計算機程式語言

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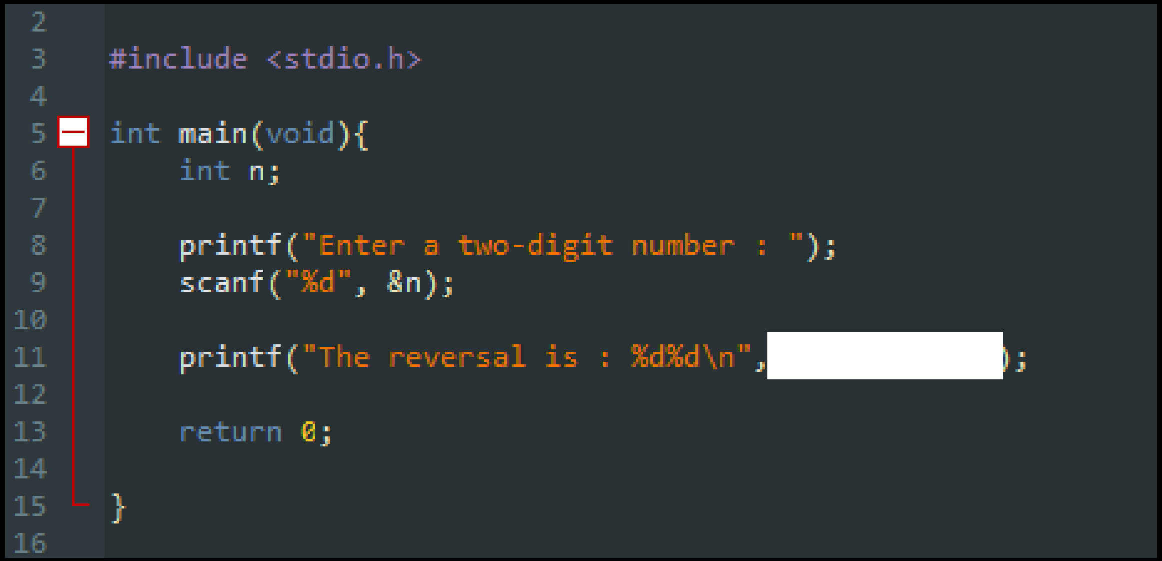
Chapter 4_project 1

Write a program that asks the user to enter a two-digit number, then prints the number with its digits reversed. A session with the program should have the following appearance:

```
Enter a two-digit number: 28

The reversal is: 82
```

Read the number using %d, then break it into two digits. Hint: If n is an integer, then n % 10 is the last digit in n and n / 10 is n with the last digit removed.

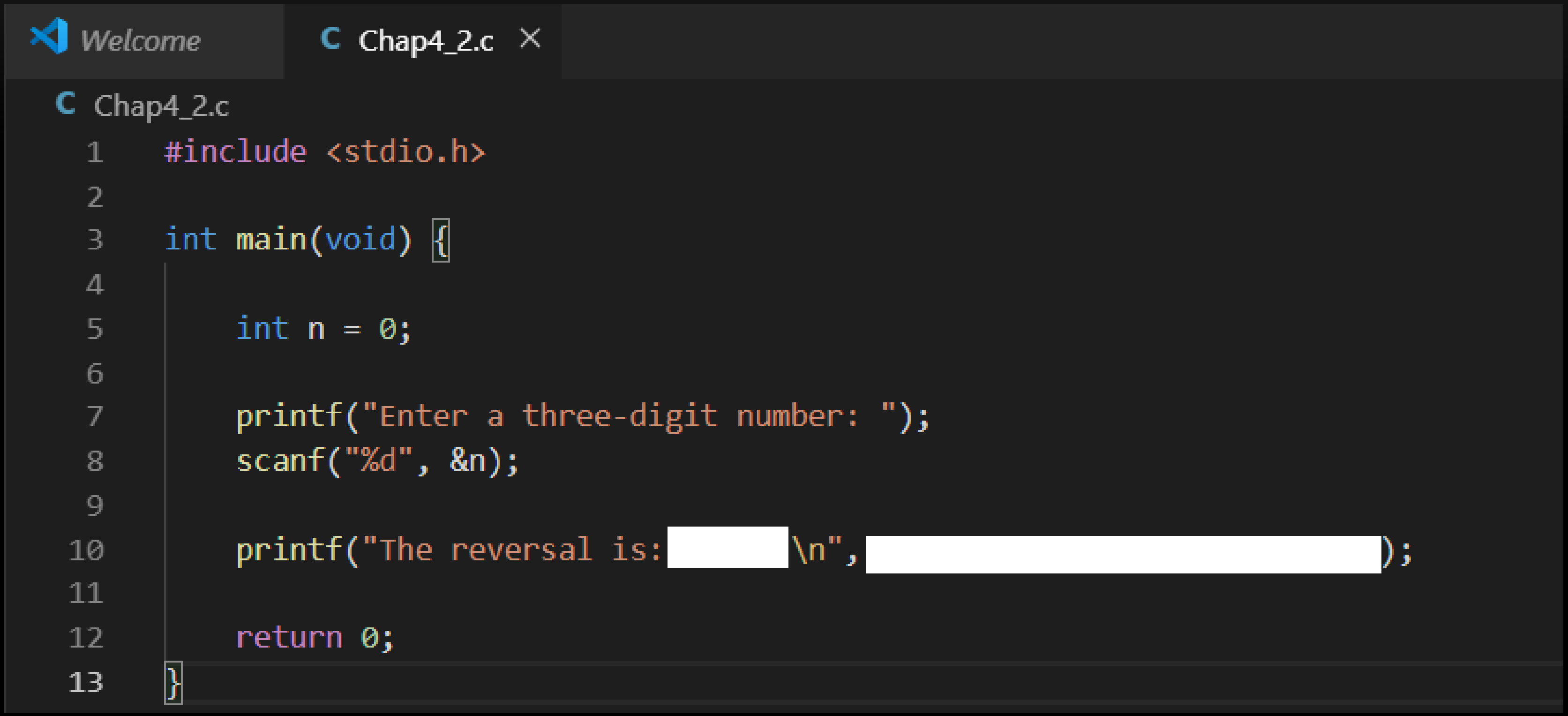
Solution



```

#include <stdio.h>

int main(void){
    int n;

    printf("Enter a two-digit number : ");
    scanf("%d", &n);

    printf("The reversal is : %d%d\n",              );

    return 0;

}

```

Chapter 4_project 2

Extend the program in Programming Project 1 to handle three-digit numbers.



```c
#include <stdio.h>

int main(void) {

    int n = 0;

    printf("Enter a three-digit number: ");
    scanf("%d", &n);

    printf("The reversal is:       \n",                              );

    return 0;
}
```

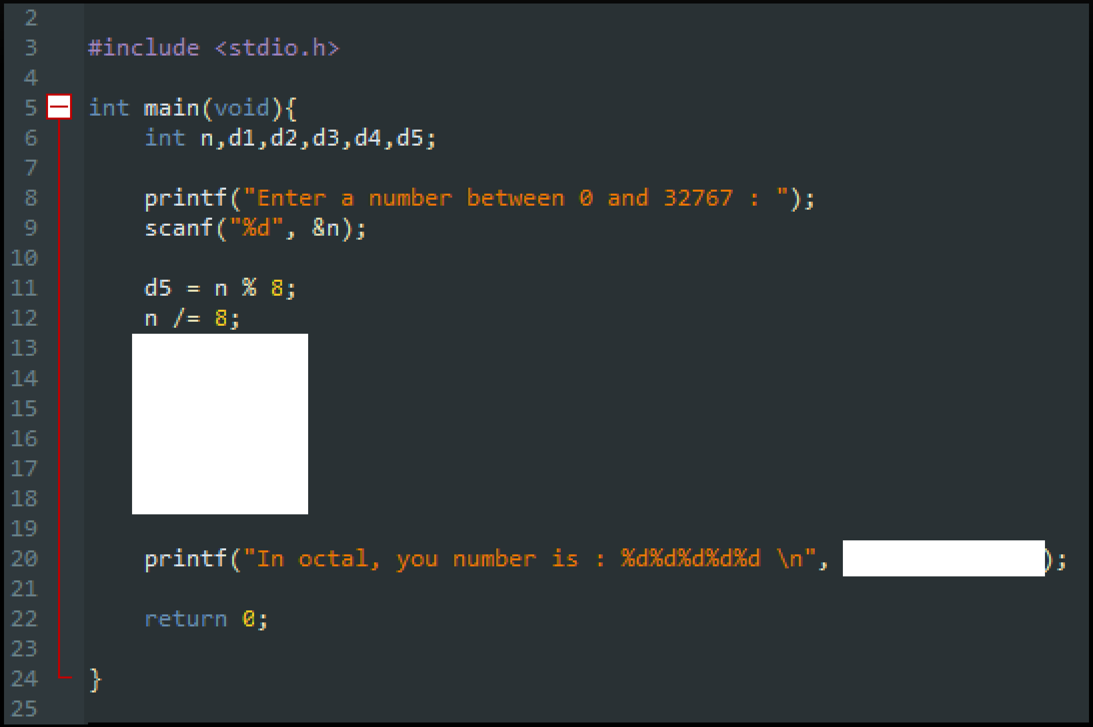
Chapter 4_project 4

Write a program that reads an integer entered by the user and displays it in octal (base 8):

```
Enter a number between 0 and 32767: 1953
In octal, your number is: 03641
```

The output should be displayed using five digits, even if fewer digits are sufficient. Hint: To convert the number to octal, first divide it by 8; the remainder is the last digit of the octal number (1, in this case). Then divide the original number by 8 and repeat the process to arrive at the next-to-last digit, (print f is capable of displaying numbers in base 8, as we'll see in Chapter 7, so there's actually an easier way to write this program.)

Solution



```
#include <stdio.h>

int main(void){
    int n,d1,d2,d3,d4,d5;

    printf("Enter a number between 0 and 32767 : ");
    scanf("%d", &n);

    d5 = n % 8;
    n /= 8;







    printf("In octal, you number is : %d%d%d%d%d \n",  );

    return 0;

}
```

Chapter 4_project 6

European countries use a 13-digit code, known as a European Article Number (EAN) instead of the 12-digit Universal Product Code (UPC) found in North America. Each EAN ends with a check digit, just as a UPC does. The technique for calculating the check digit is

also similar:

Add the second, fourth, sixth, eighth, tenth, and twelfth digits.

Add the first, third, fifth, seventh, ninth, and eleventh digits.

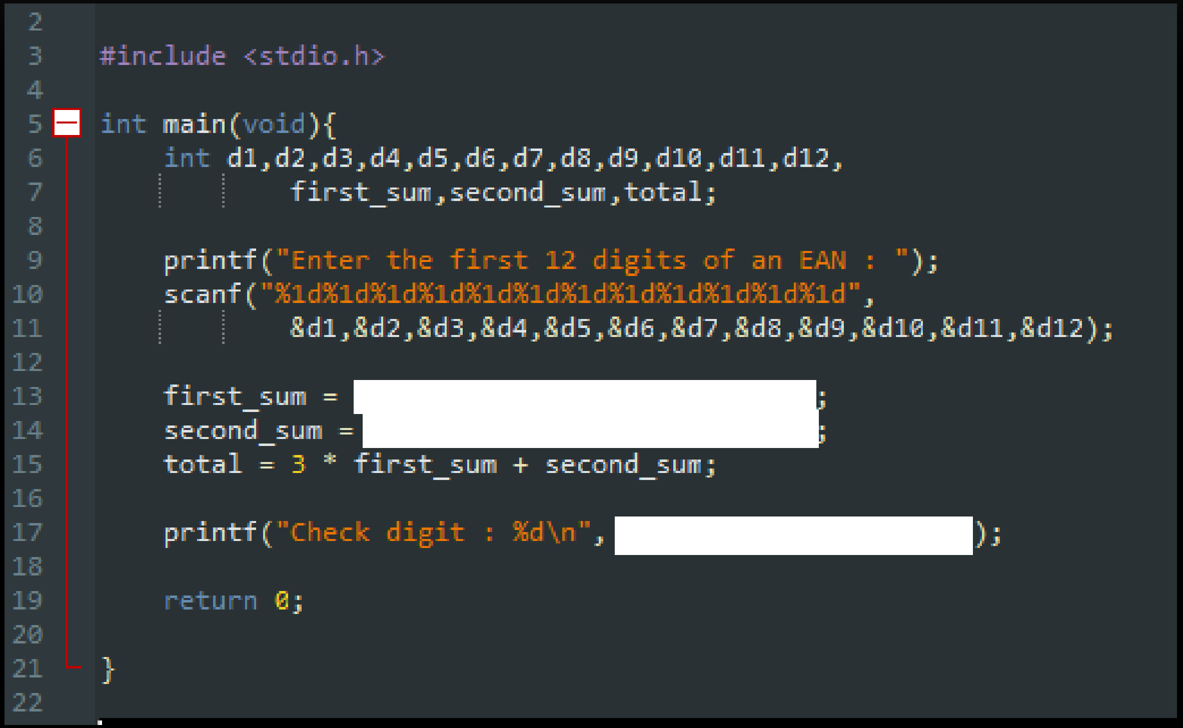
Multiply the first sum by 3 and add it to the second sum.

Subtract 1 from the total.

Compute the remainder when the adjusted total is divided by 10.

Subtract the remainder from 9.

Solution



```c

#include <stdio.h>

int main(void){
    int d1,d2,d3,d4,d5,d6,d7,d8,d9,d10,d11,d12,
            first_sum,second_sum,total;

    printf("Enter the first 12 digits of an EAN : ");
    scanf("%1d%1d%1d%1d%1d%1d%1d%1d%1d%1d%1d%1d",
            &d1,&d2,&d3,&d4,&d5,&d6,&d7,&d8,&d9,&d10,&d11,&d12);

    first_sum =                              ;
    second_sum =                             ;
    total = 3 * first_sum + second_sum;

    printf("Check digit : %d\n",                       );

    return 0;

}

```