OPERATING SYSTEM LAB

Name: Thorat Amey Arun Reg No.: 23MCS1004

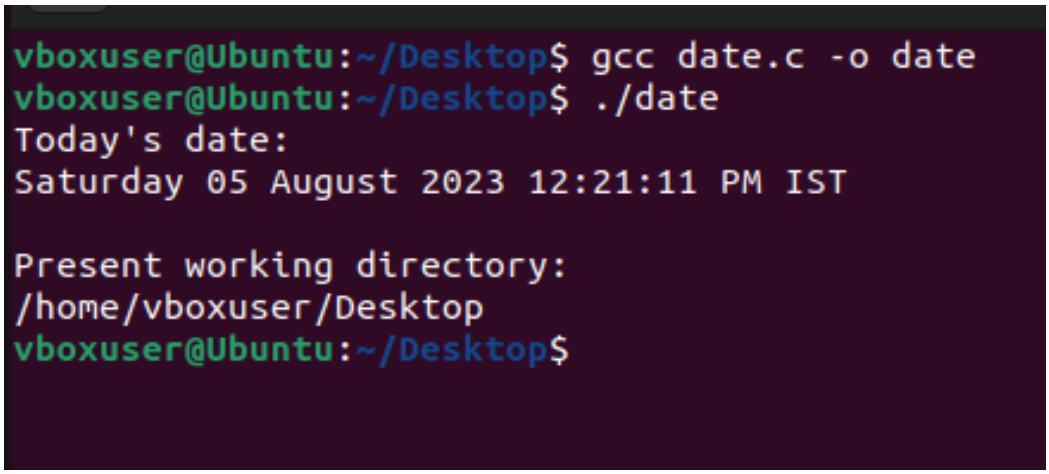
LAB EXPERIMENT 1

1. Develop a C program to display the following using system() library function (through which you can run linux commands from c program)
   (i) today's date
   (ii) present working directory

   Program:

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
   printf("Today's date:\n");
   system("date");
   printf("\nPresent working directory:\n");
   system("pwd");
   return 0;
}
```

   Output:



2. Display the word count of the file using
   1. appropriate linux command

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```
vboxuser@Ubuntu:~/Desktop$ wc -w date.c
16 date.c
vboxuser@Ubuntu:~/Desktop$
```

2. Write a C program to perform the count of words in the file.

Program:

```
#include <stdio.h>
int main() {
    char filename[100];
    printf("Enter the filename: ");
    scanf("%s", filename);
    FILE *file = fopen(filename, "r");
    if (file == NULL) {
        printf("Error opening the file.\n");
        return 1;
    }
    int wordCount = 0;
    char ch;
    while ((ch = fgetc(file)) != EOF) {
        if (ch == ' ' || ch == '\n' || ch == '\t') {
            wordCount++;
        }
    }
    printf("Word count in %s: %d\n", filename, wordCount);
    fclose(file);
    return 0;
}
```

Output:

```
vboxuser@Ubuntu:~/Desktop$ gcc word.c -o word
vboxuser@Ubuntu:~/Desktop$ ./word
Enter the filename:date.c
Word count in date.c:16
vboxuser@Ubuntu:~/Desktop$
```

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3. Write a C program to Read command-line arguments using argc and argv.

Program:

```
#include <stdio.h>
int main(int argc, char *argv[]) {
   printf("Number of arguments: %d\n", argc);
   printf("Arguments:\n");
   for (int i = 0; i < argc; i++) {
      printf("Argument %d: %s\n", i, argv[i]);
   }
   return 0;
}
```

Output:

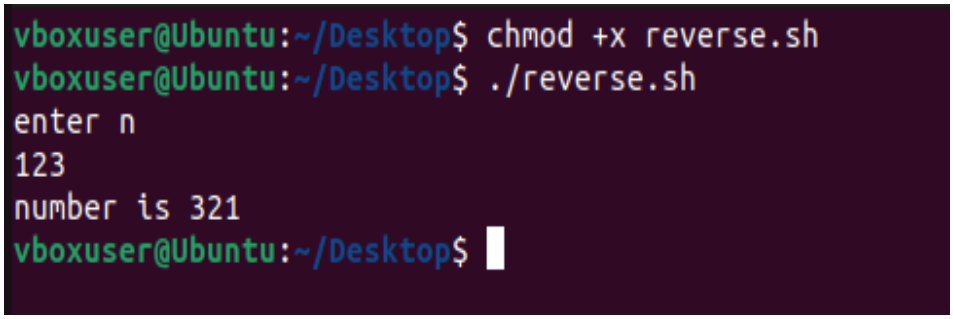
4. Write a shell to reverse a number.

Program:

```
echo enter n
read n
num=0
while [ $n -gt 0 ]
do
num=$(expr $num \* 10)
k=$(expr $n % 10)
num=$(expr $num + $k)
n=$(expr $n / 10)
```

```
done
echo number is $num
```

Output:



5. Write a shell to find the greatest of three numbers.

Program:

```
#shell script to find the greatest of three numbers
echo "Enter Num1"
read num1
echo "Enter Num2"
read num2
echo "Enter Num3"
read num3
if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
then
   echo "the greatest no is: "$num1
elif [ $num2 -gt $num1 ] && [ $num2 -gt $num3 ]
then
   echo "the greatest no is: "$num2
else
   echo "the greatest no is: "$num3
fi
```

Output:

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