Assignment Solutions for Basic C Programming

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GitHub Project: hhttps://github.com/Het16-prog/HetThacker25BCL062

Solutions to Assignment Questions

1. Add two numbers

```c
// addtwonumbers.c
#include <stdio.h>

int main() {
    int a, b, sum;
    printf("Enter first number: ");
    scanf("%d", &a);
    printf("Enter second number: ");
    scanf("%d", &b);
    sum = a + b;
    printf("The sum is %d\n", sum);
    return 0;
}
```

Sample Output:

```
Enter first number: 10
Enter second number: 20
The sum is 30
```

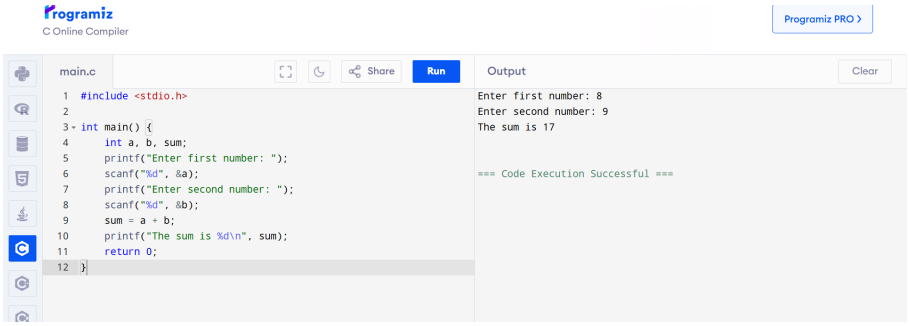

Figure 1: Q1 SAMPLE OUTPUT

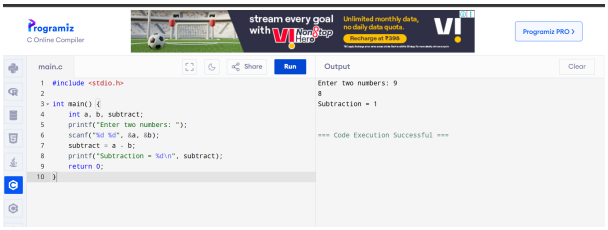

Figure 2: Q2 SAMPLE OUTPUT

2. Subtract two numbers

```c
// subtracttwonumbers.c
#include <stdio.h>

int main() {
    int a, b, subtract;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    subtract = a - b;
    printf("Subtraction = %d\n", subtract);
    return 0;
}
```

Sample Output:

```
Enter two numbers: 35 5
Subtraction = 30
```

3. Multiply two numbers

```c
// multiplytwonumbers.c
#include <stdio.h>

int main() {
    int a, b, multiply;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    multiply = a * b;
    printf("Answer = %d\n", multiply);
    return 0;
}
```

Sample Output:

```
Enter two numbers: 3 4
Answer = 12
```

4. Divide two numbers

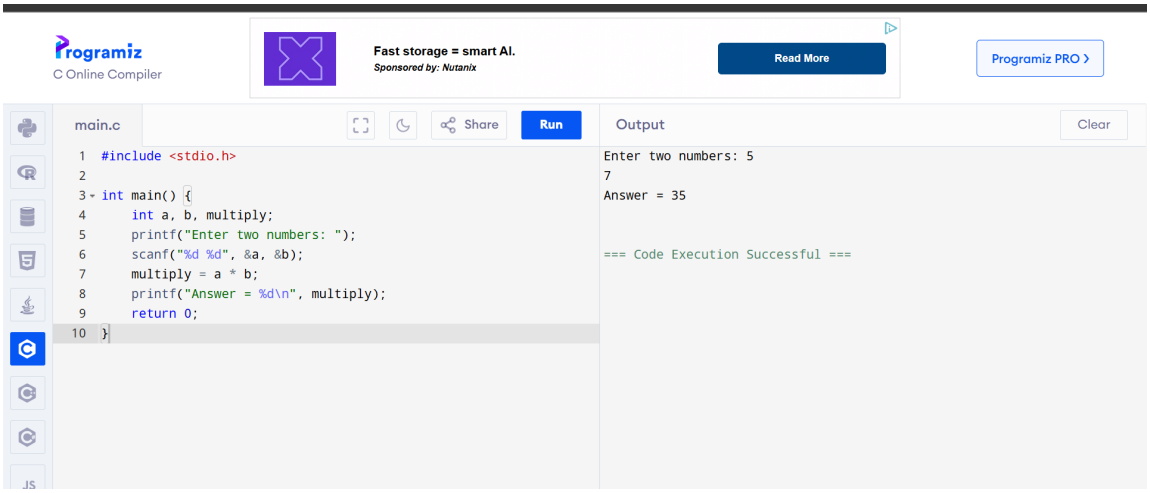

Figure 3: Q3 SAMPLE OUTPUT

Figure 4: Q4 SAMPLE OUTPUT

```c
// divide.c
#include <stdio.h>

int main() {
    int a, b;
    float divide;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    divide = (float)a / b;
    printf("Answer = %.2f\n", divide);
    return 0;
}
```

Sample Output:

```
Enter two numbers: 10 2
Answer = 5
```

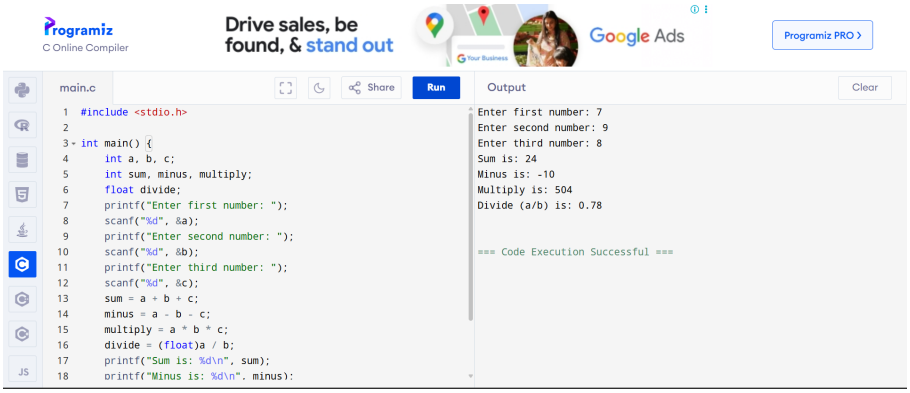

Figure 5: Q 5 SAMPLE OUTPUT

5. Perform all four operations

```c
// allfour.c
#include <stdio.h>

int main() {
    int a, b, c;
    int sum, minus, multiply;
    float divide;
    printf("Enter first number: ");
    scanf("%d", &a);
    printf("Enter second number: ");
    scanf("%d", &b);
    printf("Enter third number: ");
    scanf("%d", &c);
    sum = a + b + c;
    minus = a - b - c;
    multiply = a * b * c;
    divide = (float)a / b;
    printf("Sum is: %d\n", sum);
    printf("Minus is: %d\n", minus);
    printf("Multiply is: %d\n", multiply);
    printf("Divide (a/b) is: %.2f\n", divide);
    return 0;
}
```

Sample Output:

```
Enter first number: 5
Enter second number: 4
Enter third number: 3
Sum is: 12
Minus is: -2
Multiply is: 60
Divide (a/b) is: 1.25
```

6. Convert hours into minutes

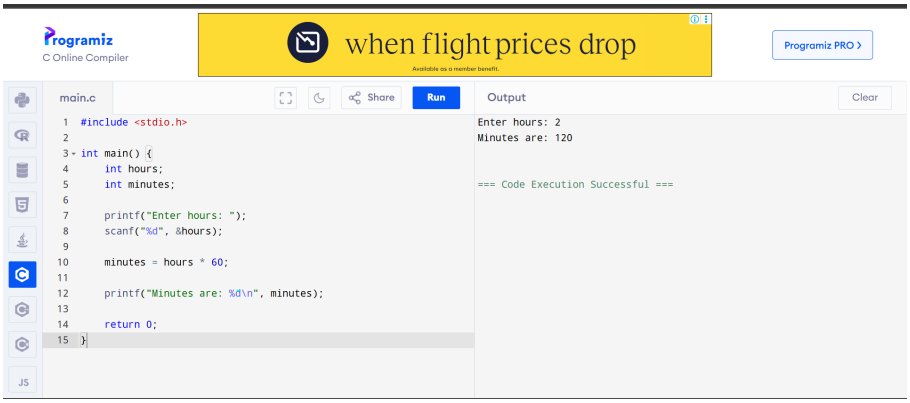

Figure 6: Q6 SAMPLE OUTPUT

```c
// hours-to-minutes.c
#include <stdio.h>

int main() {
    int hours;
    int minutes;

    printf("Enter hours: ");
    scanf("%d", &hours);

    minutes = hours * 60;

    printf("Minutes are: %d\n", minutes);

    return 0;
}
```

Sample Output:

```
Enter hours: 3
Minutes are: 180
```

7. Convert minutes into hours

```c
// mins-to-hours.c
#include <stdio.h>

int main() {
    int minutes;
    int hours;

    printf("Enter minutes: ");
    scanf("%d", &minutes);

    hours = minutes / 60;

```

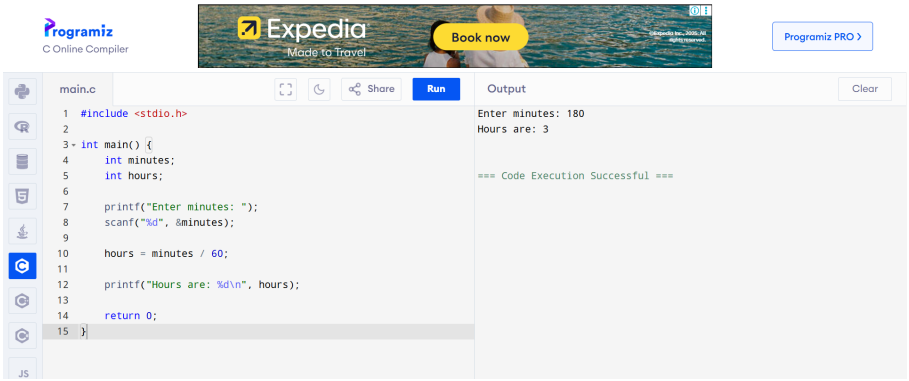

Figure 7: Q7 SAMPLE OUTPUT

```
    printf("Hours are: %d\n", hours);

    return 0;
}
```

Sample Output:

```
Enter minutes: 120
Hours are: 2
```

8. Convert dollars into Rs. (1$ = 48 Rs)

```
// dollars2rs.c
#include <stdio.h>

int main() {
    int dollars;
    int rupees;

    printf("Enter dollars: ");
    scanf("%d", &dollars);

    rupees = dollars * 48;

    printf("Rupees are: %d\n", rupees);

    return 0;
}
```

Sample Output:

```
Enter dollars: 10
Rupees are: 480
```

9. Convert Rs. into dollars

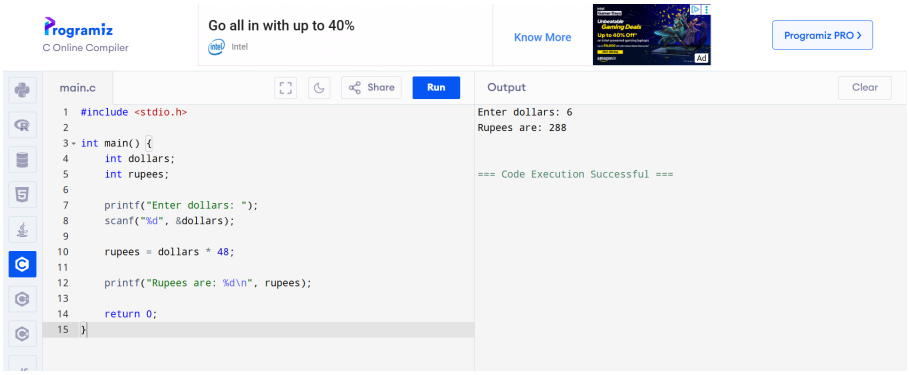

Figure 8: Q8 sample output

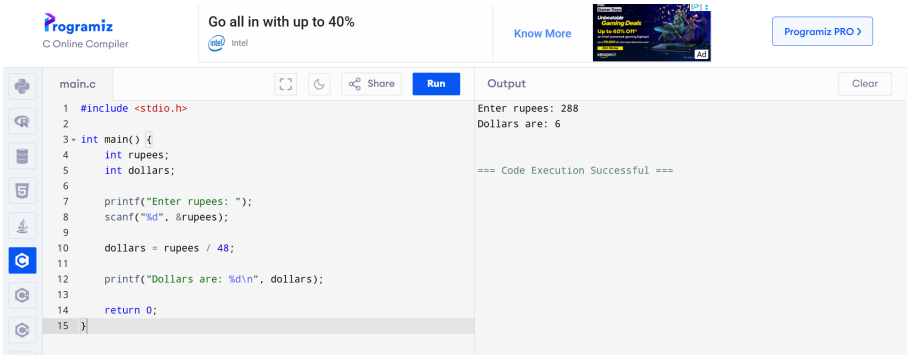

Figure 9: Q9 SAMPLE OUTPUT

```c
// INR2USD.c
#include <stdio.h>

int main() {
    int rupees;
    int dollars;

    printf("Enter rupees: ");
    scanf("%d", &rupees);

    dollars = rupees / 48;

    printf("Dollars are: %d\n", dollars);

    return 0;
}
```

Sample Output:

```
Enter rupees: 960
Dollars are: 20
```

10. Convert dollars into pounds (1$=48Rs, 1 pound=70Rs)

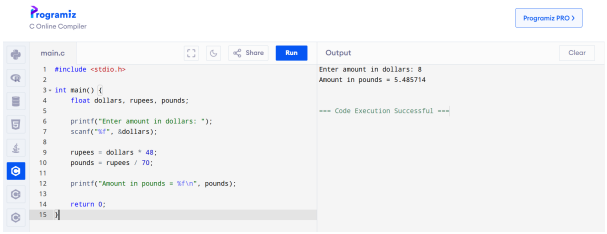

Figure 10: Q10 sample output

```c
// usd2ukpounds.c
#include <stdio.h>

int main() {
    float dollars, rupees, pounds;

    printf("Enter amount in dollars: ");
    scanf("%f", &dollars);

    rupees = dollars * 48;
    pounds = rupees / 70;

    printf("Amount in pounds = %f\n", pounds);

    return 0;
}
```

Sample Output:

```
Enter amount in dollars: 10
Amount in pounds = 6.857143
```

11. Convert grams into kg

```c
// grams2kg.c
#include <stdio.h>

int main() {
    float grams, kg;

    printf("Enter weight in grams: ");
    scanf("%f", &grams);

    kg = grams / 1000;

    printf("Weight in kilograms = %f\n", kg);

    return 0;
}
```

Sample Output:

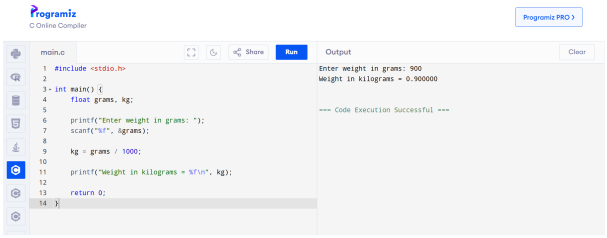

Figure 11: Q11 sample output

Figure 12: Q12 sample output

```
Enter weight in grams: 2000
Weight in kilograms = 2.000000
```

12. Convert kg into grams

```c
// kg2grams.c
#include <stdio.h>

int main() {
    float kg, grams;

    printf("Enter weight in kilograms: ");
    scanf("%f", &kg);

    grams = kg * 1000;

    printf("Weight in grams = %f\n", grams);

    return 0;
}
```

Sample Output:

```
Enter weight in kilograms: 4.5
Weight in grams = 4500.00
```

13. Convert bytes into KB, MB, GB

```c
// bytes2KBMBGB.c
#include <stdio.h>

```

Figure 13: Q13 sample output

```c
int main() {
    float bytes, kb, mb, gb;

    printf("Enter size in bytes: ");
    scanf("%f", &bytes);

    kb = bytes / 1024;
    mb = kb / 1024;
    gb = mb / 1024;

    printf("Size in KB = %f\n", kb);
    printf("Size in MB = %f\n", mb);
    printf("Size in GB = %f\n", gb);

    return 0;
}
```

Sample Output:

```
Enter size in bytes: 1048576
Size in KB = 1024.000000
Size in MB = 1.000000
Size in GB = 0.000977
```

14. Celsius to Fahrenheit

```c
// celcius2farenheit.c
#include <stdio.h>

int main() {
    float celsius, fahrenheit;

    printf("Enter temperature in Celsius: ");
    scanf("%f", &celsius);

    fahrenheit = (9.0 / 5.0) * celsius + 32;

    printf("Temperature in Fahrenheit = %f\n", fahrenheit);

    return 0;
}
```

Figure 14: Q14 sample output

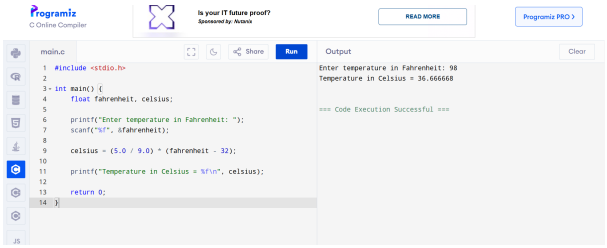

Figure 15: Q15 sample output

Sample Output:

```
Enter temperature in Celsius: 100
Temperature in Fahrenheit = 212.000000
```

15. Fahrenheit to Celsius

```c
// farenheit2celcius.c
#include <stdio.h>

int main() {
    float fahrenheit, celsius;

    printf("Enter temperature in Fahrenheit: ");
    scanf("%f", &fahrenheit);

    celsius = (5.0 / 9.0) * (fahrenheit - 32);

    printf("Temperature in Celsius = %f\n", celsius);

    return 0;
}
```

Sample Output:

```
Enter temperature in Fahrenheit: 212
Temperature in Celsius = 100.000000
```

16. Calculate interest

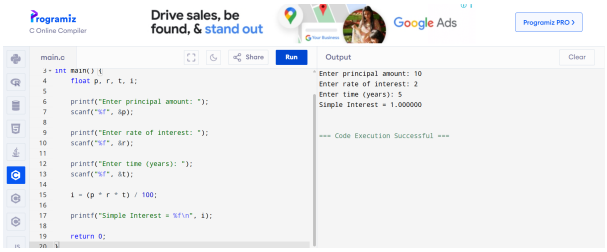

Figure 16: q 16 sample output

```c
// si_calculator.c
#include <stdio.h>

int main() {
    float p, r, t, i;

    printf("Enter principal amount: ");
    scanf("%f", &p);

    printf("Enter rate of interest: ");
    scanf("%f", &r);

    printf("Enter time (years): ");
    scanf("%f", &t);

    i = (p * r * t) / 100;

    printf("Simple Interest = %f\n", i);

    return 0;
}
```

Sample Output:

```
Enter principal amount: 10000
Enter rate of interest: 5
Enter time (years): 3
Simple Interest = 1500.000000
```

17. Area & perimeter of a square

```c
// area_and_perimeter_of_square.c
#include <stdio.h>

int main() {
    float L, area, perimeter;

    printf("Enter side length of square: ");
    scanf("%f", &L);

```

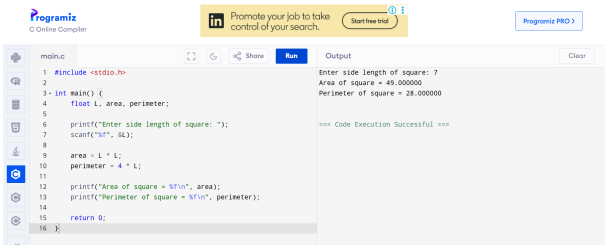

Figure 17: Q17 sample output

```c
    area = L * L;
    perimeter = 4 * L;

    printf("Area of square = %f\n", area);
    printf("Perimeter of square = %f\n", perimeter);

    return 0;
}
```

Sample Output:

```
Enter side length of square: 6
Area of square = 36.000000
Perimeter of square = 24.000000
```

18. Area & perimeter of a rectangle

```c
// area_and_perimeter_of_rectangle.c
#include <stdio.h>

int main() {
    float L, B, area, perimeter;

    printf("Enter length of rectangle: ");
    scanf("%f", &L);

    printf("Enter breadth of rectangle: ");
    scanf("%f", &B);

    area = L * B;
    perimeter = 2 * (L + B);

    printf("Area of rectangle = %f\n", area);
    printf("Perimeter of rectangle = %f\n", perimeter);

    return 0;
}
```

Sample Output:

```
Enter length of rectangle: 6
```

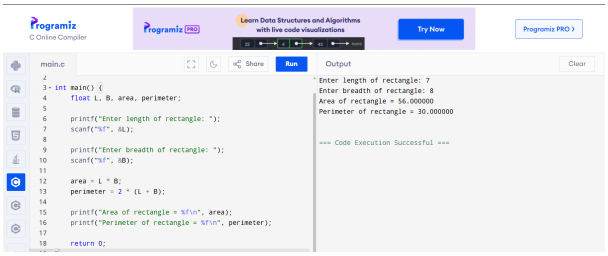

Figure 18: Q18 sample output

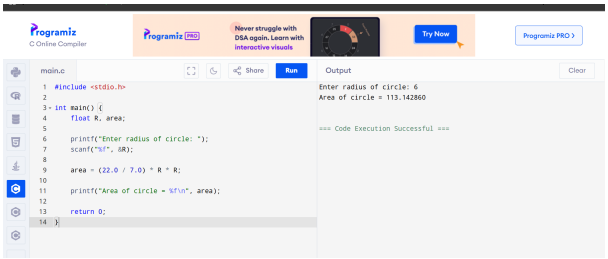

Figure 19: Q19 sample output

```
Enter breadth of rectangle: 5
Area of rectangle = 30.000000
Perimeter of rectangle = 22.000000
```

19. Area of a circle

```c
// area_circle.c
#include <stdio.h>

int main() {
    float R, area;

    printf("Enter radius of circle: ");
    scanf("%f", &R);

    area = (22.0 / 7.0) * R * R;

    printf("Area of circle = %f\n", area);

    return 0;
}
```

Sample Output:

```
Enter radius of circle: 7
Area of circle = 153.142853
```

20. Area of a triangle

```c
// area_triangle.c
```

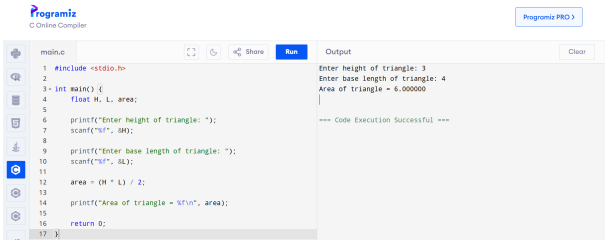

Figure 20: Q20 sample output

```c
#include <stdio.h>

int main() {
    float H, L, area;

    printf("Enter height of triangle: ");
    scanf("%f", &H);

    printf("Enter base length of triangle: ");
    scanf("%f", &L);

    area = (H * L) / 2;

    printf("Area of triangle = %f\n", area);

    return 0;
}
```

Sample Output:

```
Enter height of triangle: 5
Enter base length of triangle: 8
Area of triangle = 20.000000
```

21. Net salary (Allowance=10%, Deduction=3%)

```c
// net_salary_calculation.c
#include <stdio.h>

int main() {
    float gross, allowance, deduction, net;

    printf("Enter gross salary: ");
    scanf("%f", &gross);

    allowance = gross * 0.10;
    deduction = gross * 0.03;

    net = gross + allowance - deduction;

    printf("Net Salary = %f\n", net);
```

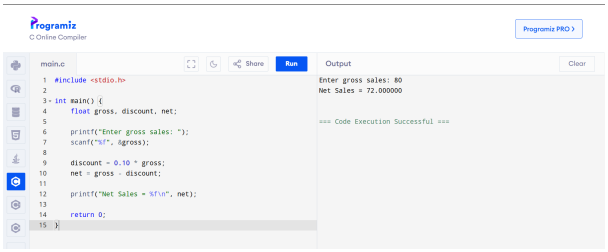

Figure 21: Q21 sample output

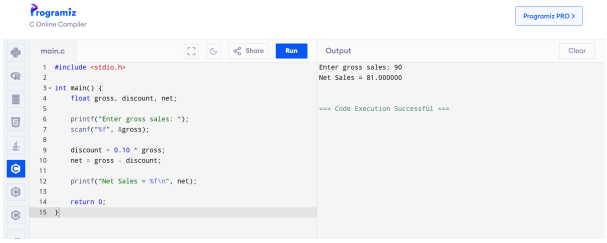

Figure 22: Q22 sample output

```
16
17      return 0;
18  }
```

Sample Output:

```
Enter gross salary: 20000
Net Salary = 21400.000000
```

22. Net sales with 10% discount

```
1   // net_sales.c
2   #include <stdio.h>
3
4   int main() {
5       float gross, discount, net;
6
7       printf("Enter gross sales: ");
8       scanf("%f", &gross);
9
10      discount = 0.10 * gross;
11      net = gross - discount;
12
13      printf("Net Sales = %f\n", net);
14
15      return 0;
16  }
```

Sample Output:

```
Enter gross sales: 50000
Net Sales = 45000.000000
```

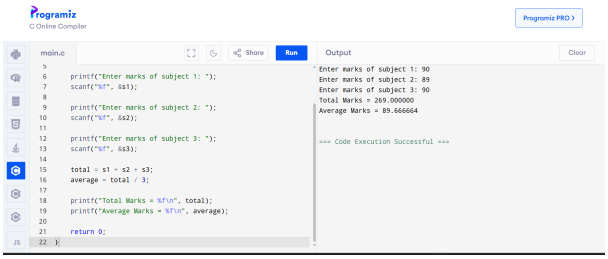

Figure 23: Q23 sample output

23. Average & total of three subjects

```c
// avg_of_3subjects.c
#include <stdio.h>

int main() {
    float s1, s2, s3, total, average;

    printf("Enter marks of subject 1: ");
    scanf("%f", &s1);

    printf("Enter marks of subject 2: ");
    scanf("%f", &s2);

    printf("Enter marks of subject 3: ");
    scanf("%f", &s3);

    total = s1 + s2 + s3;
    average = total / 3;

    printf("Total Marks = %f\n", total);
    printf("Average Marks = %f\n", average);

    return 0;
}
```

Sample Output:

```
Enter marks of subject 1: 70
Enter marks of subject 2: 80
Enter marks of subject 3: 90
Total Marks = 240.000000
Average Marks = 80.000000
```

24. Swap two values

```c
// swap_2_values.c
#include <stdio.h>

int main() {
```

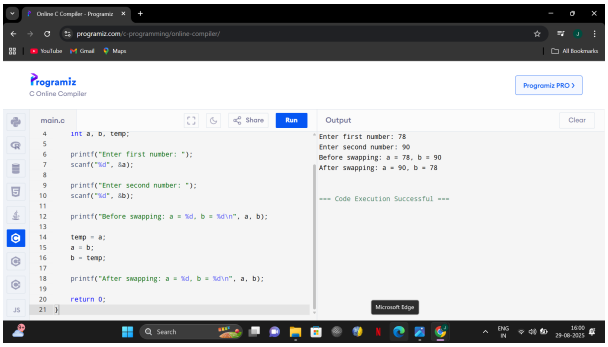

Figure 24: Q24 SAMPLE OUTPUT

```c
    int a, b, temp;

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

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

    printf("Before swapping: a = %d, b = %d\n", a, b);

    temp = a;
    a = b;
    b = temp;

    printf("After swapping: a = %d, b = %d\n", a, b);

    return 0;
}
```

Sample Output:

```
Enter first number: 10
Enter second number: 20
Before swapping: a = 10, b = 20
After swapping: a = 20, b = 10
```