Experiment-25:Construct a C program to implement the I/O system calls of UNIX (fcntl, seek, stat, opendir, readdir)

Aim:
To demonstrate the use of UNIX I/O system calls, including fcntl, seek, stat, opendir, and readdir for file and directory management.

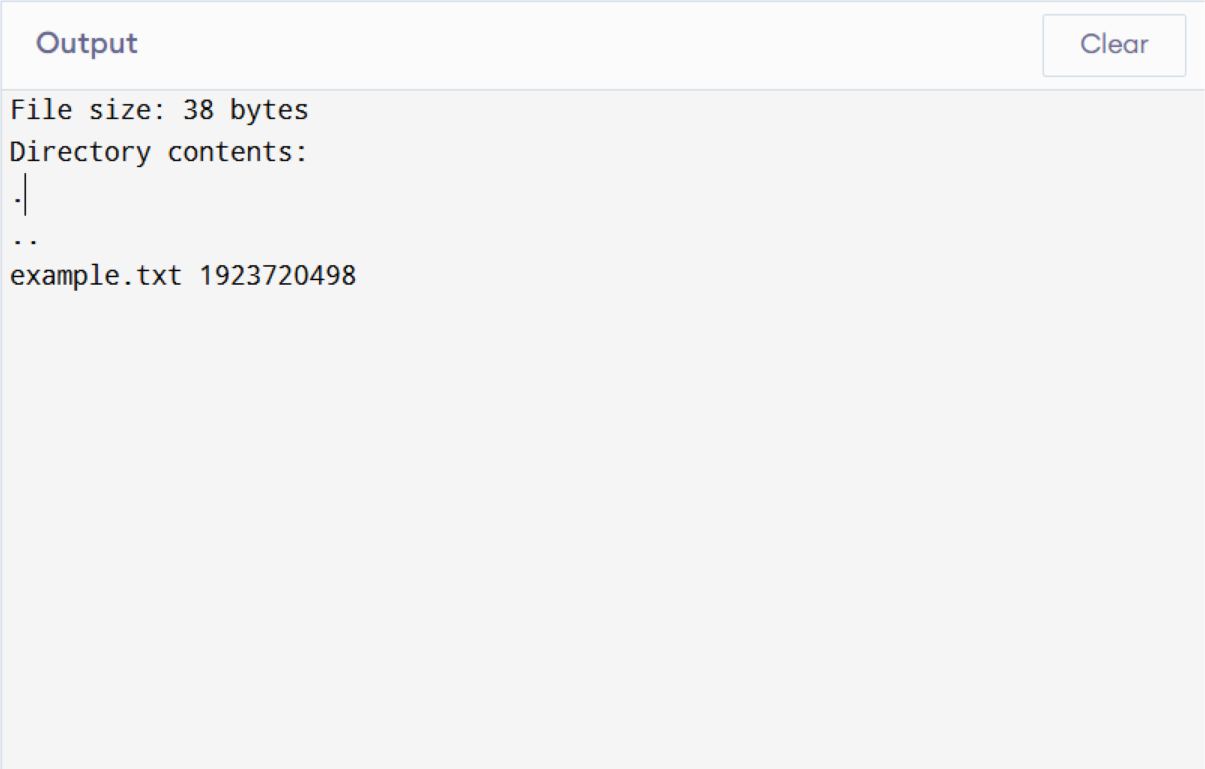
Procedure:

1. fcntl: Use the fcntl system call to manipulate the file descriptor.
2. seek: Use the lseek system call to move the file pointer to a specific location.
3. stat: Use the stat system call to retrieve information about a file.
4. opendir: Use the opendir system call to open a directory.
5. readdir: Use the readdir system call to read directory entries.

C Code:

```
#include <stdio.h>
#include <fcntl.h>
#include <unistd.h>
#include <sys/stat.h>
#include <dirent.h>

int main() {
    int fd;
    struct stat fileStat;
    DIR *dir;
    struct dirent *entry;

    fd = open("example.txt", O_CREAT | O_WRONLY, 0644);
    if (fd == -1) {
        perror("Error opening file");
        return 1;
    }

    fcntl(fd, F_SETFL, O_APPEND);
    write(fd, "Hello, UNIX system calls!", 25);

    lseek(fd, 0, SEEK_SET);
    write(fd, "Start of file", 13);

    close(fd);

    stat("example.txt", &fileStat);
    printf("File size: %ld bytes\n", fileStat.st_size);

    dir = opendir(".");
    if (dir == NULL) {
        perror("Error opening directory");
        return 1;
    }

    printf("Directory contents:\n");
    while ((entry = readdir(dir)) != NULL) {
        printf("%s\n", entry->d_name);
    }

    closedir(dir);

    return 0;
}
```

Output:



```
File size: 38 bytes
Directory contents:
.
..
example.txt 1923720498
```