

Problems

Determine, as best as you can, the purpose of each of the following C programs. Identify all the variables within each program. Identify all input and output statements, and any other special features that you recognize.

que.1

```
main()
{
    printf("Welcome to the Wonderful World of Computing!\n");
}
```

OUTOUT: **Welcome to the Wonderful World of Computing!**

que.2

```
#define MESSAGE "Welcome to the Wonderful World Of Computing!\n"
main()
{
    printf(MESSAGE);
}
```

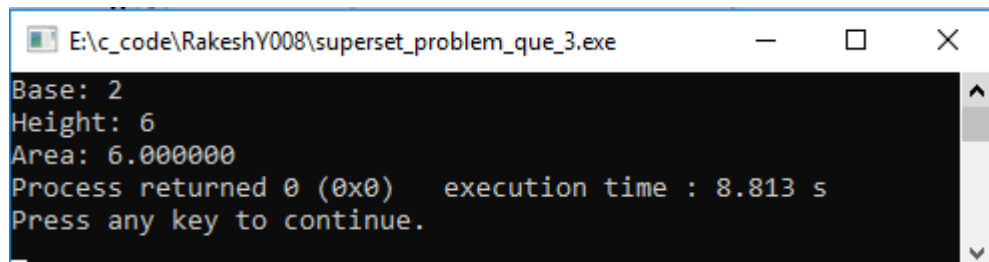
OUTOUT: **Welcome to the Wonderful World Of Computing!**

que.3

```
main()
{
    float base, height, area;
    printf("Base: ");
    scanf("%f", &base);
```

```
printf("Height: ");  
scanf("%f", &height);  
area = (base * height) / 2.;  
printf("Area: %f", area);  
}
```

OUTOUT:

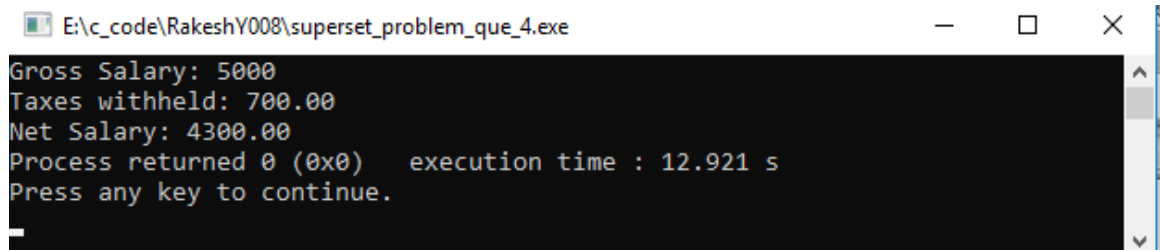


```
E:\c_code\RakeshY008\superset_problem_que_3.exe  
Base: 2  
Height: 6  
Area: 6.000000  
Process returned 0 (0x0) execution time : 8.813 s  
Press any key to continue.
```

que.4

```
main()  
{  
    float gross, tax, net;  
    printf("Gross Salary: ");  
    scanf("%f", &gross);  
    tax = 0.14 * gross;  
    net = gross - tax;  
    printf("Taxes withheld: %.2f\n", tax);  
    printf("Net Salary: %.2f", net);  
}
```

OUTOUT:



```
E:\c_code\RakeshY008\superset_problem_que_4.exe
Gross Salary: 5000
Taxes withheld: 700.00
Net Salary: 4300.00
Process returned 0 (0x0) execution time : 12.921 s
Press any key to continue.
```

que.5

```
int smaller(int a, int b);

main()
{
    int a, b, min;

    printf("Enter the first number: ");
    scanf("%d", &a);

    printf("Enter the second number: ");
    scanf("%d", &b);

    min = smaller(a, b);

    printf("\nThe smaller number is: %d", min);
}

int smaller(int a, int b)
{
    if (a <= b)
    {
        return(a);
    }
    else
    {
```

```
        return(b);  
    }  
}
```

OUTOUT:

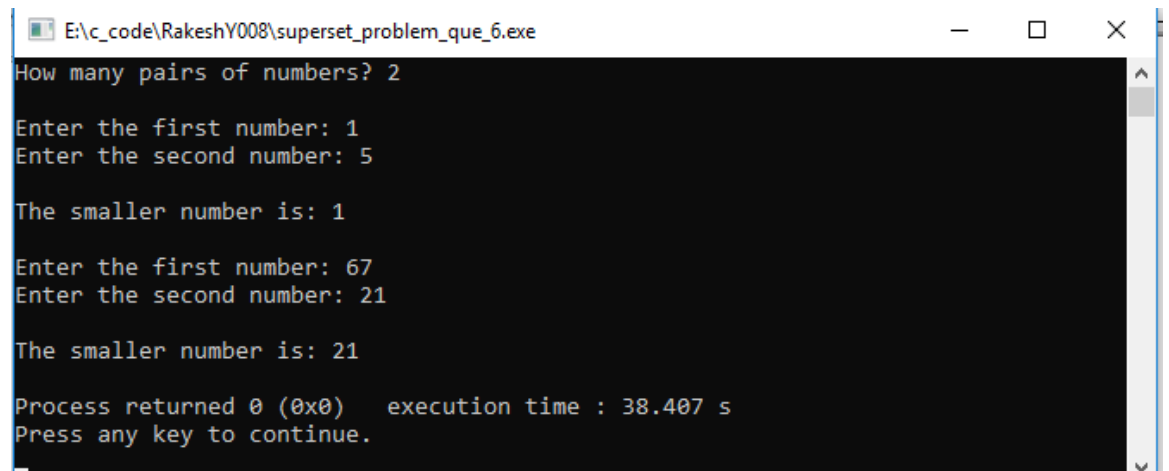
```
E:\c_code\RakeshY008\superset_problem_que_5.e...  
Enter the first number: 5  
Enter the second number: 4  
  
The smaller number is: 4  
Process returned 0 (0x0) execution time : 7.020 s  
Press any key to continue.
```

que.6

```
int smaller(int a, int b);  
  
main()  
{  
    int count, n, a, b, min;  
    printf("How many pairs of numbers? ");  
    scanf("%d", &n);  
    for ( count = 1; count <= n ; ++count )  
    {  
        printf("\nEnter the first number: ");  
        scanf("%d", &a);  
        printf("Enter the second number: ");  
        scanf("%d", &b);  
        min = smaller(a, b);  
        printf("\nThe smaller number is: %d\n", min);  
    }  
}
```

```
}  
  
int smaller(int a, int b)  
{  
    if (a <= b)  
    {  
        return(a);  
    }  
    else  
    {  
        return(b);  
    }  
}
```

OUTOUT:



```
E:\c_code\RakeshY008\superset_problem_que_6.exe  
How many pairs of numbers? 2  
Enter the first number: 1  
Enter the second number: 5  
The smaller number is: 1  
  
Enter the first number: 67  
Enter the second number: 21  
The smaller number is: 21  
  
Process returned 0 (0x0)   execution time : 38.407 s  
Press any key to continue.  
_
```

que.7

```
int smaller(int a, int b);
```

```

main()
{
    int a, b, min;

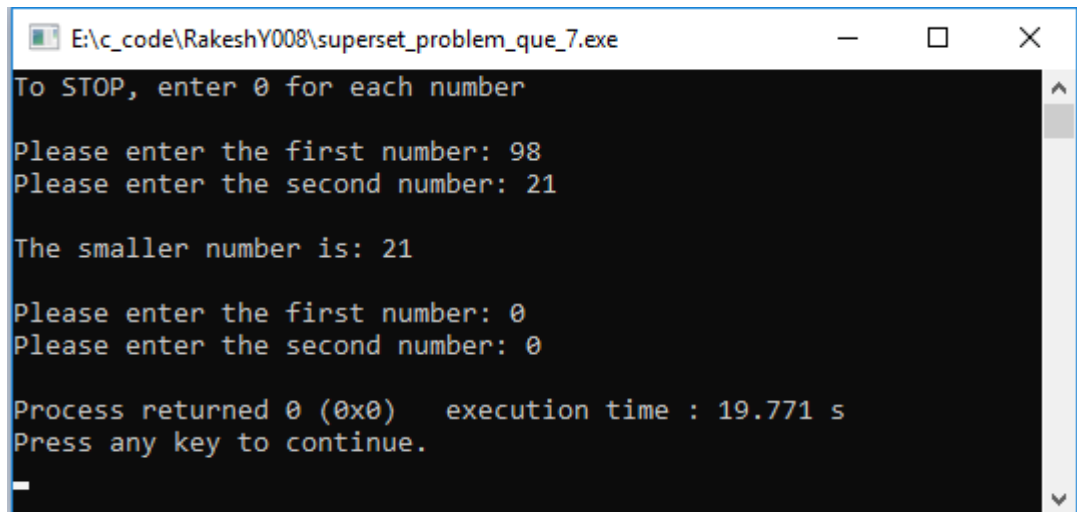
    printf("To STOP, enter 0 for each number\n");
    printf("\nPlease enter the first number: ");
    scanf("%d", &a);
    printf("Please enter the second number: ");
    scanf("%d", &b);
    while (a != 0 || b != 0)
    {
        min = smaller(a, b);
        printf("\nThe smaller number is: %d\n", min);
        printf("\nPlease enter the first number: ");
        scanf("%d", &a);
        printf("Please enter the second number: ");
        scanf("%d", &b);
    }
}

int smaller(int a, int b)
{
    if ( a <= b)
    {
        return(a);
    }
    else
    {

```

```
        return(b);  
    }  
}
```

OUTOUT:



```
E:\c_code\RakeshY008\superset_problem_que_7.exe  
To STOP, enter 0 for each number  
  
Please enter the first number: 98  
Please enter the second number: 21  
  
The smaller number is: 21  
  
Please enter the first number: 0  
Please enter the second number: 0  
  
Process returned 0 (0x0)   execution time : 19.771 s  
Press any key to continue.  
_
```

que.8

```
int smaller(int, int);  
  
main()  
{  
    int n, i = 0;  
    int a[100], b[100], min[100];  
    printf("To STOP, enter 0 for each number\n");  
    printf("\nPlease enter the first number: ");  
    scanf("%d", &a[i]);
```

```

printf("Please enter the second number: ");
scanf("%d", &b[i]);
while (a[i] || b[i])
{
    min[i] = smaller(a[i], b[i]);
    printf("\nThe smaller number is: %d\n", min[i]);
    printf("\nPlease enter the first number: ");
    scanf("%d", &a[++i]);
    printf("Please enter the second number: ");
    scanf("%d", &b[i]);
}
n = --i;
printf("\nSummary of Results\n\n");
for ( i = 0 ; i <= n ; ++i )
{
    printf("a = %d\tb = %d\tmin = %d\n", a[i], b[i], min[i]);
}
}

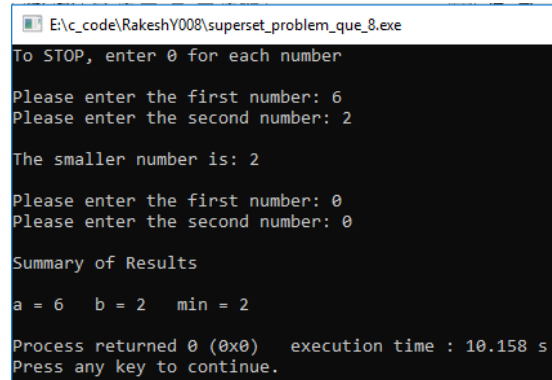
int smaller(int a, int b)
{
    if ( a <= b)
    {
        return(a);
    }
    else
    {

```



```
        return(b);  
    }  
}
```

OUTOUT :



```
E:\c_code\RakeshY008\superset_problem_que_8.exe  
To STOP, enter 0 for each number  
Please enter the first number: 6  
Please enter the second number: 2  
The smaller number is: 2  
Please enter the first number: 0  
Please enter the second number: 0  
Summary of Results  
a = 6    b = 2    min = 2  
Process returned 0 (0x0)    execution time : 10.158 s  
Press any key to continue.  
-
```