

OPERATING SYSTEMS LAB

Practical-2

NAME: VEDANT BHUTADA

ROLL NO: 69

BATCH: A4

Aim: Write a C program to simulate Directory management system calls of Linux

- a) Create directory (mkdir comand)**
- b) List the number of files in current directory(ls command)**
- c) Navigate the directory (cd command)**
- d) Remove directory (rmdir command)**

CODE:

```
#include<stdio.h>
#include<errno.h>
#include<stdlib.h>
#include<fcntl.h>
#include<sys/stat.h>
#include<sys/types.h>
#include<stdbool.h>
#include<unistd.h>
#include<dirent.h>

int cmd_cd(char *path){
    return chdir(path)!=0;
}

void cmd_cwd(){
    char path[512];
    char *p = getcwd(path,sizeof(path));
    printf("%s\n",p);
}

int main(int argc,char *argv[]){
    int f;
```

```

char fname[100],buffer[100],cwd[1024];
DIR *p;
struct dirent *d;
int choice,ved;
char *path;
while(true){
printf("Enter 1 to create directory\nEnter 2 to change directory\nEnter 3 to remove
directory\nEnter 4 to list the directory and files\nEnter 5 to print your working directory\n");
printf("Enter your choice: ");
scanf("%d",&choice);
switch(choice){
case 1:
printf("Enter the name of directory: ");
scanf("%s",fname);
f = mkdir(fname,0777);
if(f== -1){
printf("Cannot create directory\n");
break;
}
else{
printf("Directory created with directory name %s\n",fname);
}
break;
case 2:
printf("Enter name of directory: ");
scanf("%s",buffer);
if(chdir(buffer)== -1){
printf("Error: Failed to change directory\n");
break;
}
else{
printf("Changed to directory %s\n",buffer);
}
break;
case 3:
printf("Enter name of directory to remove: ");
scanf("%s",fname);
f=rmdir(fname);
if(f== -1){
printf("Cannot remove directory\n");
break;
}
printf("Directory removed with name %s\n",fname);
break;
case 4:
if(getcwd(cwd,sizeof(cwd)) != NULL){
fprintf(stdout,"Current working dir: %s\n",cwd);
}
else{
perror("getcwd() error\n");
}
}
}

```

```

    p = opendir(cwd);
    if(p==NULL){
        perror("Cannot find directory\n");
        break;
    }
    while(d=readdir(p)){
        printf("%s\n",d->d_name);
    }
    break;
case 5:
    if(getcwd(cwd,sizeof(cwd)) != NULL){
        printf("Current Working Directory: %s\n",cwd);
        break;
    }
    else{
        perror("getcwd() error\n");
        break;
    }
}
printf("Do you want to continue (Y 1/N 0): ");
scanf("%d",&ved);
if(ved == 0){
    break;
}
printf("\n");
}
return 0;
}

```

OUTPUT:Create and Remove operations

```

vedant08@vedant-ubuntu:~/os$ gcc osprac2.c
vedant08@vedant-ubuntu:~/os$ ./a.out
Enter 1 to create directory
Enter 2 to change directory
Enter 3 to remove directory
Enter 4 to list the directory and files
Enter 5 to print your working directory
Enter your choice: 1
Enter the name of directory: ved_directory
Directory created with directory name ved_directory
Do you want to continue (Y 1/N 0): 1

Enter 1 to create directory
Enter 2 to change directory
Enter 3 to remove directory
Enter 4 to list the directory and files
Enter 5 to print your working directory
Enter your choice: 3
Enter name of directory to remove: ved_directory
Directory removed with name ved_directory
Do you want to continue (Y 1/N 0): 0
vedant08@vedant-ubuntu:~/os$ ls
a.out  neww  osprac2.c

```

Create, Change and Listing operations

```
vedant08@vedant-ubuntu:~/os$ gcc osprac2.c
vedant08@vedant-ubuntu:~/os$ ./a.out
Enter 1 to create directory
Enter 2 to change directory
Enter 3 to remove directory
Enter 4 to list the directory and files
Enter 5 to print your working directory
Enter your choice: 1
Enter the name of directory: ved_directory
Directory created with directory name ved_directory
Do you want to continue (Y 1/N 0): 1

Enter 1 to create directory
Enter 2 to change directory
Enter 3 to remove directory
Enter 4 to list the directory and files
Enter 5 to print your working directory
Enter your choice: 2
Enter name of directory: ved_directory
Changed to directory ved_directory
Do you want to continue (Y 1/N 0): 1

Enter 1 to create directory
Enter 2 to change directory
Enter 3 to remove directory
Enter 4 to list the directory and files
Enter 5 to print your working directory
Enter your choice: 4
Current working dir: /home/vedant08/os/ved_directory
..
.
Do you want to continue (Y 1/N 0): 1

Enter 1 to create directory
Enter 2 to change directory
Enter 3 to remove directory
Enter 4 to list the directory and files
Enter 5 to print your working directory
Enter your choice: 5
Current Working Directory: /home/vedant08/os/ved_directory
Do you want to continue (Y 1/N 0): 0
vedant08@vedant-ubuntu:~/os$
```

RESULT: Directory management system calls of Linux has been studied and C programs on them has been implemented.