CSI 402 – Systems Programming

Illustrating the use of `fseek`, `ftell` and `rewind`

Handout 2.1

The following program uses the functions `fseek`, `ftell` and `rewind` to move around in an input file specified by the command line argument `argv[1]`.

```
/* To illustrate the use of fseek and ftell */

#include <stdio.h>
#include <stdlib.h>
int main(int argc, char *argv[]) {
  FILE *ifp;   /* Input file pointer. */
  long pos;    /* To obtain positions using ftell. */
  int  c;      /* To read characters from input file. */

  /* The number of parameters should be 2 and the only argument following */
  /* the name of the program is the name of the input file.               */
  if (argc != 2) {
     fprintf(stderr, "Usage: ftest  file\n"); exit(1);
  }

  /* Open the input file. */
  if ((ifp = fopen(argv[1], "r")) == NULL) {
     fprintf(stderr, "Could not open file: %s\n", argv[1]); exit(1);
  }

  c = fgetc(ifp);
  printf("%c\n", c);  /* Print the first character (offset = 0) in file. */

  /* In the following, for simplicity, we don't do any error checks. */

  fseek(ifp, 5L, SEEK_SET);
  c = fgetc(ifp);
  printf("%c\n", c);  /* Print the character with offset = 5 from the beginning. */
  pos = ftell(ifp);
  printf("%ld\n", pos); /* Print the file offset. */

  fseek(ifp, 3L, SEEK_CUR); /* Go to the character whose offset is 3 plus   */
  c = fgetc(ifp);           /* the current offset, read that character and  */
  printf("%c\n", c);        /* print it.                                    */
  pos = ftell(ifp); printf("%ld\n", pos);  /* Also print offset. */
```

(**over**)

```
  fseek(ifp, -4L, SEEK_CUR); /* Go to the character whose offset is 4 less */
  c = fgetc(ifp);            /* than the current position, read that       */
  printf("%c\n", c);         /* character and print it.                    */
  pos = ftell(ifp); printf("%ld\n", pos);

  fseek(ifp, -5L, SEEK_END); /* Go to the character whose offset is 5 less */
  c = fgetc(ifp);            /* than the end of file, read that            */
  printf("%c\n", c);         /* character and print it.                    */
  pos = ftell(ifp); printf("%ld\n", pos);

  /* Get to the beginning of the file. */

  rewind(ifp);
  c = fgetc(ifp);            /* Read the character at offset = 0  */
  printf("%c\n", c);         /* and print it.             */
  pos = ftell(ifp);
  printf("%ld\n", pos);

  /* Close the input file. */

  if (fclose(ifp) == EOF) {
     fprintf(stderr, "Could not close file: %s\n", argv[1]);
  }
  return 0;
} /* End of main. */
```

Input: `abcdefghijklmno\n`

Output:

```
a
f
6
j
10
g
7
l
12
a
1
```