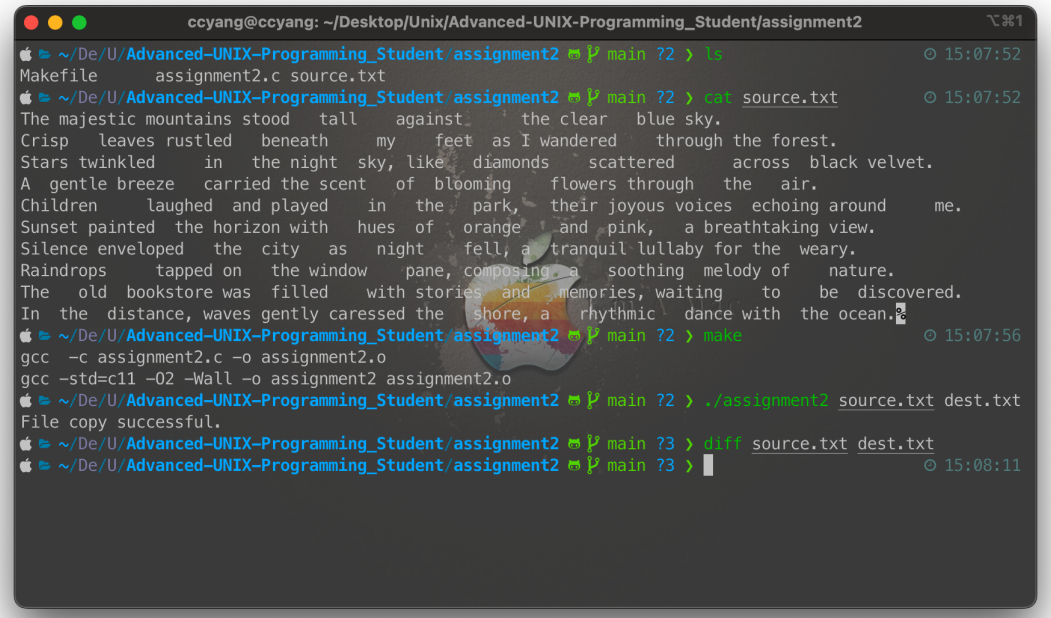
Unix Assignment2

Team19 108072244 邱煒甯 108032053 陳凱揚 112065525 簡佩如

Implementation

(1) (3 pt) Implement your own cp(1) which can copy the file correctly.



Result

(2) (1 pt) Describe your implementation in your report.

1. Our program, `assignment2.c`, first checks if the number of input parameters provided is correct. If it is correct, the program proceeds with the subsequent copying operation.

```
32  int main(int argc, char *argv[]) {
33      // Check the number of paramter
34      if (argc != 3) {
35          printf("Error: This program requires exactly 2 parameters.\n");
36          return 1;
37      }
38
39      // Copy the file from argv[1] to argv[2]
40      copyFile(argv[1], argv[2]);
41
42      return 0;
43  }
```

2. Next, we use `fopen` to perform the file copying. We open the source file in binary read mode using `"rb"`, and then open the destination file in binary write mode using `"wb"`. This part is from line 5 to line 17.

   Then, we copy the content character by character from the source file to the destination file. The specific method involves using the `fgetc` and `fputc` functions. This part is from line 19 to line 23.

   Finally, we use `fclose` to complete the task of copying the file. This part is from line 26 to line 27."

```c
void copyFile(const char *source_filename, const char *dest_filename) {
    // Open the source file in binary read mode
    FILE *source_file = fopen(source_filename, "rb");
    if (source_file == NULL) {
        printf("Error opening source file.\n");
        return;
    }

    // Open the dest file in binary write mode
    FILE *dest_file = fopen(dest_filename, "wb");
    if (dest_file == NULL) {
        printf("Error opening dest file.\n");
        fclose(source_file);
        return;
    }

    // Copy content character by character
    char ch;
    while ((ch = fgetc(source_file)) != EOF) {
        fputc(ch, dest_file);
    }

    // Close the files
    fclose(source_file);
    fclose(dest_file);

    printf("File copy successful.\n");
}
```