

Aim: Program to show stat function call on any program.

Description: Here we call the stat function call with reference to path of a file and using a stat structure. All stat information are obtained through this structure.

Program:

```
#include<stdio.h>
#include<sys/types.h>
#include<sys/stat.h>
#include<unistd.h>
#include<stdlib.h>
#include<sys/sysmacros.h>
#include<time.h>
int main(){
    char x[] = "/home/student/Downloads/osweek5.pdf";
    const char *path= x;
    struct stat sb;
    int k=stat(path,&sb);
    if(k==0){
        printf("ID of device containing the file : %lx \n", (long) major(sb.st_dev));
        printf("File type:          ");
        switch (sb.st_mode & S_IFMT) {
            case S_IFBLK: printf("block device\n");      break;
            case S_IFCHR: printf("character device\n");   break;
            case S_IFDIR: printf("directory\n");          break;
            case S_IFIFO: printf("FIFO/pipe\n");          break;
            case S_IFLNK: printf("symlink\n");            break;
            case S_IFREG: printf("regular file\n");        break;
            case S_IFSOCK: printf("socket\n");            break;
            default:      printf("unknown?\n");            break;
        }

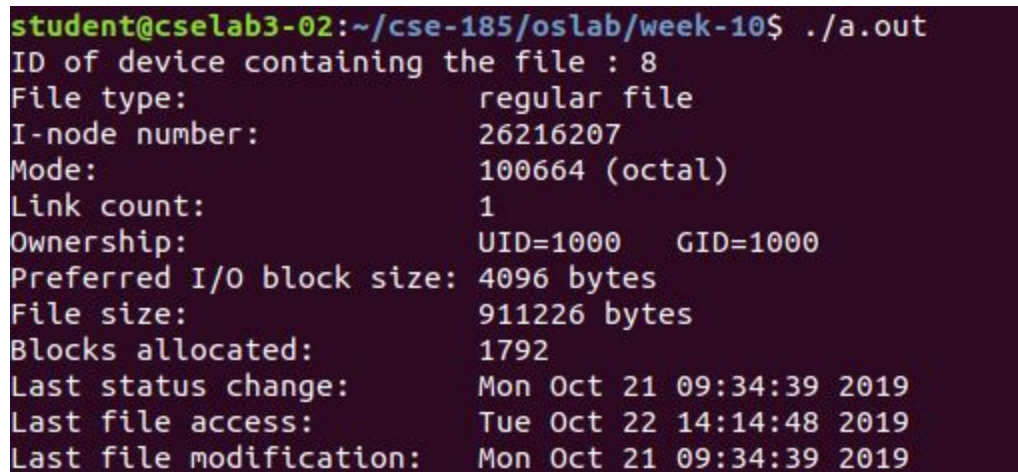
        printf("I-node number:          %ld\n", (long) sb.st_ino);

        printf("Mode:                  %lo (octal)\n",
            (unsigned long) sb.st_mode);
    }
```

```
printf("Link count:          %ld\n", (long) sb.st_nlink);
printf("Ownership:          UID=%ld  GID=%ld\n",
      (long) sb.st_uid, (long) sb.st_gid);

printf("Preferred I/O block size: %ld bytes\n",
      (long) sb.st_blksize);
printf("File size:          %lld bytes\n",
      (long long) sb.st_size);
printf("Blocks allocated:    %lld\n",
      (long long) sb.st_blocks);

printf("Last status change:   %s", ctime(&sb.st_ctime));
printf("Last file access:    %s", ctime(&sb.st_atime));
printf("Last file modification: %s", ctime(&sb.st_mtime));
}else{
    perror("stat");
    printf("Errorr");
    exit(EXIT_FAILURE);
}
return 0;
}
```

OUTPUT:

```
student@cse3lab3-02:~/cse-185/oslab/week-10$ ./a.out
ID of device containing the file : 8
File type:          regular file
I-node number:      26216207
Mode:              100664 (octal)
Link count:         1
Ownership:          UID=1000  GID=1000
Preferred I/O block size: 4096 bytes
File size:          911226 bytes
Blocks allocated:    1792
Last status change: Mon Oct 21 09:34:39 2019
Last file access:   Tue Oct 22 14:14:48 2019
Last file modification: Mon Oct 21 09:34:39 2019
```

References:

<https://stackoverflow.com/questions/31449688/what-is-s-ifmt-in-unix-system-programming>

Random info i got while searching:

Man 2 - 2 is for section specification

S_IFMT is a bit mask for file type (see `man stat`)