UNIX BASICS [LAB-1]
Documentation

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Unix command used:

```
1. vim filename.c (To create or edit file)
2. cc filename.c (to compile the code)
3. ./a.out (to execute the code)
4. mkdir (to create new directory)
5. cd (to change the path)
6. ls (to list)
```

How to use:

```
     Define:
       1. >  is terminal command
       2. // are following steps
       3. "" Is Terminal command
```

```
> Vim filename.c
//tap i to insert
//Write the code
//Press esc
//Write ":wq!" To save and quit
> cc filename.c
> ./a.out
```

```
You'll get the result
```

1. Write a simple C program to display the message "Hello There!".

Program in Vim:

```
#include<stdio.h>
int main()
{
// PROJECT 1
    printf("Hello There!");
}
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~
~
~
~
:wq!
```

Unix Command:

```
Ayushs-MacBook-Air:Assigment iosdeveloper$ vim project1.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ ls
project1.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ mkdir Project2
Ayushs-MacBook-Air:Assigment iosdeveloper$ vim project2.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ mv project2.c ./project2.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ ls
Project 1        Project2         project2.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ mv project2.c ./Project2
Ayushs-MacBook-Air:Assigment iosdeveloper$ cd Project2
Ayushs-MacBook-Air:Project2 iosdeveloper$ ls
project2.c
Ayushs-MacBook-Air:Project2 iosdeveloper$ cc project2.c
Ayushs-MacBook-Air:Project2 iosdeveloper$ ls
a.out            project2.c
Ayushs-MacBook-Air:Project2 iosdeveloper$ ./a.out
enter a number:12345
entered number is:12345 Ayushs-MacBook-Air:Project2 iosdeveloper$
```

2. Write a C program to read and display n numbers.

Program in Vim:

```
#include<stdio.h>
int main(){
int number;
printf("enter a number:");
scanf("%d",&number);
printf("entered number is:%d ",number);
return 0;
}
~
~
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~
~
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~
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~
~
~
~
~
~
:wq!
```

Unix Command:

```
Ayushs-MacBook-Air:Assigment iosdeveloper$ mkdir Project2
Ayushs-MacBook-Air:Assigment iosdeveloper$ vim project2.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ mv project2.c ./project2.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ ls
Project 1        Project2        project2.c
Ayushs-MacBook-Air:Assigment iosdeveloper$ mv project2.c ./Project2
Ayushs-MacBook-Air:Assigment iosdeveloper$ cd Project2
Ayushs-MacBook-Air:Project2 iosdeveloper$ ls
project2.c
Ayushs-MacBook-Air:Project2 iosdeveloper$ cc project2.c
Ayushs-MacBook-Air:Project2 iosdeveloper$ ls
a.out            project2.c
Ayushs-MacBook-Air:Project2 iosdeveloper$ ./a.out
enter a number:12345
entered number is:12345 Ayushs-MacBook-Air:Project2 iosdeveloper$
```

3. Write a C program to sort n numbers using any sorting algorithm.

Program in Vim:

```c
#include <stdio.h>

int main()
{
    int array[100];
    int i, j, num, temp;

    printf("Enter the value of num \n");
    scanf("%d", &num);
    printf("Enter the elements one by one \n");
    for (i = 0; i < num; i++)
    {
        scanf("%d", &array[i]);
    }
    printf("Input array is \n");
    for (i = 0; i < num; i++)
    {
        printf("%d\n", array[i]);
    }
    for (i = 0; i < num; i++)
    {
        for (j = 0; j < (num - i - 1); j++)
        {
            if (array[j] > array[j + 1])
            {
                temp = array[j];
                array[j] = array[j + 1];
                array[j + 1] = temp;
            }
        }
    }
    printf("Sorted array is...\n");
    for (i = 0; i < num; i++)
    {
        printf("%d\n", array[i]);
    }
}
```

Unix Command:

```
Ayushs-MacBook-Air:Assigment iosdeveloper$ mkdir Project3
Ayushs-MacBook-Air:Assigment iosdeveloper$ cd Project3
Ayushs-MacBook-Air:Project3 iosdeveloper$ vim project3.c
Ayushs-MacBook-Air:Project3 iosdeveloper$ cc project3.c
Ayushs-MacBook-Air:Project3 iosdeveloper$ ls
a.out           project3.c
Ayushs-MacBook-Air:Project3 iosdeveloper$ ./a.out
Enter the value of num
4
Enter the elements one by one
8 4 2 7
Input array is
8
4
2
7
Sorted array is...
2
4
7
8
Ayushs-MacBook-Air:Project3 iosdeveloper$
```

4. Write a C program to search a number in the array.

Program in Vim:

```
#include <stdio.h>

int main()
{

    int arr[100], search, n, i;
    printf("Please enter how many elements should be available in an array\n");
    scanf("%d",&n);

    printf("\nPlease enter %d numbers or integers one by one", n);

    for (i = 0; i < n; i++)
        scanf("%d", &arr[i]);

    printf("\nPlease enter the number you want to search");
    scanf("%d", &search);

    for (i = 0; i < n; i++)
    {
        if (arr[i] == search)
        {
            printf("\n%d is present at location %d\n", search, i+1);
            break;
        }
    }
    if (i == n)
        printf("%d is not available in the array.\n", search);
    return 0;
~
~
~
~
~
~
~
~
~
:wq!
```

Unix Command:

```
|Ayushs-MacBook-Air:Project3 iosdeveloper$ cd ..
|Ayushs-MacBook-Air:Assigment iosdeveloper$ mkdir Project4
|Ayushs-MacBook-Air:Assigment iosdeveloper$ cd Project
-bash: cd: Project: No such file or directory
Ayushs-MacBook-Air:Assigment iosdeveloper$ cd Project4
|Ayushs-MacBook-Air:Project4 iosdeveloper$ vim project4.c
Ayushs-MacBook-Air:Project4 iosdeveloper$ cc project4.c
|Ayushs-MacBook-Air:Project4 iosdeveloper$ ./a.out
Please enter how many elements should be available in an array
4

Please enter 4 numbers or integers one by one 7 4 5 9

Please enter the number you want to search 5

5 is present at location 3
Ayushs-MacBook-Air:Project4 iosdeveloper$
```