Workshop 5 – Help Sheet

1) Advanced File Operations

1. Use `fopen` function to open file.
   ```
   FILE *filestream = fopen("data.txt","r");
   ```

2. Initialise a 2D character array for 3 lines(3 rows, 80 columns).
   ```
   char line[3][80];
   ```

3. Use for loop running three times and executing fgets function to store data in each line.
   ```
   fgets(line[i], 80, filestream); //inside loop
   ```

4. Again use loop for printing the output.

Here is a sample program to print only one line from data file.

```
#include <stdio.h>


int main() {
FILE* filestream = fopen("data.txt","r"); // open file
if(!filestream)
      printf("File open error");
else
{
      char c[100]={'\0'};
      fgets(c,100,filestream);
      puts(c);
      fclose(filestream); // close file
}
getchar(); // wait for user key press
}
```

2) Dynamic memory allocation and pointers

1. Initialise two pointers of character type.
   `char *input, *copy;`

2. Reserve a chunk of 100 characters for input.
   `input = malloc(100*sizeof(char));`

3. Take input in pointer variable `input` using scanf.

4. Use `malloc` again for `copy` but this time reserve a chunk of memory equivalent to length of input + 1. (+1 for null character \0).
   Hint: Use `strlen(input) + 1`

5. Print the ouput as required in exercise.