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

Description: Here we call the stat function call with refernece 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("Erorr");
         exit(EXIT_FAILURE);

    }
    return 0;
}
```

OUTPUT:

```
student@cselab3-02:~/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)