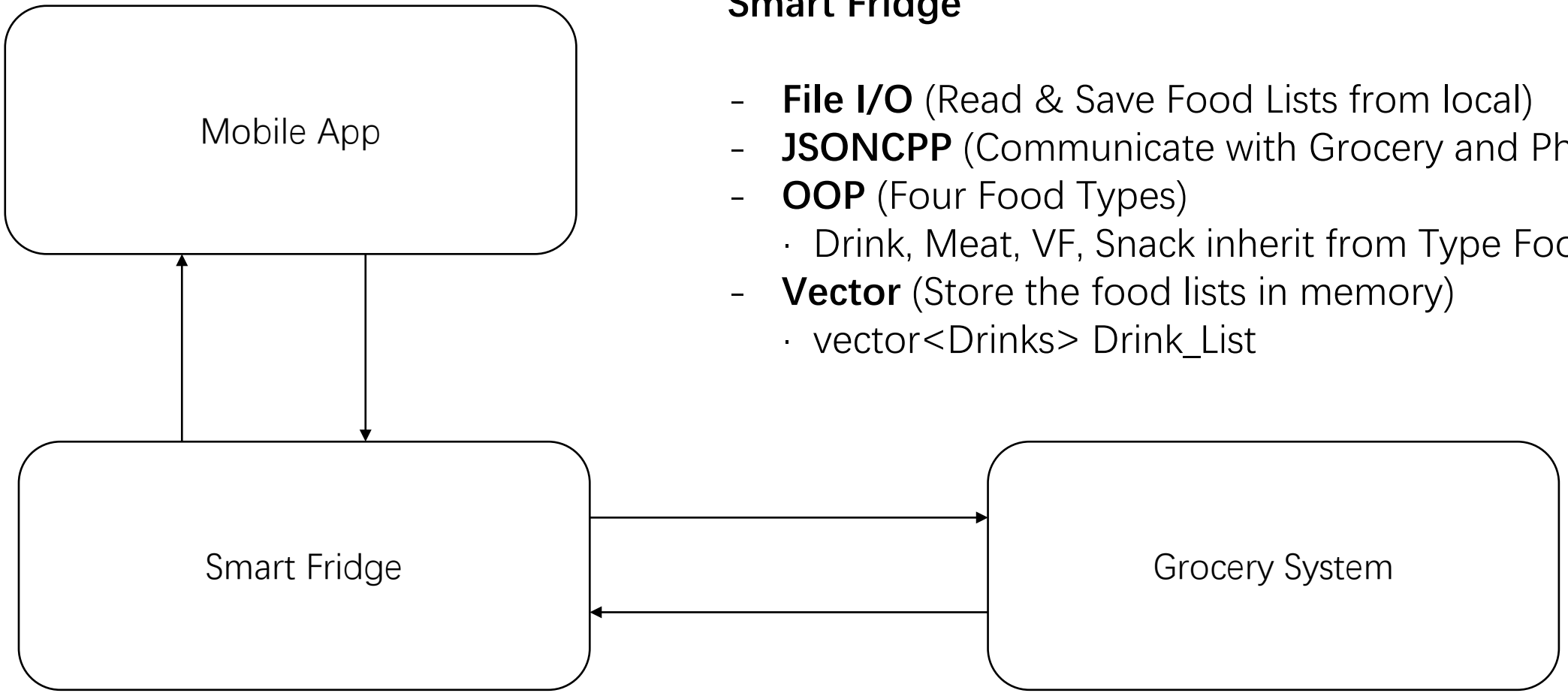
Smart Fridge System

- File I/O
- JSONCPP
- OOP
- Vector
- Dynamic Memory



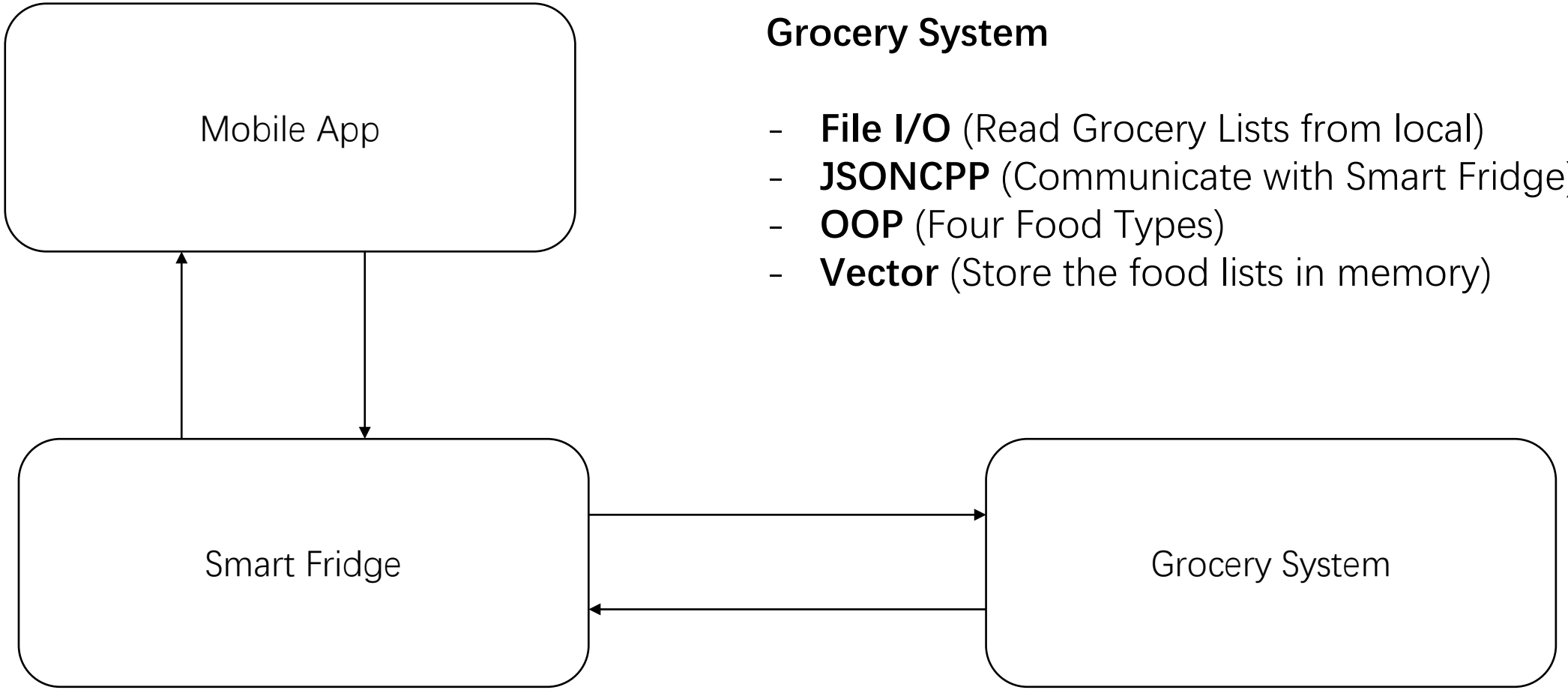
Mobile APP

- **File I/O** (Read & Save User Profile from local)
- **JSONCPP** (Communicate with Smart Fridge)
- **OOP** (Person)
- **Memory**
  · Use Pointer and Memory Allocation for Person Object



Smart Fridge

- **File I/O** (Read & Save Food Lists from local)
- **JSONCPP** (Communicate with Grocery and Phone)
- **OOP** (Four Food Types)
  - Drink, Meat, VF, Snack inherit from Type Food
- **Vector** (Store the food lists in memory)
  - vector<Drinks> Drink_List



Grocery System

- **File I/O** (Read Grocery Lists from local)
- **JSONCPP** (Communicate with Smart Fridge)
- **OOP** (Four Food Types)
- **Vector** (Store the food lists in memory)

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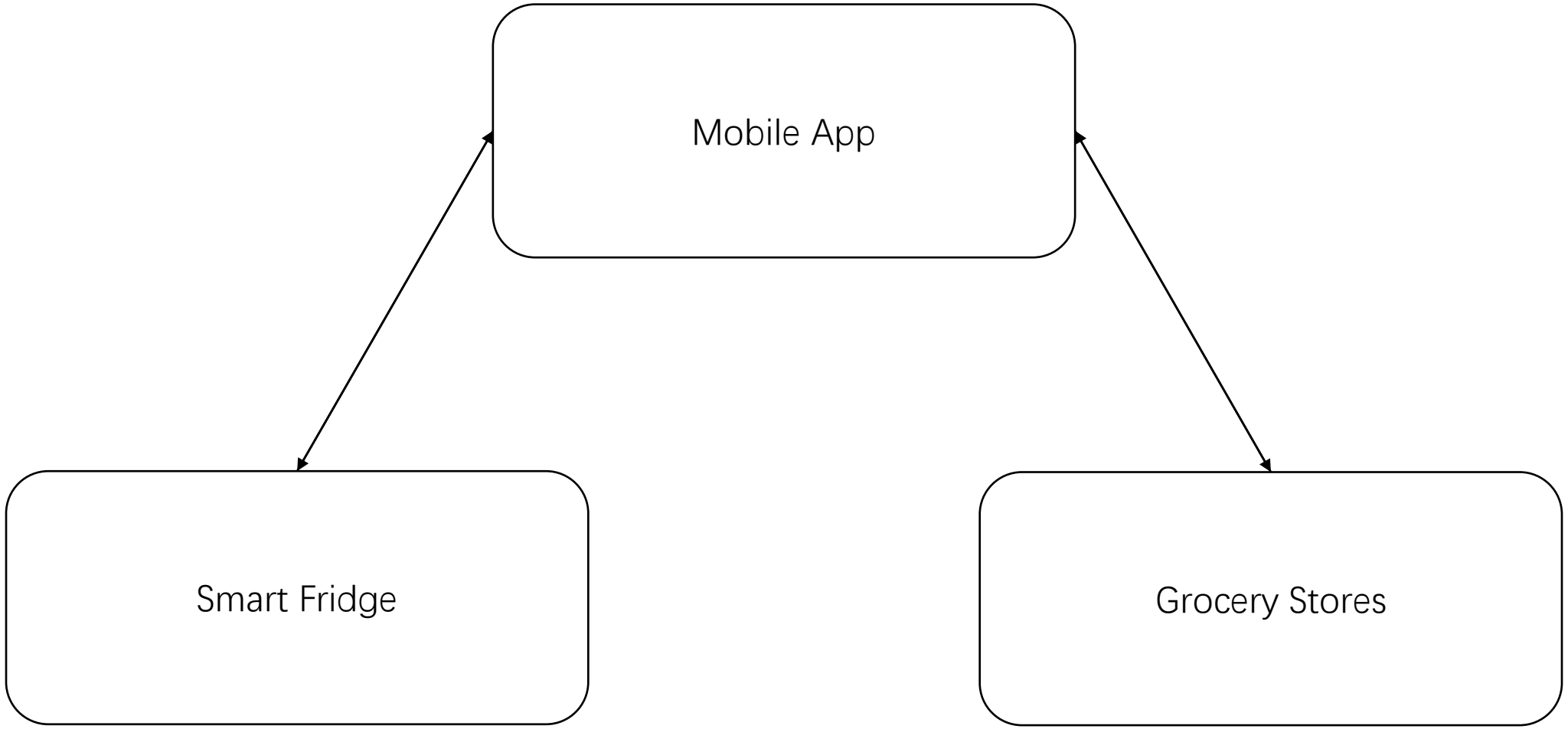
Internet-less System

When interact with Smart Fridge, get the eating record
When interact with Grocery, send the eating record



Use image recognition to record what the user get from fridge

Send Coupons to User based on the data in Mobile App