```
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ vi main.c
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ vi logic.c
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ vi logic.h
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ vi complement.c
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ vi complement.h
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ vi conversion.c
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ vi conversion.h
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ cc main.c conversion.c logic.c complement.c -o main
➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ ./main
Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 1

Enter the first binary number:
x0 = 3
Error: Please enter 0 or 1 only.

x0 = 1
x1 = 0
x2 = 1
x3 = 1
x4 = 0
x5 = 0
x6 = 1
x7 = 0

Enter the second binary number:
y0 = -1
Error: Please enter 0 or 1 only.

y0 = 1
y1 = 1
y2 = 0
y3 = 0
y4 = 1
y5 = 0
y6 = 1
y7 = 1

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 12 binary
Error: Invalid base selection. Please enter 1, 2, 3, or 4.

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 1

10110010 AND 11001011 is 10000010 in Binary
```

```
Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 2

Enter the first binary number:
x0 = 0
x1 = 0
x2 = 0
x3 = 0
x4 = 0
x5 = 0
x6 = 0
x7 = 0

Enter the second binary number:
y0 = 1
y1 = y
Error: Please enter 0 or 1 only.

y1 = 1
y2 = 1
y3 = 1
y4 = 1
y5 = 1
y6 = 1
y7 = 1

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: -12 octal
Error: Invalid base selection. Please enter 1, 2, 3, or 4.

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 2

00000000 OR 11111111 is 377 in Octal
```

```
Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 3

Enter the binary number:
x0 = 1
x1 = 0
x2 = -13
Error: Please enter 0 or 1 only.

x2 = 1
x3 = 1
x4 = 0
x5 = 0
x6 = 1
x7 = 0

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 12decimal
Error: Invalid base selection. Please enter 1, 2, 3, or 4.

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 3

10110010 NOT is 77 in Decimal
```

```
Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 4

Enter the binary number:
x0 = 0
x1 = 1
x2 = 0
x3 = 1com
Error: Please enter 0 or 1 only.

x3 = 1
x4 = 1
x5 = 0
x6 = 1
x7 = 1

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: -12hexadecimal
Error: Invalid base selection. Please enter 1, 2, 3, or 4.

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 4

01011011 1's complement is A4 in Hexadecimal
```

```
Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 5

Enter the binary number:
x0 = 0
x1 = 0
x2 = 0
x3 = 0
x4 = -2 com
Error: Please enter 0 or 1 only.

x4 = 0
x5 = 0
x6 = 0
x7 = 0

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 1

00000000 2's complement is 00000000 in Binary

Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 5

Enter the binary number:
x0 = 1
x1 = 1
x2 = 1
x3 = 1
x4 = 1
x5 = 00
Error: Please enter 0 or 1 only.

x5 = 1
x6 = 1
x7 = 1

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 2

11111111 2's complement is 1 in Octal
```

```
Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 6

Enter the binary number:
x0 = 0
x1 = 0
x2 = 0
x3 = 0
x4 = 0
x5 = 0
x6 = -2 com
Error: Please enter 0 or 1 only.

x6 = 0
x7 = 0

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 3

00000000 2's complement* is 0 in Decimal

Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 6

Enter the binary number:
x0 = 1
x1 = 1
x2 = 1
x3 = 1
x4 = 1
x5 = 1
x6 = 1
x7 = 00
Error: Please enter 0 or 1 only.

x7 = 1

Enter the output base:
        1) Binary
        2) Octal
        3) Decimal
        4) Hexadecimal
Choose: 4

11111111 2's complement* is 1 in Hexadecimal
```

```
Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: exit
Error: Invalid input. Please enter 0, 1, 2, 3, 4, 5, or 6.

Enter the command number:
        0) Exit
        1) AND
        2) OR
        3) NOT
        4) 1's complement
        5) 2's complement
        6) 2's complement*
Choose: 0
Exiting...

➤➤ ~/Desktop/Folders/University of Windsor/Fall 2024/COMP-2650/Labs/Lab04/lab04_mandal5 $ _
```