

## C Program to Find the Area of a Rhombus

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**Introduction** The area of a rhombus can be calculated using its diagonals with the formula:

This document presents a C program that takes the lengths of the diagonals as user inputs and computes the area of the rhombus.

#### C Program Code

```
#include <stdio.h>

int main() {

    float diagonal1, diagonal2, area;

    // Input the lengths of the diagonals

    printf("Enter the length of the first diagonal: ");

    scanf("%f", &diagonal1);

    printf("Enter the length of the second diagonal: ");

    scanf("%f", &diagonal2);

    // Calculate the area of the rhombus

    area = (diagonal1 * diagonal2) / 2;

    // Output the result

    printf("The area of the rhombus is: %.2f square units\n", area);

    return 0;

}
```

#### Explanation of the Code

Including the Standard Library

`#include <stdio.h>`: This library enables input and output operations using `printf()` and `scanf()` functions.

**Main Function**

`int main() { }`: This marks the entry point of the C program.

**Variable Declaration**

```
float diagonal1, diagonal2, area;
```

These variables store the diagonal lengths and the computed area.

**User Input**

```
printf("Enter the length of the first diagonal: ");
```

```
scanf("%f", &diagonal1);
```

The same process is repeated for diagonal 2.

**Calculation of Area**

```
area = (diagonal1 * diagonal2) / 2;
```

This applies to the rhombus area formula.

**Displaying the Result**

```
printf("The area of the rhombus is: %.2f square units\n", area);
```

The output is displayed with two decimal places.

**Return Statement**

```
return 0;
```

Indicates successful execution.

**References**

Carter, M. (2022). Fundamentals of geometry for engineers. McGraw-Hill.

Kernighan, B. W., & Ritchie, D. M. (2021). The C programming language (2nd ed.). Prentice Hall.