Assignment Solutions for Basic C Programming

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GitHub Project: https://github.com/kashishmakwana564cprogramming/kashishmakwana_25BCl036/tree/main/lab

Solutions to Assignment Questions

1. Add two numbers

```c
// add.c
#include <stdio.h>
int main() {
    int a, b;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    printf("Sum = %d\n", a + b);
    return 0;
}
```

Sample Output:

```
Enter first number: 5
Enter second number: 7
The sum is 12
```

2. Subtract two numbers

```c
// sub.c
#include <stdio.h>
int main() {
    int a, b;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    printf("Difference = %d\n", a - b);
    return 0;
}
```

Sample Output:

```
Enter two numbers: 10 3
Subtraction = 7
```

3. Multiply two numbers

```c
// mul.c
#include <stdio.h>
int main() {
    int a, b;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    printf("Product = %d\n", a * b);
    return 0;
}
```

Sample Output:

```
Enter two numbers: 6 4
Answer = 24
```

4. Divide two numbers

```c
// div.c
#include <stdio.h>
int main() {
    int a, b;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    if (b != 0)
        printf("Quotient = %.2f\n", (float)a / b);
    else
        printf("Division by zero not allowed.\n");
    return 0;
}
```

Sample Output:

```
Enter two numbers: 7 2
Answer = 3.50
```

5. Perform all four operations

```c
// all four.c
#include <stdio.h>
int main() {
    int a, b;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    printf("Sum = %d\n", a + b);
    printf("Difference = %d\n", a - b);
    printf("Product = %d\n", a * b);
    if (b != 0)
        printf("Quotient = %.2f\n", (float)a / b);
    else
```

```
        printf("Division by zero not allowed.\n");
    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

```
// hortomin.c
#include <stdio.h>
int main() {
    int hours;
    printf("Enter hours: ");
    scanf("%d", &hours);
    printf("Minutes = %d\n", hours * 60);
    return 0;
}
```

Sample Output:

```
Enter hours: 2
Minutes are: 120
```

7. Convert minutes into hours

```
// mintohor.c
#include <stdio.h>
int main() {
    int minutes;
    printf("Enter minutes: ");
    scanf("%d", &minutes);
    printf("Hours = %d\n", minutes / 60);
    return 0;
}
```

Sample Output:

```
Enter minutes: 180
Hours are: 3
```

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

```c
// doltors.c
#include <stdio.h>
int main() {
    int dollars;
    printf("Enter dollars: ");
    scanf("%d", &dollars);
    printf("Rupees = %d\n", dollars * 48);
    return 0;
}
```

Sample Output:

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

9. Convert Rs. into dollars

```c
// rstodol.c
#include <stdio.h>
int main() {
    int rupees;
    printf("Enter rupees: ");
    scanf("%d", &rupees);
    printf("Dollars = %d\n", rupees / 48);
    return 0;
}
```

Sample Output:

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

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

```c
// doltopou.c
#include <stdio.h>
int main() {
    int dollars;
    printf("Enter dollars: ");
    scanf("%d", &dollars);
    int pounds = (dollars * 48) / 70;
    printf("Pounds = %d\n", pounds);
    return 0;
}
```

Sample Output:

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

11. Convert grams into kg

```c
// grmtokg.c
#include <stdio.h>
int main() {
    int grams;
    printf("Enter grams: ");
    scanf("%d", &grams);
    printf("Kg = %d\n", grams / 1000);
    return 0;
}
```

Sample Output:

```
Enter weight in grams: 1500
Weight in kilograms = 1.500000
```

12. Convert kg into grams

```c
// kgtogrm.c
#include <stdio.h>
int main() {
    int kg;
    printf("Enter kg: ");
    scanf("%d", &kg);
    printf("Grams = %d\n", kg * 1000);
    return 0;
}
```

Sample Output:

```
Enter weight in kilograms: 2.5
Weight in grams = 2500.00
```

13. Convert bytes into KB, MB, GB

```c
// mbgbkb.c
#include <stdio.h>
int main() {
    long bytes;
    printf("Enter bytes: ");
    scanf("%ld", &bytes);
    printf("KB = %ld\n", bytes / 1024);
    printf("MB = %ld\n", bytes / (1024 * 1024));
    printf("GB = %ld\n", bytes / (1024 * 1024 * 1024));
    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
// celtofahr.c
#include <stdio.h>
int main() {
    float c, f;
    printf("Enter Celsius: ");
    scanf("%f", &c);
    f = (9.0/5)*c + 32;
    printf("Fahrenheit = %.2f\n", f);
    return 0;
}
```

Sample Output:

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

15. Fahrenheit to Celsius

```c
// fahretocel.c
#include <stdio.h>
int main() {
    float f, c;
    printf("Enter Fahrenheit: ");
    scanf("%f", &f);
    c = (5.0/9)*(f - 32);
    printf("Celsius = %.2f\n", c);
    return 0;
}
```

Sample Output:

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

16. Calculate interest

```c
// si_calculator.c
#include <stdio.h>
int main() {
    float P, R, N, I;
    printf("Enter Principal, Rate, Time: ");
    scanf("%f %f %f", &P, &R, &N);
    I = P * R * N / 100;
```

```c
    printf("Interest = %.2f\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() {
    int side;
    printf("Enter side: ");
    scanf("%d", &side);
    printf("Area = %d\n", side * side);
    printf("Perimeter = %d\n", 4 * side);
    return 0;
}
```

Sample Output:

```
Enter side length of square: 5
Area of square = 25.000000
Perimeter of square = 20.000000
```

18. Area & perimeter of a rectangle

```c
// area_and_perimeter_of_rectangle.c
#include <stdio.h>
int main() {
    int l, w;
    printf("Enter length and width: ");
    scanf("%d %d", &l, &w);
    printf("Area = %d\n", l * w);
    printf("Perimeter = %d\n", 2 * (l + w));
    return 0;
}
```

Sample Output:

```
Enter length of rectangle: 6
Enter breadth of rectangle: 4
Area of rectangle = 24.000000
Perimeter of rectangle = 20.000000
```

19. Area of a circle

```c
// area_circle.c
#include <stdio.h>
int main() {
    int r;
    printf("Enter radius: ");
    scanf("%d", &r);
    printf("Area = %.2f\n", 3.14 * r * r);
    return 0;
}
```

Sample Output:

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

20. Area of a triangle

```c
// area_triangle.c
#include <stdio.h>
int main() {
    int base, h;
    printf("Enter base and height: ");
    scanf("%d %d", &base, &h);
    printf("Area = %.2f\n", 0.5 * base * h);
    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 salary;
    printf("Enter basic salary: ");
    scanf("%f", &salary);
    float net = salary + (0.10 * salary) - (0.03 * salary);
    printf("Net Salary = %.2f\n", net);
    return 0;
}
```

Sample Output:

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

22. Net sales with 10% discount

```c
// net_sales.c
#include <stdio.h>
int main() {
    float price;
    printf("Enter price: ");
    scanf("%f", &price);
    float net = price - (0.10 * price);
    printf("Net Sales = %.2f\n", net);
    return 0;
}
```

Sample Output:

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

23. Average & total of three subjects

```c
// avg_of_3subjects.c
#include <stdio.h>
int main() {
    float s1, s2, s3, total, avg;
    printf("Enter marks of 3 subjects: ");
    scanf("%f %f %f", &s1, &s2, &s3);
    total = s1 + s2 + s3;
    avg = total / 3;
    printf("Total = %.2f, Average = %.2f\n", total, avg);
    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() {
    int a, b, temp;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    temp = a;
    a = b;
    b = temp;
```

```
10      printf("After swap: a = %d, b = %d\n", a, b);
11      return 0;
12  }
```

Sample Output:

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