```c
// Program to demonstrate the use of arithmetic operations
#include <stdio.h>
int main()
{
    // Declare variables
    int num1, num2;
    char operator;

    // Take user input for two numbers
    printf("Enter two numbers: ");
    scanf("%d%d", &num1, &num2);

    // Take user input for operator
    printf("Enter operator (+,-,*,/): ");
    scanf(" %c", &operator);

    float result;

    if (operator== '+')
    {
        result = num1 + num2;
    }
    else if (operator== '-')
    {
        result = num1 - num2;
    }
    else if (operator== '*')
    {
        result = num1 * num2;
    }
    else if (operator== '/')
    {
        if (num2 != 0)
        {
           result = (float)num1 / num2;
        }
        else
        {
            printf("Cannot divide by zero");
            return 1;
        }
    }
    else
    {
        printf("Invalid operator");
        return 1;
    }

    // Print the result
    printf("%d %c %d = %.2f", num1, operator, num2, result);
    return 0;
}

```

Output:

2. Program to convert number of days into days and months.

Code

```c
// Program to convert number of days into days and months
#include <stdio.h>
int main()
{
    int days, months;
    printf("Enter number of days: ");
    scanf("%d", &days);
    months = days / 30;
    days = days % 30;
    printf("Months = %d Days = %d", months, days);
    return 0;
}
```

Output

3. Program that reads time in seconds and converts it into hour, minute and seconds.

Code

```c
// Program that reads time in seconds and converts it in to hour, minute and seconds
#include <stdio.h>
int main()
{
    int sec;
    printf("Enter time in seconds: ");
    scanf("%d", &sec);
    int hour = sec / 3600;
    int rsec = sec % 3600;
    int minute = rsec / 60;
    sec = rsec % 60;
    printf("%d hour, %d minute, and %d sec", hour, minute, sec);
    return 0;
}
```

Output

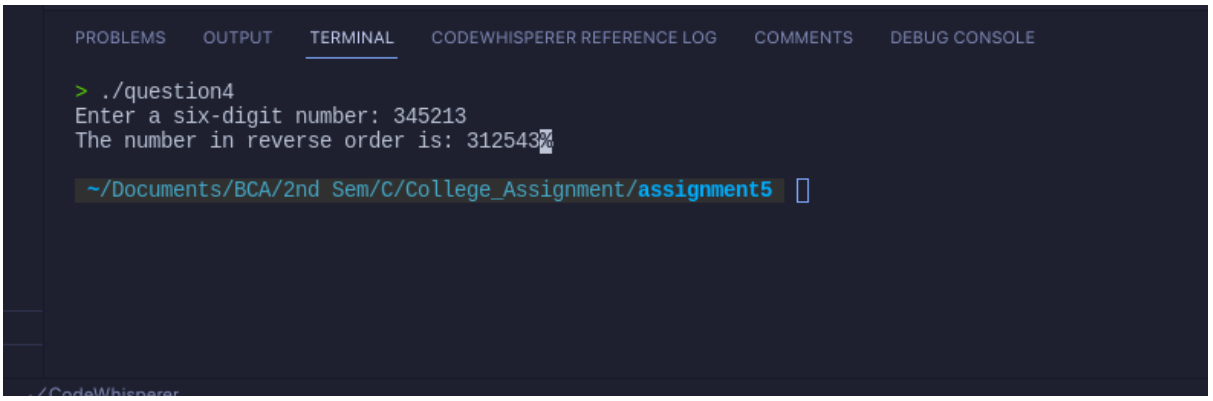
```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

PS E:\Manish\CProgramming\assignment5> ./question3
Enter time in seconds: 8563
2 hour, 22 minute, and 43 sec
PS E:\Manish\CProgramming\assignment5>
```

4. Program to print six digit integers in reverse order.

Code

```c
// Program to print a six digit integer in reverse order
#include <stdio.h>
int main()
{
    // Take user input for a six-digit number
    int number;
    printf("Enter a six-digit number: ");
    scanf("%d", &number);
    if (number >= 100000 && number <= 999999)
    {

        int digit6 = number % 10;
        int digit5 = (number / 10) % 10;
        int digit4 = (number / 100) % 10;
        int digit3 = (number / 1000) % 10;
        int digit2 = (number / 10000) % 10;
        int digit1 = number / 100000;

        printf("The number in reverse order is: %d%d%d%d%d%d", digit6, digit5, digit4, digit3, digit2, digit1);
    }
    else
    {
        printf("Invalid Input. Please enter a six-digit number");
    }
    return 0;
}
```

Output

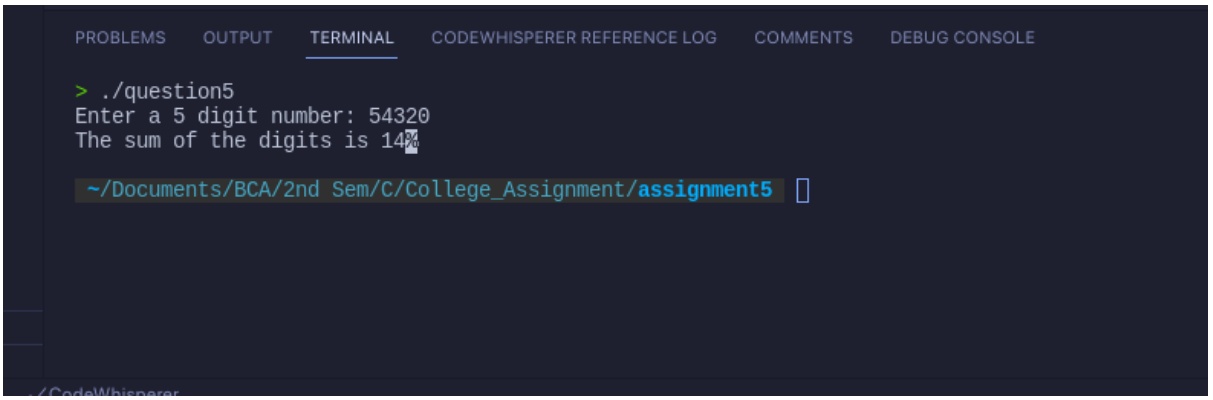


5. Program to sum the digits of a positive integer which is 5 digits long.

Code

```c
// Program to sum the digits of a positive integer which is 5 digits long
#include <stdio.h>
int main()
{
    int number;
    // User inputs
    printf("Enter a 5 digit number: ");
    scanf("%d", &number);

    if (number < 10000 || number > 99999)
    {
        printf("Invalid number. Please enter a 5 digit number!");
    }
    else
    {

        int digit1 = number / 10000;
        int digit2 = (number / 1000) % 10;
        int digit3 = (number / 100) % 10;
        int digit4 = (number / 10) % 10;
        int digit5 = number % 10;

        int sum = digit1 + digit2 + digit3 + digit4 + digit5;
        printf("The sum of the digits is %d", sum);
    }
    return 0;
}
```

Output

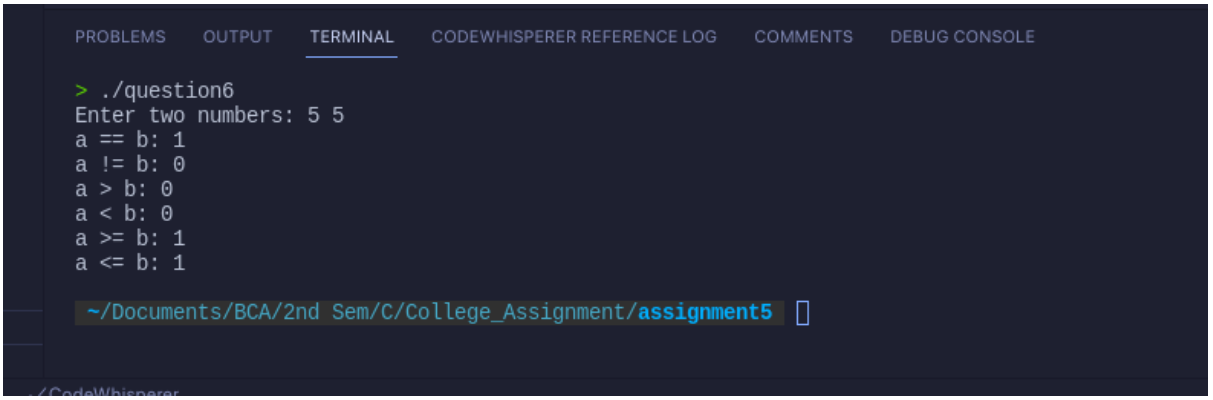


6. Program that demonstrates the use of relational operators.

Code

```c
// Program that demonstrates the use of relational operators
#include <stdio.h>
int main()
{
    int a, b;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    printf("a == b: %d\n", a == b);
    printf("a != b: %d\n", a != b);
    printf("a > b: %d\n", a > b);
    printf("a < b: %d\n", a < b);
    printf("a >= b: %d\n", a >= b); // here 0 represents false and 1 represents true
    printf("a <= b: %d\n", a <= b);
    return 0;
}
```

Output

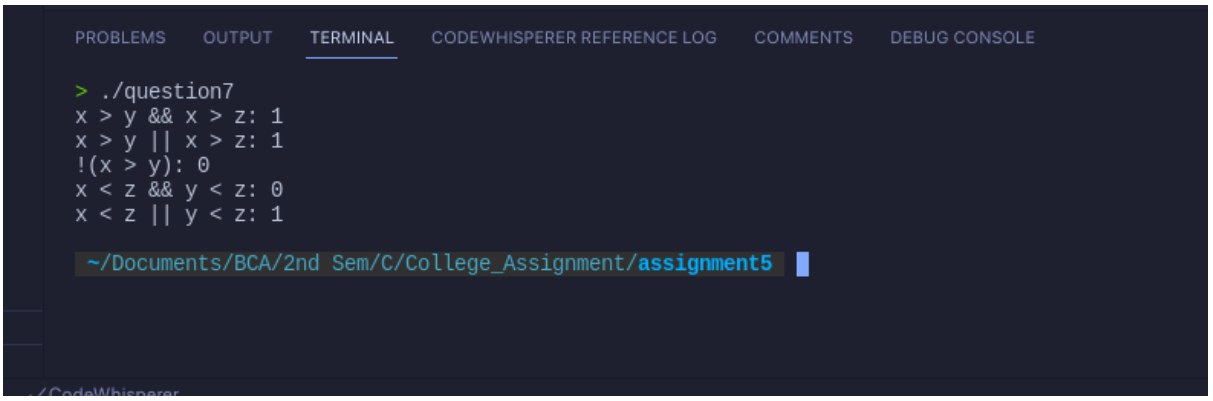


7. Program that demonstrates the use of logical operators

Code

```c
// Program that demonstrates the use of logical operators
#include <stdio.h>
int main()
{
    int x = 25, y = 10, z = 15;
    printf("x > y && x > z: %d\n", x > y && x > z);
    printf("x > y || x > z: %d\n", x > y || x > z);
    printf("!(x > y): %d\n", !(x > y));
    printf("x < z && y < z: %d\n", x < z && y < z);
    printf("x < z || y < z: %d\n", x < z || y < z);
    return 0;
}
```

Output

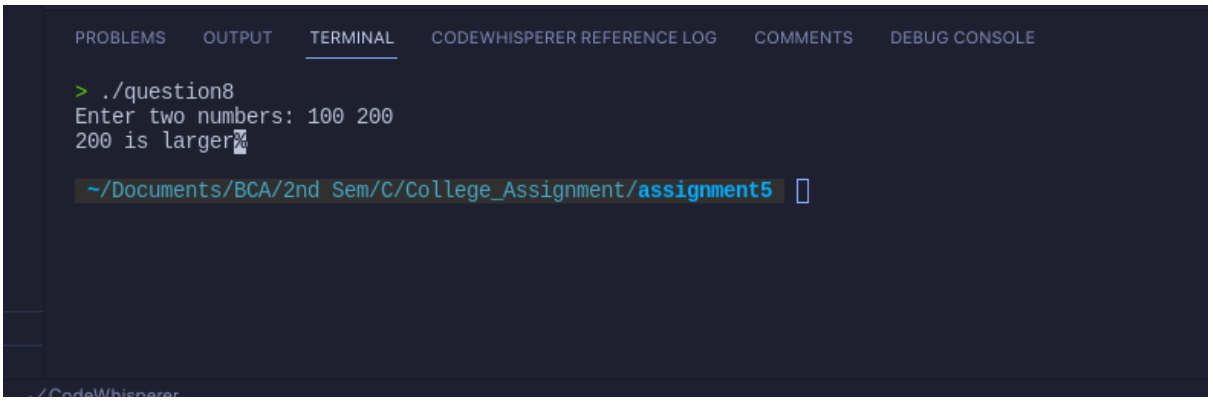


8. Program that finds the largest among two integers using a conditional operator.

Code

```c
// Program that finds the larger among two integers using conditional operator
#include <stdio.h>
int main()
{
    int a, b;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    a > b ? printf("%d is larger", a) : printf("%d is larger", b);
    return 0;
}
```

Output



9. Program that finds the largest among four integers using a conditional operator.

Code

```c
// Program that finds the largest among four integers using conditional operator
#include <stdio.h>
int main()
{
    int n1, n2, n3, n4;
    printf("Enter four integers: ");
    scanf("%d %d %d %d", &n1, &n2, &n3, &n4);
    int larg1 = n1 > n2 ? n1 : n2;
    int larg2 = larg1 > n3 ? larg1 : n3;
    int largest = larg2 > n4 ? larg2 : n4;
    printf("Largest among %d, %d, %d and %d is %d", n1, n2, n3, n4, largest);
    return 0;
}
```

Output

```
PROBLEMS  OUTPUT  TERMINAL  CODEWHISPERER REFERENCE LOG  COMMENTS  DEBUG CONSOLE

> ./question9
Enter four integers: 23 -54 2 22
Largest among 23, -54, 2 and 22 is 23%

~/Documents/BCA/2nd Sem/C/College_Assignment/assignment5
```

10. Program that demonstrates the use of bitwise logical operators.

Code

```c
// Program that demonstrates the use of bitwise logical operators
#include <stdio.h>
int main()
{
    int num1 = 505, num2 = 215;
    int AND, OR, XOR;
    AND = num1 & num2;
    OR = num1 | num2;
    XOR = num1 ^ num2;
    printf("AND = %d\n", AND);
    printf("OR = %d\n", OR);
    printf("XOR = %d\n", XOR);
    return 0;
}
```

Output

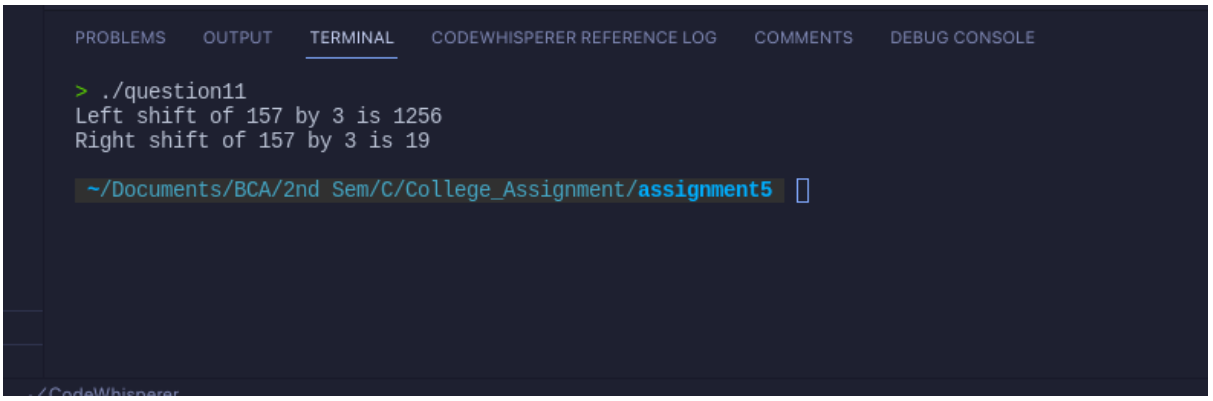
```
PROBLEMS  OUTPUT  TERMINAL  CODEWHISPERER REFERENCE LOG  COMMENTS  DEBUG CONSOLE

> ./question10
AND = 209
OR = 511
XOR = 302

~/Documents/BCA/2nd Sem/C/College_Assignment/assignment5
```

11. Program that demonstrates the use of bitwise shift operators.

Code

```c
// Program that demonstrates the use of bitwise shift operators.
#include <stdio.h>
int main()
{
    int num1 = 157;
    int left, right;
    left = num1 << 3;
    right = num1 >> 3;
    printf("Left shift of %d by 3 is %d\n", num1, left);
    printf("Right shift of %d by 3 is %d\n", num1, right);
    return 0;
}
```

Output



12. Program that demonstrates the use of sizeof() operator.

Code

```c
// Program that demonstrates the use of sizeof() operator.
#include <stdio.h>
int main()
{
    int num;
    printf("Size of int: %d bytes\n", sizeof(num));
    printf("Size of char: %d bytes\n", sizeof(char));
    printf("Size of float: %d bytes\n", sizeof(float));
    printf("Size of double: %d bytes\n", sizeof(double));
    printf("double Constant Occupies => %d bytes\n", sizeof(3.14));
    return 0;
}
```

Output