Week 4 tutorial

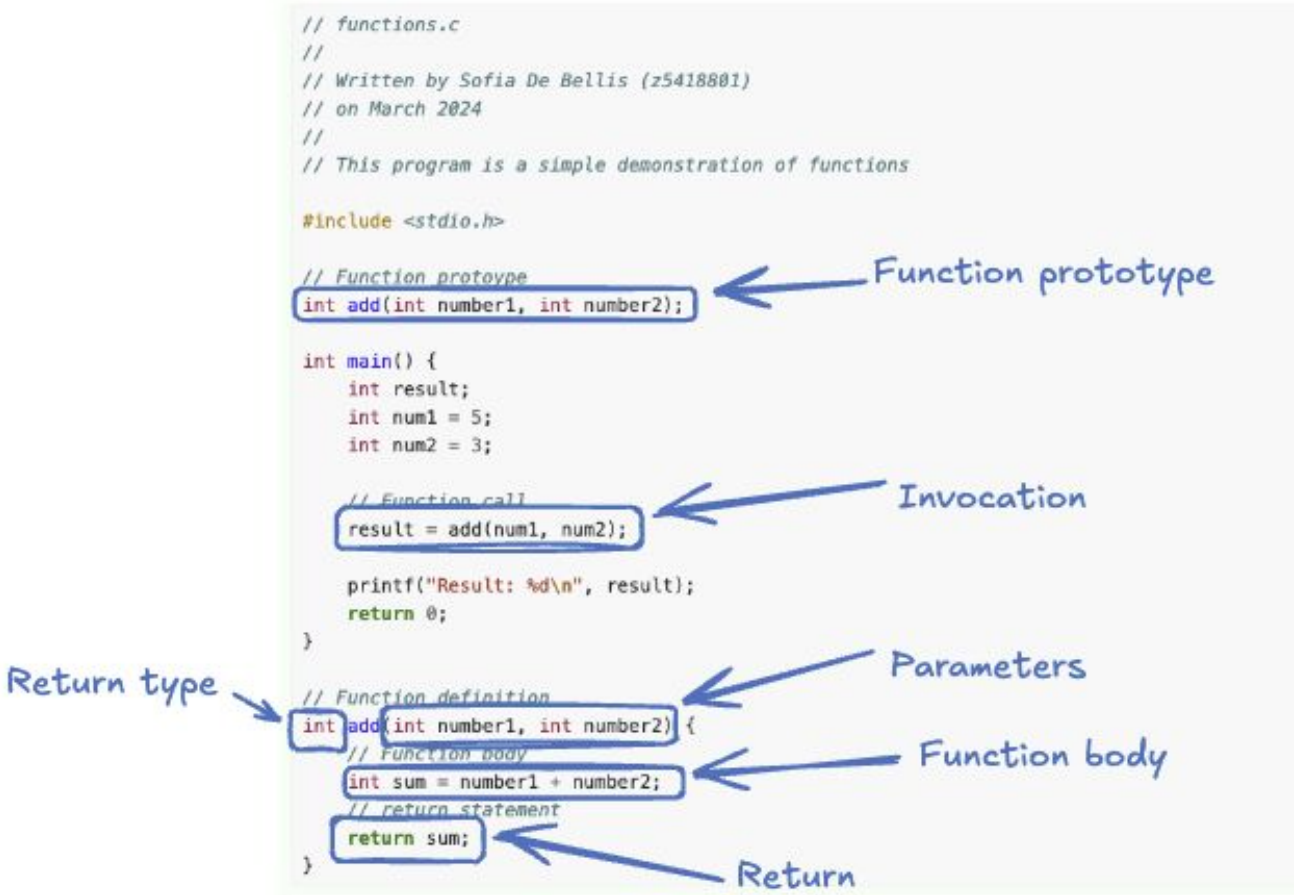
- Functions
- Style

Function

```
return_type function_name(parameters) {
    // function body

    return value;
}
```

Cha


// functions.c
//
// Written by Sofia De Bellis (z5418801)
// on March 2024
//
// This program is a simple demonstration of functions
#include <stdio.h>
// Function prototype
int add(int number1, int number2);
int main() {
int result;
int num1 = 5;
int num2 = 3;
// Function call
result = add(num1, num2);
printf("Result: %d\n", result);
return 0;
}
// Function definition
int add(int number1, int number2) {
// Function body
int sum = number1 + number2;
// return statement
return sum;
}
Function prototype
Invocation
Parameters
Return type
Function body
Return

What if we don’t have any parameters ?

```
2
3 // function prototype
4 void print();
```

What is a life cycle in the code

You turn!

Your turn! (20 mins)

We have been provided a program which simulates a bubble tea shop and is very similar to last weeks coffee shop activity. All the code for the program is currently in the `main` function and this task involved you working together to refactor the program to use a series of functions.

```
/* return type */ check_stock(/* parameters */);
/* return type */ calculate_cost(/* parameters */);
/* return type */ update_stock(/* parameters */);
/* return type */ print_order(/* parameters */);
/* return type */ print_inventory(/* parameters */);
```

Application of functions

- Printing out values from an array
- Checking inputs from the user are valid (e.g. within a valid range of values)
- Modifying arrays in a specific way (e.g. sorting an array of ints in ascending order)
- Searching for a particular value in a collection such as an array
- Mathematical operations which require multiple lines of code
- Handling and printing error messages
- Memory allocation and value initialisation for a data structure (this will be addressed later in the term)

Style – Kahoot

Summary

For variables:

- Should only have a-z A-Z, digits 0-9, and underscore _
- Not start with digits
- Can’t use the key name in C like return, int…..
- Should be descriptive

For constants:

- Should be in uppercase