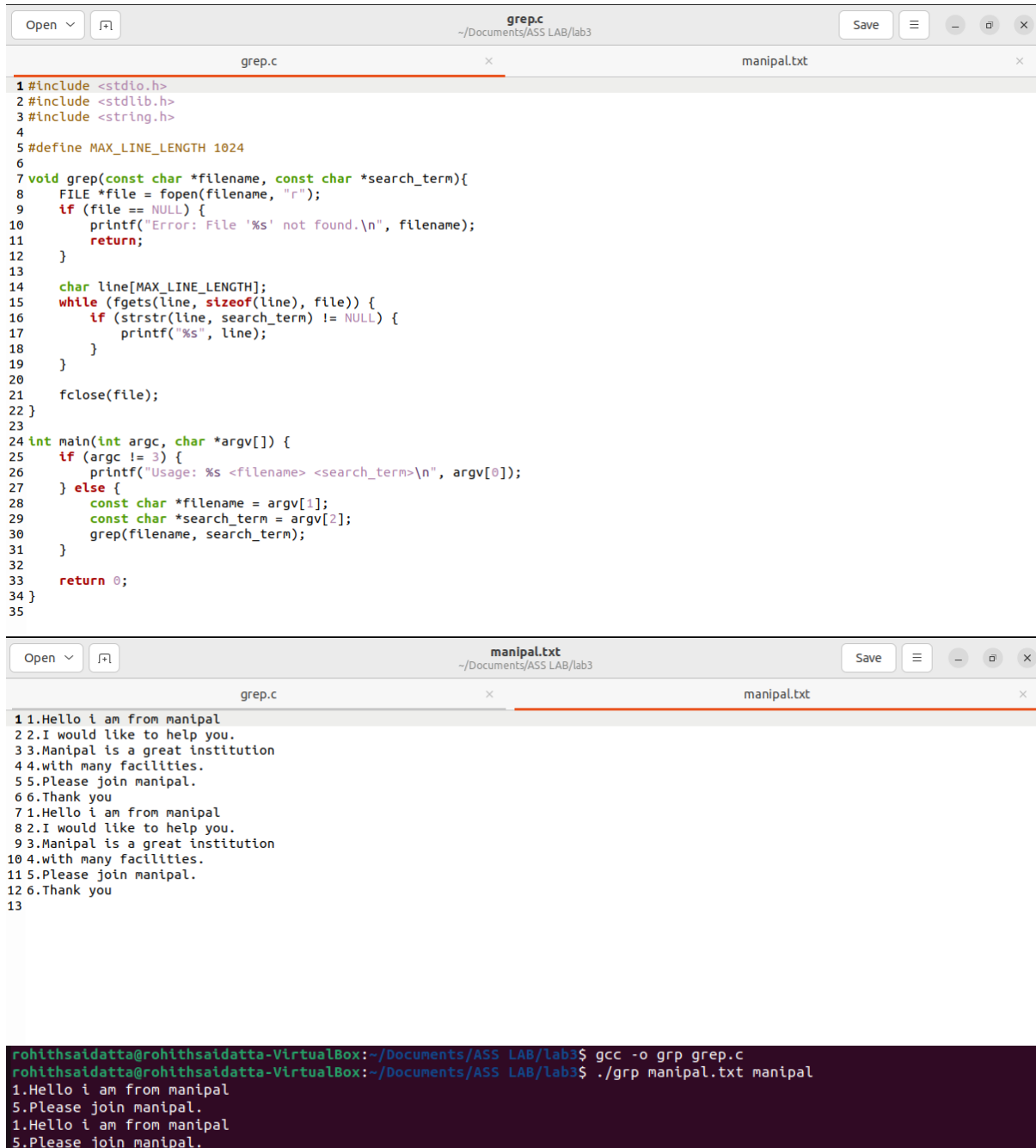


ASS LAB 3

1. Write a program to print the lines of a file that contain a word given as the program argument (a simple version of grep UNIX utility).

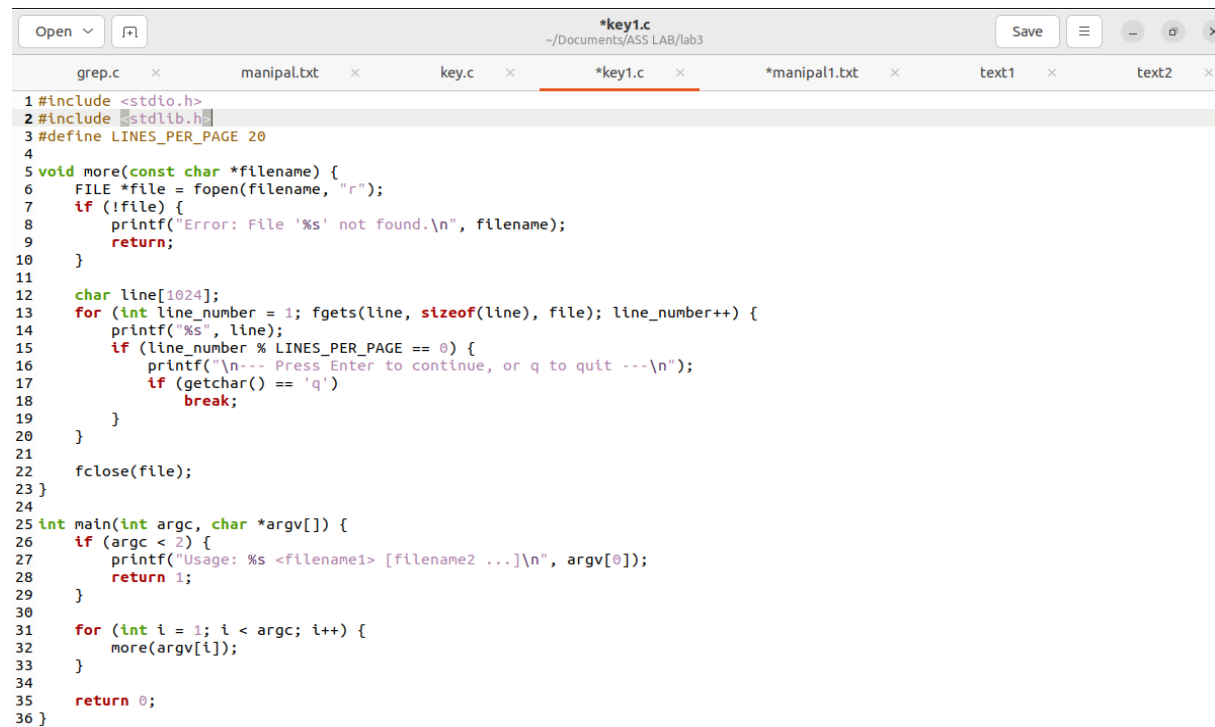


```
1#include <stdio.h>
2#include <stdlib.h>
3#include <string.h>
4
5#define MAX_LINE_LENGTH 1024
6
7void grep(const char *filename, const char *search_term){
8    FILE *file = fopen(filename, "r");
9    if (file == NULL) {
10        printf("Error: File '%s' not found.\n", filename);
11        return;
12    }
13
14    char line[MAX_LINE_LENGTH];
15    while (fgets(line, sizeof(line), file)) {
16        if (strstr(line, search_term) != NULL) {
17            printf("%s", line);
18        }
19    }
20
21    fclose(file);
22 }
23
24int main(int argc, char *argv[]) {
25    if (argc != 3) {
26        printf("Usage: %s <filename> <search_term>\n", argv[0]);
27    } else {
28        const char *filename = argv[1];
29        const char *search_term = argv[2];
30        grep(filename, search_term);
31    }
32
33    return 0;
34 }
35
```

```
11.Hello i am from manipal
22.I would like to help you.
33.Manipal is a great institution
44.with many facilities.
55.Please join manipal.
66.Thank you
71.Hello i am from manipal
82.I would like to help you.
93.Manipal is a great institution
104.with many facilities.
115.Please join manipal.
126.Thank you
13
```

```
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ gcc -o grp grep.c
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ ./grp manipal.txt manipal
1.Hello i am from manipal
5.Please join manipal.
1.Hello i am from manipal
5.Please join manipal.
```

2. Write a program to list the files given as arguments, stopping every 20 lines until a key is hit. (a simple version of more UNIX utility)



```
1#include <stdio.h>
2#include <stdlib.h>
3#define LINES_PER_PAGE 20
4
5void more(const char *filename) {
6    FILE *file = fopen(filename, "r");
7    if (!file) {
8        printf("Error: File '%s' not found.\n", filename);
9        return;
10    }
11
12    char line[1024];
13    for (int line_number = 1; fgets(line, sizeof(line), file); line_number++) {
14        printf("%s", line);
15        if (line_number % LINES_PER_PAGE == 0) {
16            printf("\n--- Press Enter to continue, or q to quit ---\n");
17            if (getchar() == 'q')
18                break;
19        }
20    }
21    fclose(file);
22 }
23
24
25int main(int argc, char *argv[]) {
26    if (argc < 2) {
27        printf("Usage: %s <filename1> [filename2 ...]\n", argv[0]);
28        return 1;
29    }
30
31    for (int i = 1; i < argc; i++) {
32        more(argv[i]);
33    }
34
35    return 0;
36 }
```

Open

text1

Save

~/Documents/ASS LAB/lab3

grep.c × manipal.txt × key.c × *key1.c × *manipal1.txt × text1 × text2 ×

11. The stars above twinkled like distant diamonds in the midnight sky.

22. With a cup of hot cocoa in hand, the chilly evening felt just right.

33. Lost in the pages of a book, the world around me seemed to fade away.

44. Laughter echoed through the park as children chased colorful balloons.

55. The old oak tree stood tall, its branches swaying to the rhythm of the wind.

66. In the bustling city, strangers hurried past, each with their own story.

77. Waves crashed against the shore, leaving behind a trail of foamy lace.

88. The aroma of freshly baked bread wafted from the neighborhood bakery.

99. Eyes closed, the melody of the piano transported me to a dreamlike state.

1010. On the mountaintop, a breathtaking view stretched out in all directions.

1111. Raindrops played a gentle tune on the rooftop, creating a soothing symphony.

1212. Neon signs painted the city streets in a myriad of vibrant colors.

1313. A single candle flickered, casting dancing shadows on the dimly lit room.

1414. With a camera in hand, every corner of the city became a potential masterpiece.

1515. The first snowflake of winter landed softly on the tip of my nose.

1616. As the sun set, the horizon was painted in shades of orange and pink.

1717. A handwritten letter carried words of nostalgia and distant memories.

1818. The smell of fresh flowers greeted me as I stepped into the garden.

1919. In the heart of the forest, the silence was broken only by the rustling leaves.

2020. Sitting around the campfire, stories and laughter filled the starry night.

Open

text2

Save

~/Documents/ASS LAB/lab3

grep.c × manipal.txt × key.c × *key1.c × *manipal1.txt × text1 × text2 ×

11. Steam rose from the mug, carrying the rich scent of morning coffee.

22. The city skyline glowed with a thousand windows, like a sea of golden stars.

33. Footsteps echoed in the empty hallway, creating an eerie sense of solitude.

44. The old swing swayed gently, a nostalgic reminder of days gone by.

55. In the art studio, splashes of color adorned canvases in beautiful chaos.

66. The ancient castle stood proudly, its walls echoing tales of history.

77. A rainbow arched across the sky after the passing rainstorm.

88. The distant lighthouse blinked reassuringly through the misty sea haze.

99. Pages of a journal held the intimate thoughts of a wandering soul.

1010. The anticipation in the air was palpable as the circus came to town.

1111. Autumn leaves danced and twirled, creating a vibrant tapestry on the ground.

1212. A shared smile between strangers on a crowded subway sparked a connection.

1313. The market buzzed with activity, vendors selling exotic fruits and trinkets.

1414. A shooting star streaked across the heavens, a fleeting cosmic spectacle.

1515. The campfire crackled, casting warmth and camaraderie among friends.

1616. Rows of sunflowers stretched towards the sun, a joyful ode to summer.

1717. The city's graffiti-covered walls became an unconventional gallery of urban art.

1818. Thunder rumbled in the distance, announcing an approaching summer storm.

1919. An old grandfather clock chimed midnight, marking the passage of time.

2020. A telescope revealed Jupiter's moons, silent witnesses to the secrets of the universe

```
rohithsaidatta@rohithsaidatta-VirtualBox: ~/Documents/ASS LAB/lab3
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ gcc -o grp key.c
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ gcc -o ky key1.c
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ ./ky text1 text2
1. The stars above twinkled like distant diamonds in the midnight sky.
2. With a cup of hot cocoa in hand, the chilly evening felt just right.
3. Lost in the pages of a book, the world around me seemed to fade away.
4. Laughter echoed through the park as children chased colorful balloons.
5. The old oak tree stood tall, its branches swaying to the rhythm of the wind.
6. In the bustling city, strangers hurried past, each with their own story.
7. Waves crashed against the shore, leaving behind a trail of foamy lace.
8. The aroma of freshly baked bread wafted from the neighborhood bakery.
9. Eyes closed, the melody of the piano transported me to a dreamlike state.
10. On the mountaintop, a breathtaking view stretched out in all directions.
11. Raindrops played a gentle tune on the rooftop, creating a soothing symphony.
12. Neon signs painted the city streets in a myriad of vibrant colors.
13. A single candle flickered, casting dancing shadows on the dimly lit room.
14. With a camera in hand, every corner of the city became a potential masterpiece.
15. The first snowflake of winter landed softly on the tip of my nose.
16. As the sun set, the horizon was painted in shades of orange and pink.
17. A handwritten letter carried words of nostalgia and distant memories.
18. The smell of fresh flowers greeted me as I stepped into the garden.
19. In the heart of the forest, the silence was broken only by the rustling leaves.
20. Sitting around the campfire, stories and laughter filled the starry night.

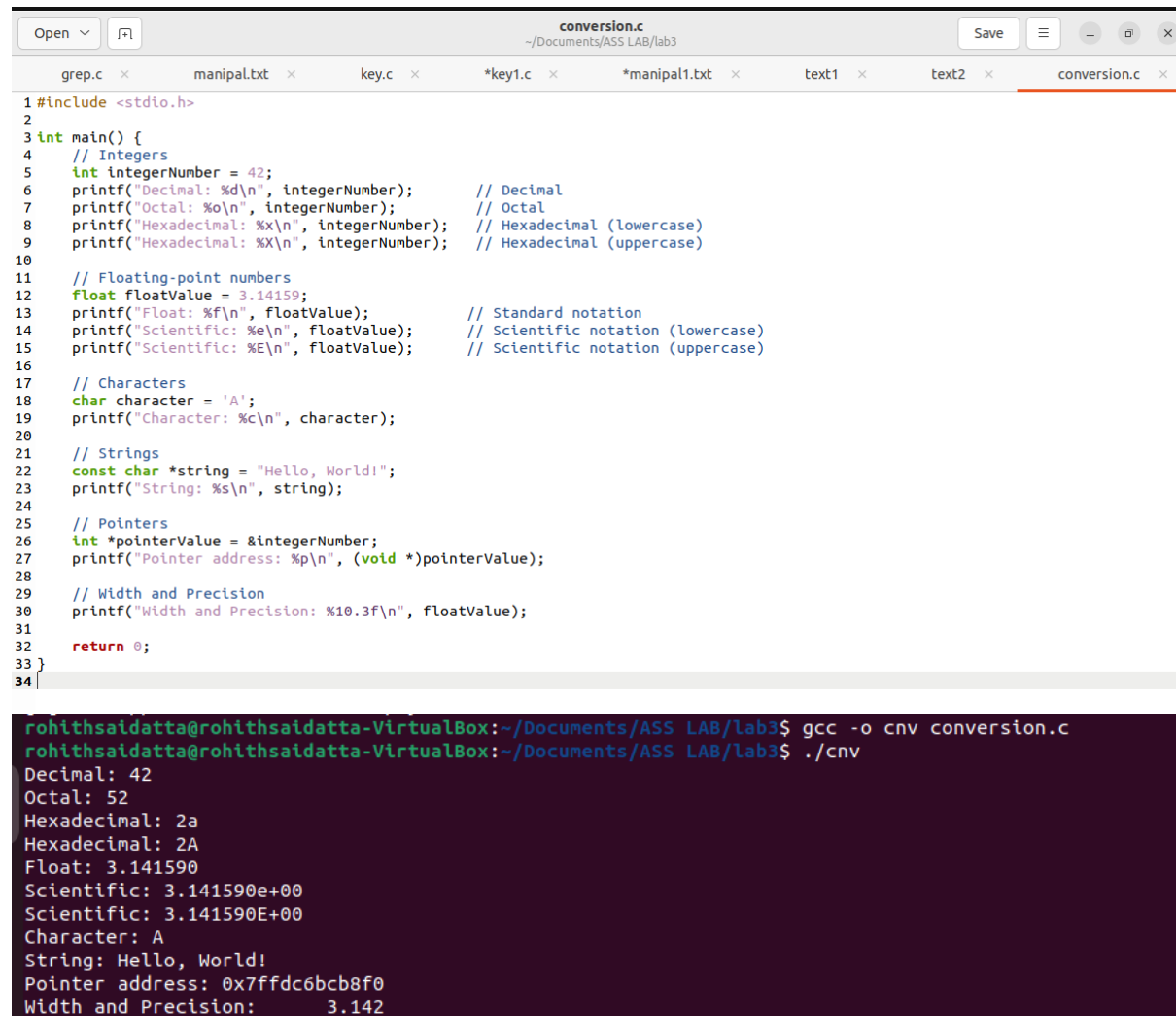
--- Press Enter to continue, or q to quit ---

--- Press Enter to continue, or q to quit ---

1. Steam rose from the mug, carrying the rich scent of morning coffee.
2. The city skyline glowed with a thousand windows, like a sea of golden stars.
3. Footsteps echoed in the empty hallway, creating an eerie sense of solitude.
4. The old swing swayed gently, a nostalgic reminder of days gone by.
5. In the art studio, splashes of color adorned canvases in beautiful chaos.
6. The ancient castle stood proudly, its walls echoing tales of history.
7. A rainbow arched across the sky after the passing rainstorm.
8. The distant lighthouse blinked reassuringly through the misty sea haze.
9. Pages of a journal held the intimate thoughts of a wandering soul.
10. The anticipation in the air was palpable as the circus came to town.
11. Autumn leaves danced and twirled, creating a vibrant tapestry on the ground.
12. A shared smile between strangers on a crowded subway sparked a connection.
13. The market buzzed with activity, vendors selling exotic fruits and trinkets.
14. A shooting star streaked across the heavens, a fleeting cosmic spectacle.
15. The campfire crackled, casting warmth and camaraderie among friends.
16. Rows of sunflowers stretched towards the sun, a joyful ode to summer.
17. The city's graffiti-covered walls became an unconventional gallery of urban art.
18. Thunder rumbled in the distance, announcing an approaching summer storm.
19. An old grandfather clock chimed midnight, marking the passage of time.
20. A telescope revealed Jupiter's moons, silent witnesses to the secrets of the universe
```

3. Demonstrate the use of different conversion specifiers and resulting output

To allow the items to be printed.

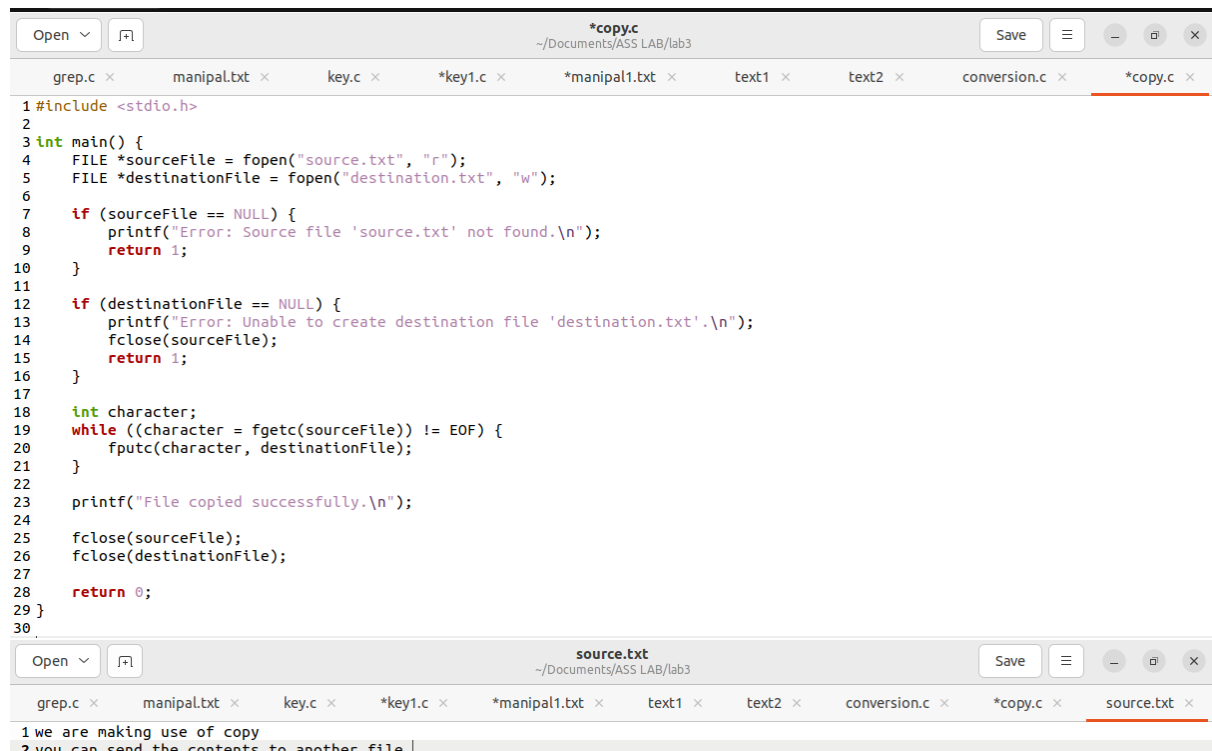


The image shows a code editor window with the file 'conversion.c' open. The code defines a 'main' function that prints various data types using different conversion specifiers. Below the code editor, a terminal window shows the compilation and execution of the program, displaying the resulting output.

```
1#include <stdio.h>
2
3int main() {
4    // Integers
5    int integerNumber = 42;
6    printf("Decimal: %d\n", integerNumber);    // Decimal
7    printf("Octal: %o\n", integerNumber);    // Octal
8    printf("Hexadecimal: %x\n", integerNumber);    // Hexadecimal (lowercase)
9    printf("Hexadecimal: %X\n", integerNumber);    // Hexadecimal (uppercase)
10
11    // Floating-point numbers
12    float floatValue = 3.14159;
13    printf("Float: %f\n", floatValue);    // Standard notation
14    printf("Scientific: %e\n", floatValue);    // Scientific notation (lowercase)
15    printf("Scientific: %E\n", floatValue);    // Scientific notation (uppercase)
16
17    // Characters
18    char character = 'A';
19    printf("Character: %c\n", character);
20
21    // Strings
22    const char *string = "Hello, World!";
23    printf("String: %s\n", string);
24
25    // Pointers
26    int *pointerValue = &integerNumber;
27    printf("Pointer address: %p\n", (void *)pointerValue);
28
29    // Width and Precision
30    printf("Width and Precision: %10.3f\n", floatValue);
31
32    return 0;
33}
34
```

```
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ gcc -o cnv conversion.c
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ ./cnv
Decimal: 42
Octal: 52
Hexadecimal: 2a
Hexadecimal: 2A
Float: 3.141590
Scientific: 3.141590e+00
Scientific: 3.141590E+00
Character: A
String: Hello, World!
Pointer address: 0x7ffdc6bcb8f0
Width and Precision:      3.142
```

4. Write a program to copy character-by-character copy is accomplished using calls to the functions referenced in stdio.h.

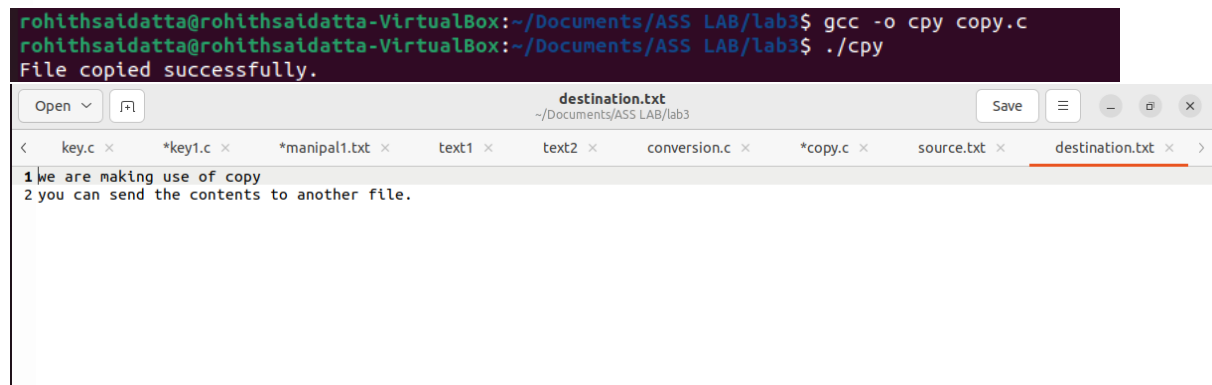


The screenshot shows a code editor with two tabs. The first tab, titled `*copy.c`, contains the following C code:

```
1#include <stdio.h>
2
3int main() {
4    FILE *sourceFile = fopen("source.txt", "r");
5    FILE *destinationFile = fopen("destination.txt", "w");
6
7    if (sourceFile == NULL) {
8        printf("Error: Source file 'source.txt' not found.\n");
9        return 1;
10   }
11
12   if (destinationFile == NULL) {
13       printf("Error: Unable to create destination file 'destination.txt'.\n");
14       fclose(sourceFile);
15       return 1;
16   }
17
18   int character;
19   while ((character = fgetc(sourceFile)) != EOF) {
20       fputc(character, destinationFile);
21   }
22
23   printf("File copied successfully.\n");
24
25   fclose(sourceFile);
26   fclose(destinationFile);
27
28   return 0;
29 }
30
```

The second tab, titled `source.txt`, contains the following text:

```
1 we are making use of copy
2 you can send the contents to another file.
```



The screenshot shows a terminal window with the following commands and output:

```
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ gcc -o cpy copy.c
rohithsaidatta@rohithsaidatta-VirtualBox:~/Documents/ASS LAB/lab3$ ./cpy
File copied successfully.
```

Below the terminal window is another screenshot of the code editor, showing the `destination.txt` tab. The content of `destination.txt` is:

```
1 we are making use of copy
2 you can send the contents to another file.
```