DS Practicals

Sem 3

Batch 31

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Q-1 Gross Salary Problem

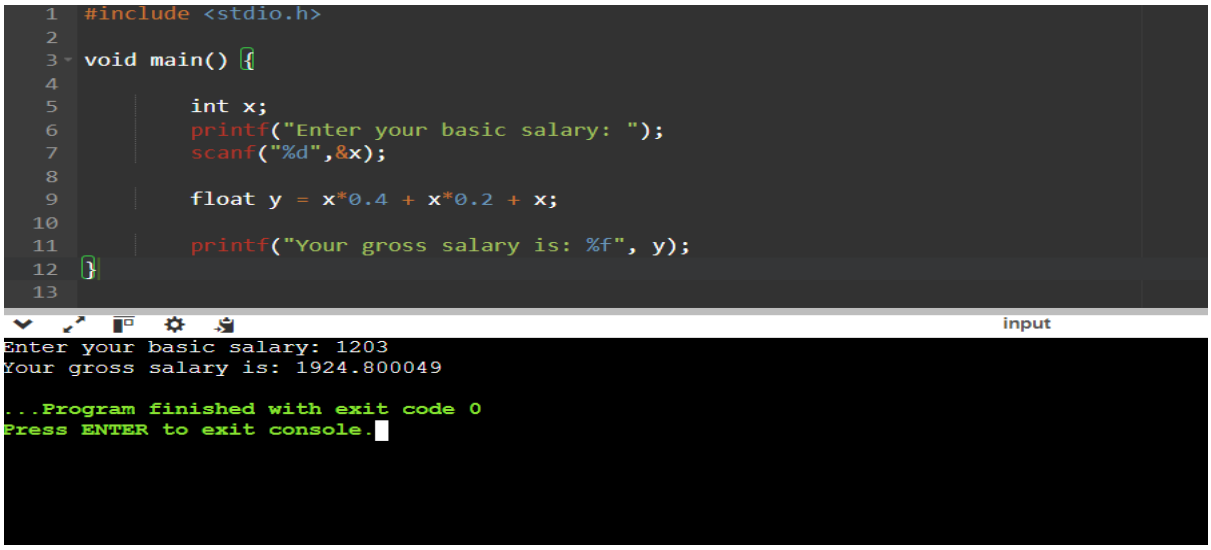
In a company an employee is paid as under:

Along with the basic salary, the employee would be given dearness allowance of 40% of his basic salary and house rent allowance of 20% of his basic salary. If the basic salary of an employee is received as input, write a program to find his/her gross salary.

Code:

```
#include <stdio.h>
void main() {
    int x;
    printf("Enter your basic salary: ");
    scanf("%d",&x);
    float y = x*0.4 + x*0.2 + x;
    printf("Your gross salary is: %f", y);
}
```

Screenshot:



Q-2 Conversion Problem

The distance between two cities (in km.) would be given by the user. Write a program to convert and print this distance in:

1. Feet.
2. Meters.
3. Inches.
4. Centimeters.

Code:

```
#include <stdio.h>
void main() {

   float x;
   printf("Enter your distance in km: ");
   scanf("%f",&x);

   float feet = x*3280.84;
   float inch = x*39370.08;
   float m = x*1000;
   float cm = x*100000;

   printf("Your distance in feet is: %f\n", feet);
   printf("Your distance in inch is: %f\n", inch);
   printf("Your distance in meters is: %f\n", m);
   printf("Your distance in centimeters is: %f\n", cm);

   }
```

Screenshot:

```c
#include <stdio.h>

void main() {

    float x;
    printf("Enter your distance in km: ");
    scanf("%f",&x);

    float feet = x*3280.84;
    float inch = x*39370.08;
    float m = x*1000;
    float cm = x*100000;

    printf("Your distance in feet is: %f\n", feet);
    printf("Your distance in inch is: %f\n", inch);
    printf("Your distance in meters is: %f\n", m);
    printf("Your distance in centimeters is: %f\n", cm);


}
```

input

```
Enter your distance in km: 50
Your distance in feet is: 164042.000000
Your distance in inch is: 1968504.000000
Your distance in meters is: 50000.000000
Your distance in centimeters is: 5000000.000000


...Program finished with exit code 0
Press ENTER to exit console.
```

Q-3 Marks Calculator

A student enters his/her marks of 5 subjects in a program.

Assume that the maximum marks that can be obtained by a student in each subject to be 100.

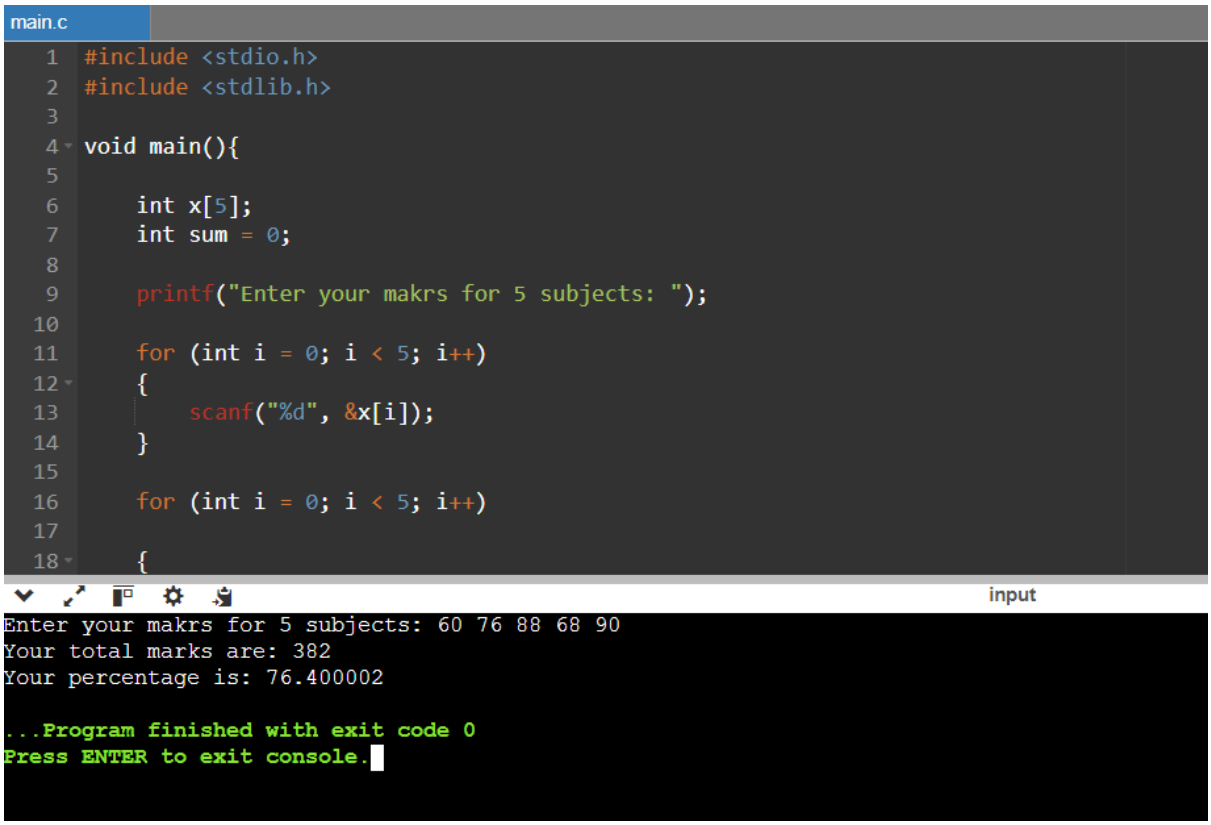
Write a program to calculate the aggregate marks of the student. Also, calculate the percentage marks obtained by the student.

Code:

```
#include <stdio.h>

#include <stdlib.h>


void main(){


   int x[5];

   int sum = 0;
```

```
    printf("Enter your makrs for 5 subjects: ");

    for (int i = 0; i < 5; i++)
    {
        scanf("%d", &x[i]);
    }

    for (int i = 0; i < 5; i++)

    {
        if (x[i] > 100)
        {
            printf("Invalid marks");
            exit(0);
        }
        else
        {
            sum = sum + x[i];
        }
    }

    printf("Your total marks are: %d", sum);

    float percentage = (sum/500.0)*100;
    printf("\nYour percentage is: %f", percentage);

}
```

Screenshot:



Q-4 Sum of Digits

The user will enter a four-digit number.

Write a program that calculates the sum of its digits. (Hint: Use the modulus operator '%').

Input:

Four-digit number.

Code:

#*include* <stdio.h>

void *main*(){

int x;

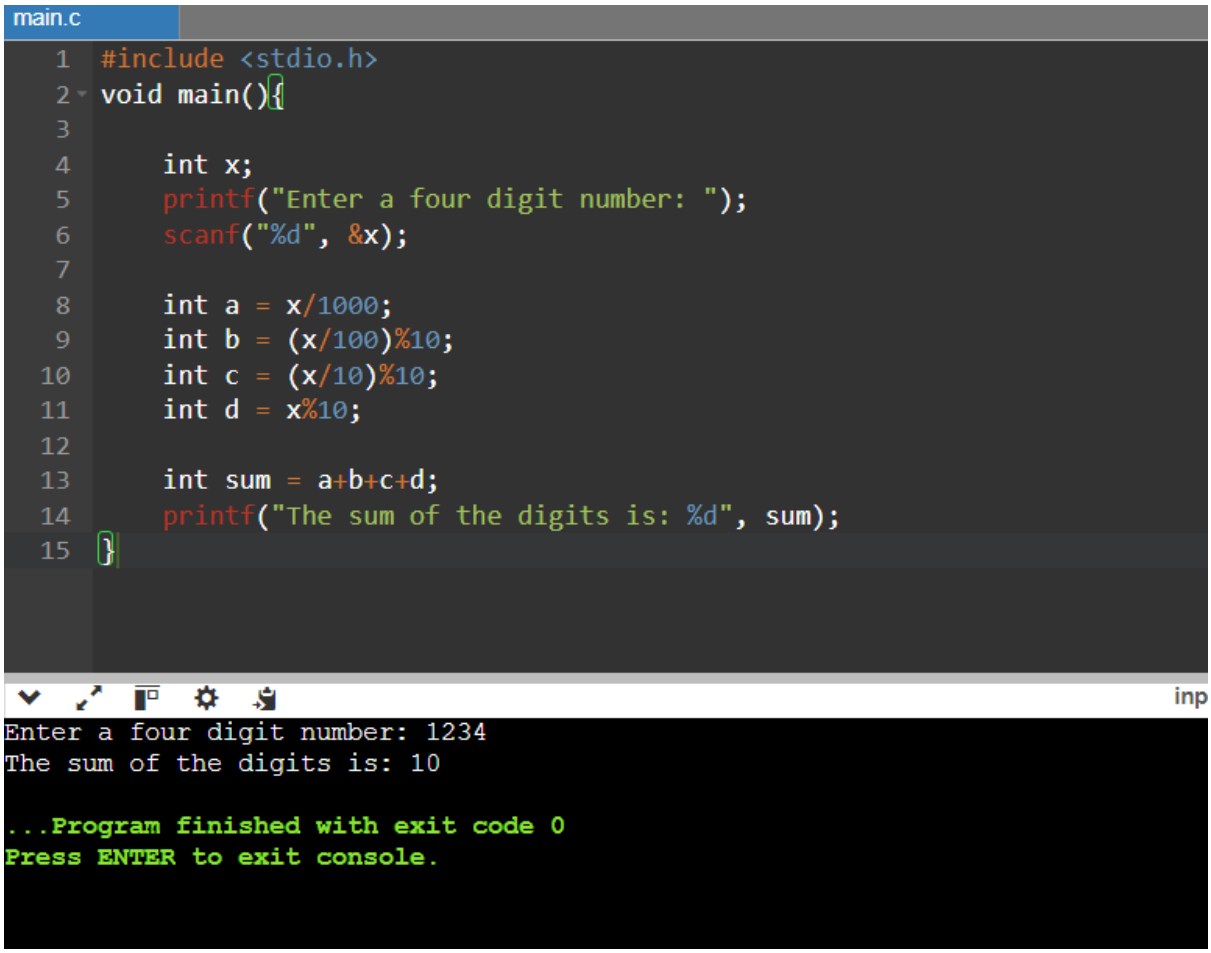
printf("Enter a four digit number: ");

scanf("%d", &x);

int a = x/1000;

```
    int b = (x/100)%10;
    int c = (x/10)%10;
    int d = x%10;

    int sum = a+b+c+d;
    printf("The sum of the digits is: %d", sum);
}
```

Screenshot:



Q-5 Decrementing Digit Problem

Suppose a five-digit number is input by a user.

Write a program to print a new number by subtracting one to each of its digits. For example if the number that is input is 12391 then the output should be displayed as 01280.

Code:

```
#include <stdio.h>
void main(){

    int x;
    printf("Enter a four digit number: ");
    scanf("%d", &x);

    int y = (x/10000)-1;
    int a = ((x/1000)%10)-1;
    int b = ((x/100)%10)-1;
    int c = ((x/10)%10)-1;
    int d = (x%10)-1;

    printf("The decremented digits are: %d%d%d%d%d",y,a,b,c,d);
}
```

Screenshot: