

1. `#include <stdio.h>`

```
int main() {
    int num = 5;
    int binary[32];
    int i = 0;

    while (num > 0) {
        binary[i] = num % 2;
        num /= 2;
        i++;
    }

    printf("Binary representation: ");
    for (int j = i - 1; j >= 0; j--) {
        printf("%d", binary[j]);
    }
    printf("\n");

    return 0;
}
```

The screenshot shows the Programiz C Online Compiler interface. The top header includes the Programiz logo, a banner for 'Premium Coding Courses by Programiz', and a 'Programiz PRO' button. The main area is divided into a code editor on the left and an output panel on the right. The code editor contains the C code for converting the decimal number 5 to its binary representation. The output panel shows the result: 'Binary representation: 101' and '=== Code Execution Successful ==='. The code in the editor is as follows:

```
1 #include <stdio.h>
2
3 int main() {
4     int num = 5;
5     int binary[32];
6     int i = 0;
7
8     while (num > 0) {
9         binary[i] = num % 2;
10        num /= 2;
11        i++;
12    }
13
14    printf("Binary representation: ");
15    for (int j = i - 1; j >= 0; j--) {
16        printf("%d", binary[j]);
17    }
18    printf("\n");
19
20    return 0;
21 }
22
23
```

The screenshot shows the Programiz Online Compiler interface. At the top, there's a header with the Programiz logo, a 'Premium Coding Courses by Programiz' banner, and a 'Programiz PRO' button. Below the header, the editor is split into two panes. The left pane, titled 'main.c', contains the following C code:

```
1 #include <stdio.h>
2 #include <ctype.h>
3 void countVowelsAndConsonants(char *str, int *vowelCount, int *consonantCount)
4 {
5     *vowelCount = 0;
6     *consonantCount = 0;
7     while (*str != '\0') {
8         char ch = tolower(*str);
9         if ((ch >= 'a' && ch <= 'z')) {
10             if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u')
11                 (*vowelCount)++;
12             else
13                 (*consonantCount)++;
14         }
15         str++;
16     }
17 }
18 int main() {
19     char str[100];
20     int vowels, consonants;
21     printf("Enter a string: ");
22     fgets(str, sizeof(str), stdin);
23     countVowelsAndConsonants(str, &vowels, &consonants);
24     printf("Number of vowels: %d\n", vowels);
25     printf("Number of consonants: %d\n", consonants);
26     return 0;
27 }
28
```

The right pane, titled 'Output', shows the prompt 'Enter a string:' and is currently empty. A 'Clear' button is located at the top right of the output pane. On the left side of the editor, there's a sidebar with icons for different programming languages: C, JS, Python, and PHP.

```
2. #include <stdio.h>
#include <ctype.h>
void countVowelsAndConsonants(char *str, int *vowelCount, int *consonantCount) {
    *vowelCount = 0;
    *consonantCount = 0;
    while (*str != '\0') {
        char ch = tolower(*str);
        if ((ch >= 'a' && ch <= 'z')) {
            if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
                (*vowelCount)++;
            } else {
                (*consonantCount)++;
            }
        }
        str++;
    }
}
int main() {
    char str[100];
    int vowels, consonants;
    printf("Enter a string: ");
    fgets(str, sizeof(str), stdin);
    countVowelsAndConsonants(str, &vowels, &consonants);
    printf("Number of vowels: %d\n", vowels);
    printf("Number of consonants: %d\n", consonants);
    return 0;
}
```

3. #include <stdio.h>

```
float add(float a, float b);
float subtract(float a, float b);
float multiply(float a, float b);
float divide(float a, float b);
int main() {
    int choice;
    float num1, num2, result;

    while (1) {
        printf("\nMenu:\n");
        printf("1. Addition\n");
        printf("2. Subtraction\n");
        printf("3. Multiplication\n");
        printf("4. Division\n");
        printf("5. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);

        if (choice == 5) {
            printf("Exiting the program. Goodbye!\n");
            break;
        }
        printf("Enter two numbers: ");
        scanf("%f %f", &num1, &num2);
        switch (choice) {
            case 1:
                result = add(num1, num2);
                printf("Result: %.2f\n", result);
                break;
            case 2:
                result = subtract(num1, num2);
                printf("Result: %.2f\n", result);
                break;
            case 3:
                result = multiply(num1, num2);
                printf("Result: %.2f\n", result);
                break;
            case 4:
                if (num2 != 0) {
                    result = divide(num1, num2);
                    printf("Result: %.2f\n", result);
                } else {
```

```

        printf("Error: Division by zero is not allowed.\n");
    }
    break;
default:
    printf("Invalid choice. Please try again.\n");
}
}

return 0;
}

float add(float a, float b) {
    return a + b;
}

float subtract(float a, float b) {
    return a - b;
}

float multiply(float a, float b) {
    return a * b;
}

float divide(float a, float b) {
    return a / b;
}

```

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```

main.c
44-     } else {
45-         printf("Error: Division by zero is not allowed.\n");
46-     }
47-     break;
48-     default:
49-         printf("Invalid choice. Please try again.\n");
50-     }
51- }
52-
53-     return 0;
54- }
55-
56- float add(float a, float b) {
57-     return a + b;
58- }
59-
60- float subtract(float a, float b) {
61-     return a - b;
62- }
63-
64- float multiply(float a, float b) {
65-     return a * b;
66- }
67-
68- float divide(float a, float b) {
69-     return a / b;
70- }
71-

```

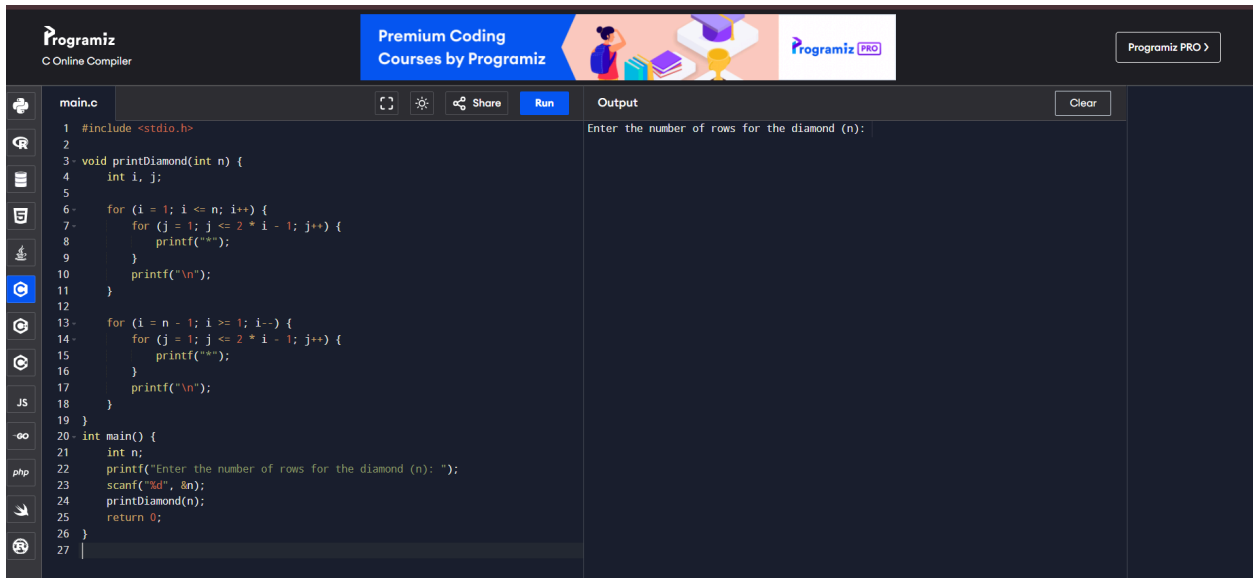
Output

```

Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice:

```

4.



The screenshot shows the Programiz C Online Compiler interface. The editor contains the following C code:

```
1 #include <stdio.h>
2
3 void printDiamond(int n) {
4     int i, j;
5
6     for (i = 1; i <= n; i++) {
7         for (j = 1; j <= 2 * i - 1; j++) {
8             printf("*");
9         }
10        printf("\n");
11    }
12
13    for (i = n - 1; i >= 1; i--) {
14        for (j = 1; j <= 2 * i - 1; j++) {
15            printf("*");
16        }
17        printf("\n");
18    }
19 }
20
21 int main() {
22     int n;
23     printf("Enter the number of rows for the diamond (n): ");
24     scanf("%d", &n);
25     printDiamond(n);
26     return 0;
27 }
```

The output area on the right shows the prompt "Enter the number of rows for the diamond (n):" and a "Clear" button.

```
#include <stdio.h>
```

```
void printDiamond(int n) {
    int i, j;
```

```
    for (i = 1; i <= n; i++) {
        for (j = 1; j <= 2 * i - 1; j++) {
            printf("*");
        }
        printf("\n");
    }
```

```
    for (i = n - 1; i >= 1; i--) {
        for (j = 1; j <= 2 * i - 1; j++) {
            printf("*");
        }
        printf("\n");
    }
}
```

```
int main() {
    int n;
    printf("Enter the number of rows for the diamond (n): ");
    scanf("%d", &n);
    printDiamond(n);
    return 0;
}
```

5. #include <stdio.h>

```
int stringLength(char *str) {  
    int length = 0;
```

```
    while (*str != '\0') {  
        length++;  
        str++;  
    }
```

```
    return length;  
}
```

```
int main() {  
    char str[] = "Hello";  
    int length;
```

```
    length = stringLength(str);  
    printf("The length of the string \"%s\" is: %d\n", str, length);
```

```
    return 0;  
}
```

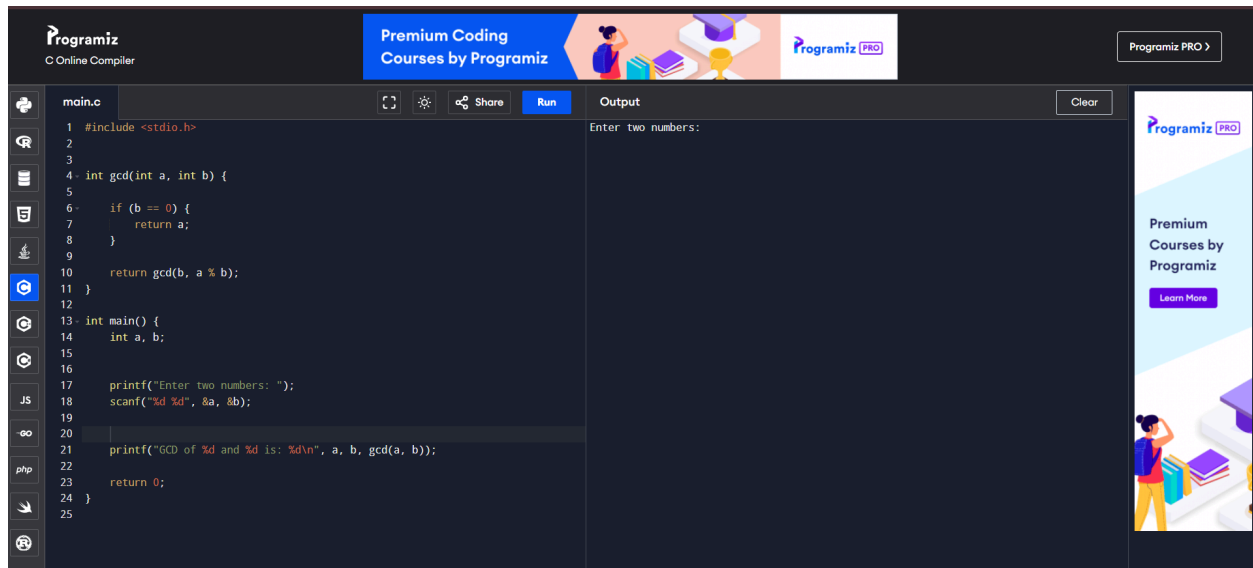
The screenshot displays the Programiz Online Compiler interface. The top header includes the Programiz logo, a navigation bar with 'Premium Coding Courses by Programiz', and a 'Programiz PRO' badge. The main workspace is divided into two panels. The left panel, titled 'main.c', contains the following C code:

```
1 #include <stdio.h>  
2  
3 int stringLength(char *str) {  
4     int length = 0;  
5  
6     while (*str != '\0') {  
7         length++;  
8         str++;  
9     }  
10  
11     return length;  
12 }  
13  
14 int main() {  
15     char str[] = "Hello";  
16     int length;  
17  
18     length = stringLength(str);  
19     printf("The length of the string \"%s\" is: %d\n", str, length);  
20  
21     return 0;  
22 }  
23
```

The right panel, titled 'Output', shows the result of the code execution:

```
The length of the string "Hello" is: 5  
  
=== Code Execution Successful ===
```

The interface also features a sidebar on the left with icons for file management and a bottom navigation bar with language options (C, JS, PHP).



```
#include <stdio.h>
```

```
int gcd(int a, int b) {
```

```
    if (b == 0) {
        return a;
    }
```

```
    return gcd(b, a % b);
}
```

```
int main() {
    int a, b;
```

```
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
```

```
    printf("GCD of %d and %d is: %d\n", a, b, gcd(a, b));
```

```
    return 0;
}
```