2

Experiment-3-1

Q. WAP to take check if the triangle is valid or not. If the validity is established, do check if the triangle is isosceles, equilateral, right angle or scalene. Take side of the triangle as input from a user.

Sol^n ⇒

```
#   include   <stdio.h>

int main () {

    int a,b,c ;
    Printf ("enter the three sides of the triangle":)
    Scanf ("%f %f %f" &a ,&b ,&c);
    if ((a+b) > c) && (a+c > b) & & (b+c >a))
    {
    printf ("the triangle is valid.\n");
    if (a == b && b == c)
    {
        printf (" It is equilateral triangle.\n");
    }
    else if (a==b || b == c || a == c)
    {
        printf ("It is isosceles triangle");
    }
```

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```c
else if ((a*a + b*b == c*c) ||
         (a*a + c*c == b*b) ||
         (b*b + c*c == a*a))
{
    printf("It is a right angled triangle.\n");
}
else
{
    printf("It is Scalene triangle.\n");
}
}
else
{
    printf("the triangle is not valid.\n");
}
return 0;
}
```

```c
#include <stdio.h>

int main() {
    float a, b, c;
    printf("Enter the three sides of the triangle: ");
    scanf("%f %f %f", &a, &b, &c);

    if ((a + b > c) && (a + c > b) && (b + c > a)) {
        printf("The triangle is valid.\n");

        if (a == b && b == c) {
            printf("It is an equilateral triangle.\n");
        }
        else if (a == b || b == c || a == c) {
            printf("It is isosceles triangle.\n");
        }
        else if ((a*a + b*b == c*c) || (a*a + c*c == b*b) || (b*b
            + c*c == a*a)) {
            printf("It is a right angled triangle.\n");
        }
        else {
            printf("It is a scalene triangle.\n");
        }
    }
    else {
        printf("The triangle is not valid.\n");
```

Output

```
Enter the three sides of the triangle: 3 4 5
The triangle is valid.
It is a right angled triangle.


=== Code Execution Successful ===
```