Assignment Solutions for Basic C Programming

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GitHub Project: https://github.com/krishvasava1417-ui/krishvasava_014

Solutions to Assignment Questions

1. Add two numbers

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

Sample Output:

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

2. Subtract two numbers

```c
// subtracttwonumbers.c
#include <stdio.h>
int main()
{
int a=23, b=15, subtract ;
printf("a= ");
scanf("%d", &a);
printf("b=");
scanf("%d", &b);
subtract = a - b;
```

```
printf("Subtraction = %d\n", subtract );
return 0;
}
```

3. Multiply two numbers

```
// multiplytwonumbers.c
#include <stdio.h>
int main() {
int a=23, b=15, Multiplication ;
printf("a=");
scanf("%d", &a);
printf("b=");
scanf("%d" , &b);
Multiplication = a * b;
printf("Multiplication = %d\n", Multiplication );
return 0;
}
```

4. Divide two numbers

```
// divide.c
#include <stdio.h>
int main() {
int a, b;
float Divide ;
printf("a=");
scanf("%d", &a);
printf("b=");
scanf("%d" , &b);
Divide = a / b;
printf("Division = %f\n", Divide);
return 0;
}
```

Sample Output:

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

5. Perform all four operations

```
// allfour.c
#include <stdio.h>
int main() {
int a=23, b=15, sum, sub, multiply;
float Divide ;
printf("a=");
scanf("%d", &a);
```

```c
printf("b=");
scanf("%d" , &b);
sum= a + b;
printf("sum = %d\n",sum);
sub= a - b;
printf("Subtraction = %d\n",sub);
multiply= a * b;
printf("Multiplication = %d\n",multiply);
Divide = a / b;
printf("Division = %f\n", Divide);
return 0;
}
```

6. Convert hours into minutes

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

Sample Output:

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

7. Convert minutes into hours

```c
// mins-to-hours.c
#include <stdio.h>
int main()
{
int minutes;
float hours;
printf("enter minutes = ");
scanf("%d", &minutes);
hours = minutes / 60.0f;
printf("Hours = %f\n", hours);
return 0;
}
```

Sample Output:

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

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

```c
// dollars2rs.c
#include <stdio.h>
int main() {
float dollars, rupees;
printf("Enter how much doller = ");
scanf("%f", &dollars);
rupees = dollars * 48.0f;
printf("Rupees = %f\n", rupees);
return 0;
}
```

Sample Output:

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

9. Convert Rs. into dollars

```c
// INR2USD.c
#include <stdio.h>
int main() {
float rupees, dollars;
printf("Enter rupees= ");
scanf("%f", &rupees);
dollars = rupees / 48.0f;
printf("Dollars = %f\n", dollars);
return 0;
}
```

Sample Output:

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

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

```c
// usd2ukpounds.c
#include <stdio.h>
int main() {
float dollars, rupees, pounds;
printf("Enter dollars= ");
scanf("%f", &dollars);
rupees = dollars * 48.0f;
pounds = rupees / 70.0f;
printf("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:

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

12. Convert kg into grams

```c
// kg2grams.c
#include <stdio.h>
int main() {
float kg, grams;
printf("Enter kilograms= ");
scanf("%f", &kg);
grams = kg * 1000.0f;
printf("Grams = %f\n", grams);
return 0;
}
```

Sample Output:

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

13. Convert bytes into KB, MB, GB

```c
// bytes2KBMBGB.c
#include <stdio.h>
int main() {
double bytes, KB, MB, GB;
printf("Enter bytes=");
scanf("%lf", &bytes);
KB = bytes / 1024.0;
MB = bytes / (1024.0 * 1024.0);
GB = bytes / (1024.0 * 1024.0 * 1024.0);
```

```c
printf("KB = %.2f\n", KB);
printf("MB = %.2f\n", MB);
printf("GB = %.2f\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 Celsius= ");
scanf("%f", &celsius);
fahrenheit = (9.0f / 5.0f) * celsius + 32.0f;
printf("Fahrenheit = %.2f\n", fahrenheit);
return 0;
}
```

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 Fahrenheit= ");
scanf("%f", &fahrenheit);
celsius = (5.0f / 9.0f) * (fahrenheit - 32.0f);
printf("Celsius = %.2f\n", celsius);
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 (P)=");
scanf("%f",&P);
printf("Enter rate(in%) =");
scanf("%f" ,&R);
printf("Enter time(in year)=");
scanf("%f" ,&N);
I = (P * R * N) / 100.0f;
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() {
float L, A, P;
printf("Enter side length (L)= ");
scanf("%f", &L);
A = L * L;
P = 4 * L;
printf("Area = %.2f\n", A);
printf("Perimeter = %.2f\n", P);
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() {
float L, B, A, P;
```

```c
printf("Enter length (L)= ");
scanf("%f" ,&L);
printf("breadth (B)= ");
scanf("%f",&B);
A = L * B;
P = 2 * (L + B);
printf("Area = %.2f\n", A);
printf("Perimeter = %.2f\n", P);
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() {
float R, A;
printf("Enter radius (R)= ");
scanf("%f", &R);
A = (22.0f / 7.0f) * R * R;
printf("Area = %.2f\n", A);
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() {
float H, L, A;
printf("Enter height (H) = ");
scanf("%f", &H);
printf("Enter base (L)=");
scanf("%f", &L);
A = (H * L) / 2.0f;
printf("Area = %.2f\n", A);
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 = 0.10f * gross;
deduction = 0.03f * gross;
net = gross + allowance - deduction;
printf("Allowance (10%%) = %.2f\n", allowance);
printf("Deduction (3%%) = %.2f\n", deduction);
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 gross, discount, net;
printf("Enter gross sales: ");
scanf("%f", &gross);
discount = 0.10f * gross;
net = gross - discount;
printf("Discount (10%%) = %.2f\n", discount);
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 subject1, subject2, subject3, total, avg;
printf("Enter mark of  subject one= ");
scanf("%f", &subject1);
printf("Enter mark of subject two=");
scanf("%f", &subject2);
printf("Enter mark of subject three=");
scanf("%f", &subject3);
total = subject1 + subject2 + subject3;
avg = total / 3.0f;
printf("Total = %.2f\n", total);
printf("Average = %.2f\n", 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 a integer= ");
scanf("%d", &a);
printf("Enter b integer=");
scanf("%d",&b);
printf("Before swap: a = %d, b = %d\n", a, b);
temp = a;
a = b;
b = temp;
printf("After swap: 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
```