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);
}
```

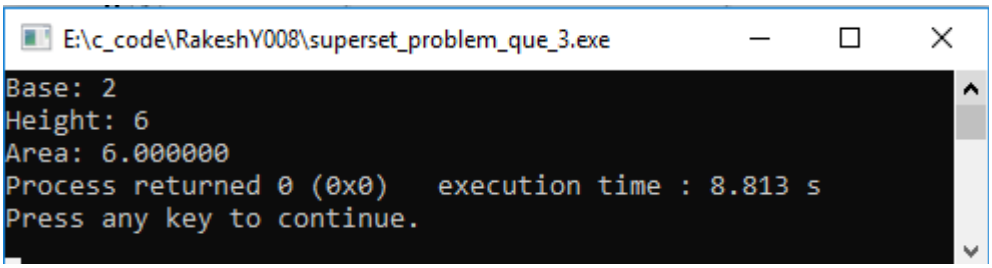
OUTOUT: ***Welcome to the Wonderful World Of Computing!***

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);
}
```

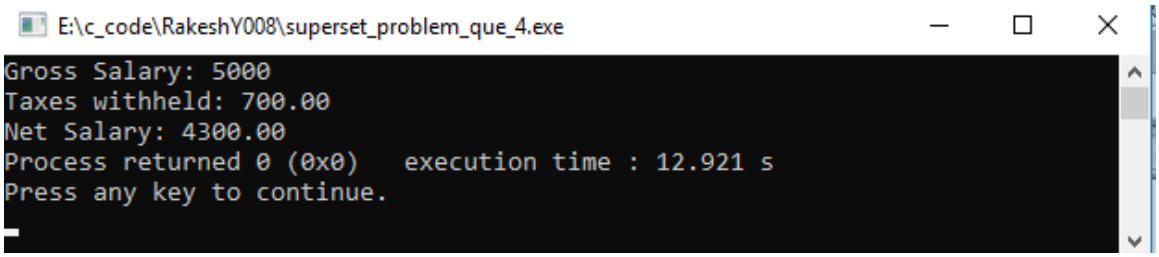
OUTOUT:



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:

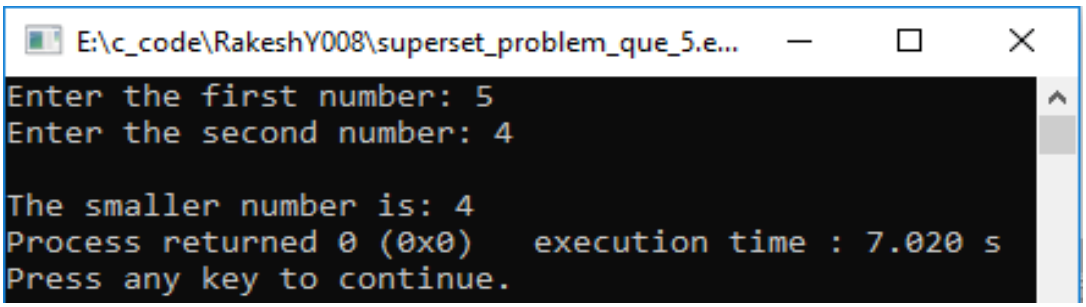


que.5

```
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:

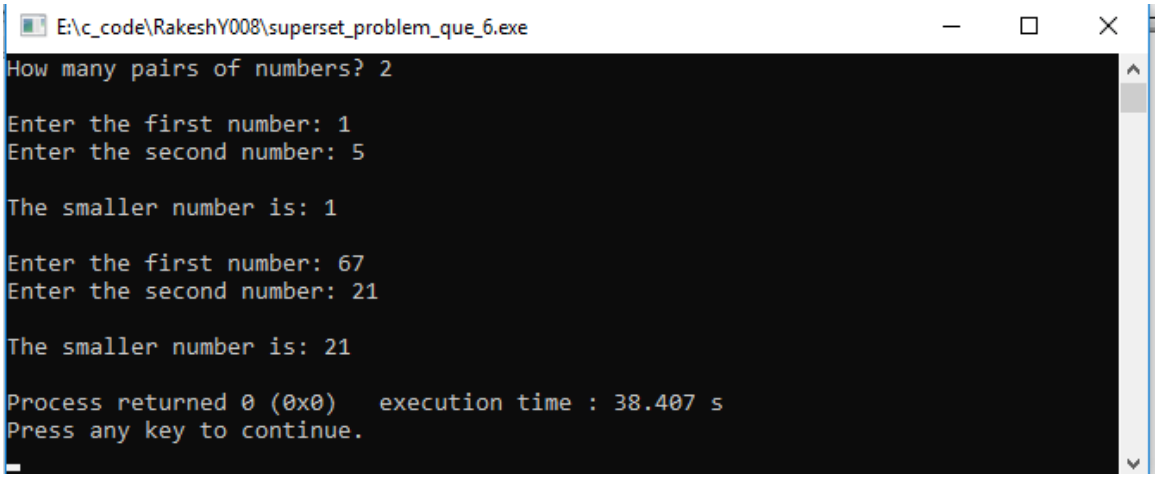


que.6

```
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:



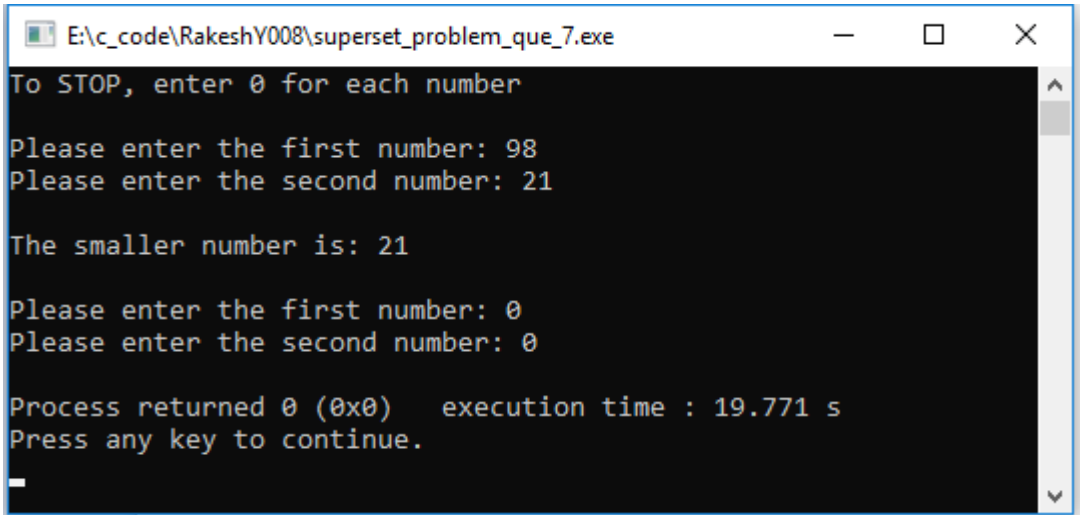
que.7

```
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:



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 :