

Advanced Coding Task 1

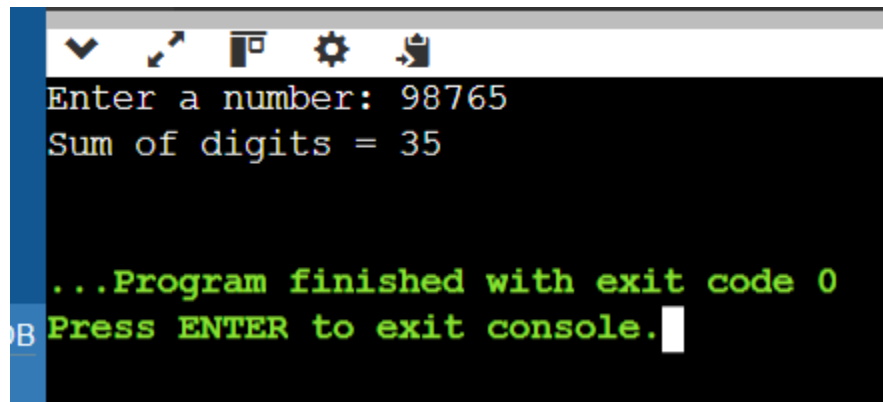
1. Write a C program to calculate the sum of digits of a number.

SOLUTION:

```
#include <stdio.h>

int main() {
    int n, s = 0, d;
    printf("Enter a number: ");
    scanf("%d", &n);
    while (n != 0) {
        d = n % 10;
        s += d;
        n /= 10;
    }
    printf("Sum of digits = %d\n", s);
    return 0;}
```

OUTPUT:



```
Enter a number: 98765
Sum of digits = 35

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

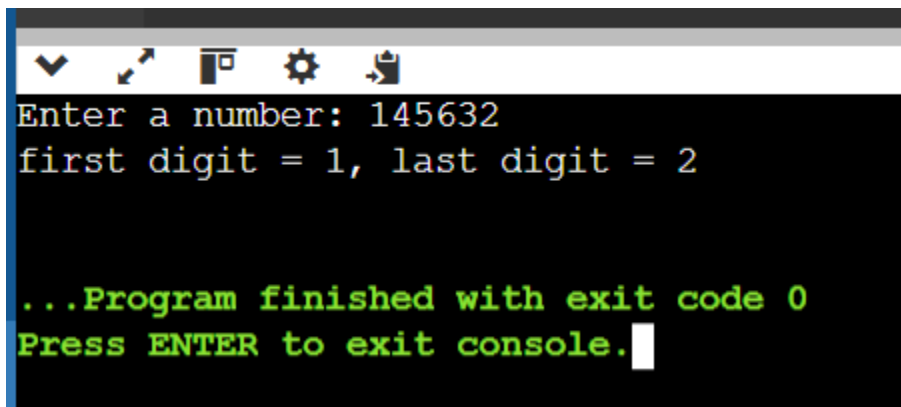
Advanced Coding Task 6

2. Write a C program to find first and last digit of a number.

SOLUTION:

```
#include <stdio.h>
int main() {
    int n, l, f;
    printf("Enter a number: ");
    scanf("%d", &n);
    l = n % 10;
    while (n >= 10) {
        n /= 10;
    }
    f = n;
    printf("first digit = %d, last digit = %d\n", f, l);
    return 0;
}
```

OUTPUT:



```
Enter a number: 145632
first digit = 1, last digit = 2

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

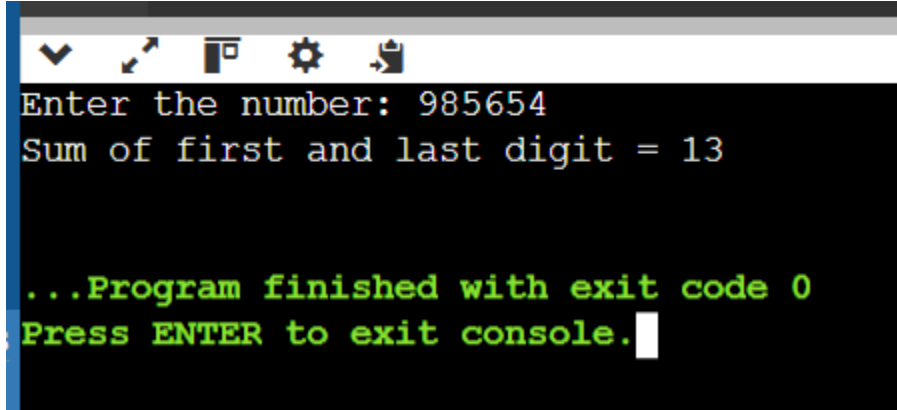
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3. Write a C program to find sum of first and last digit of a number.

SOLUTION:

```
#include <stdio.h>
int main() {
    int n, l, f;
    printf("Enter a number: ");
    scanf("%d", &n);
    l = n % 10;
    while (n >= 10) {
        n /= 10;
    }
    f = n;
    s = f + l;
    printf("Sum of first digit = %d, last digit = %d\n", s);
    return 0;
}
```

OUTPUT:



```
Enter the number: 985654
Sum of first and last digit = 13

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

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4. Write a C program to Swap First and Last Digits of a Number.

SOLUTION:

```
#include <stdio.h>
#include <math.h>

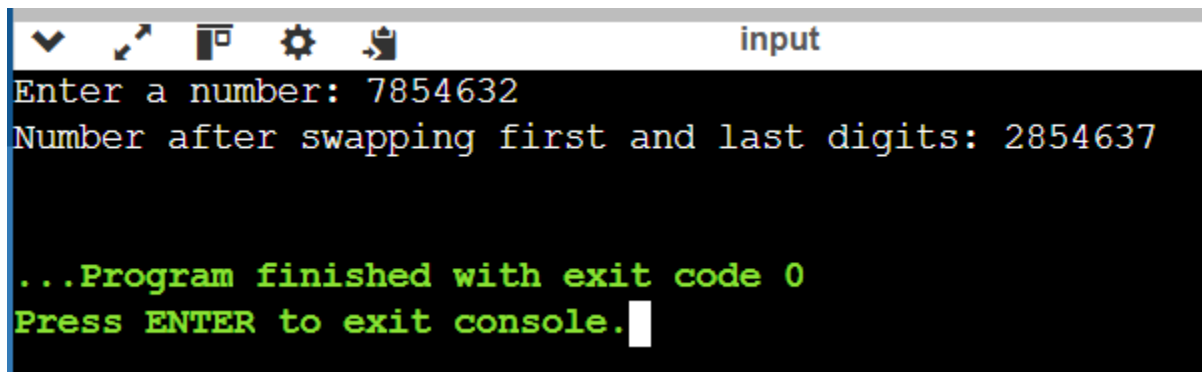
int main() {
    int n, first, last, digits, swapped;
    printf("Enter a number: ");
    scanf("%d", &n);

    last = n % 10;
    digits = (int)log10(n);
    first = n / pow(10, digits);

    swapped = n - first * pow(10, digits) + last * pow(10, digits);
    swapped = swapped - last + first;

    printf("Number after swapping first and last digits: %d\n", swapped);
    return 0;
}
```

OUTPUT:



```
input
Enter a number: 7854632
Number after swapping first and last digits: 2854637

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

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5. Write a C program to find Frequency of Each Digit in a Given Integer.

SOLUTION:

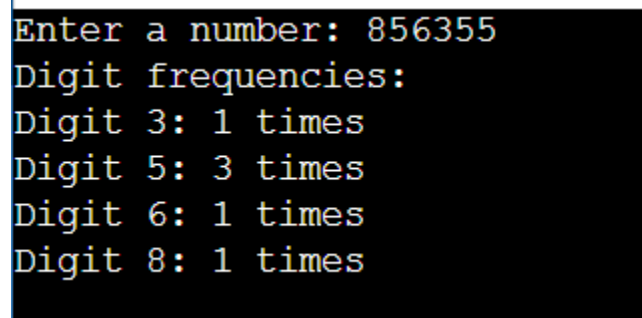
```
#include <stdio.h>

int main() {
    int n, d, freq[10] = {0};
    printf("Enter a number: ");
    scanf("%d", &n);

    while (n > 0) {
        d = n % 10;
        freq[d]++;
        n /= 10;
    }

    printf("Digit frequencies:\n");
    for (int i = 0; i < 10; i++) {
        if (freq[i] > 0) {
            printf("Digit %d: %d times\n", i, freq[i]);
        }
    }
    return 0;
}
```

OUTPUT:



```
Enter a number: 856355
Digit frequencies:
Digit 3: 1 times
Digit 5: 3 times
Digit 6: 1 times
Digit 8: 1 times
```

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6. Write a C program to enter a Number and Print It in Words.

SOLUTION:

```
#include <stdio.h>

void printWord(int n) {
    char *ones[] = {"", "One", "Two", "Three", "Four", "Five", "Six", "Seven", "Eight", "Nine"};
    char *tens[] = {"", "Ten", "Twenty", "Thirty", "Forty", "Fifty", "Sixty", "Seventy", "Eighty", "Ninety"};
    char *teen[] = {"Ten", "Eleven", "Twelve", "Thirteen", "Fourteen", "Fifteen", "Sixteen", "Seventeen",
"Eighteen", "Nineteen"};

    if (n == 0) {
        printf("Zero");
        return;
    }
    if (n >= 100) {
        printf("%s Hundred ", ones[n / 100]);
        n = n % 100;
    }

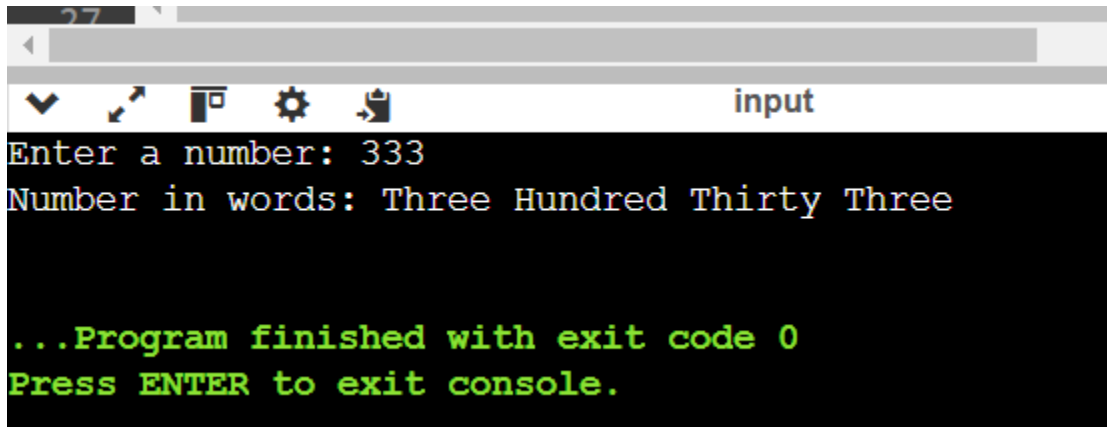
    if (n >= 20) {
        printf("%s ", tens[n / 10]);
        n = n % 10;
    }
    else if (n >= 10) {
        printf("%s ", teen[n - 10]);
        return;
    }
    if (n > 0) {
        printf("%s", ones[n]);
    }
}

int main() {
    int n;
    printf("Enter a number: ");
    scanf("%d", &n);

    printf("Number in words: ");
    printWord(n);
    printf("\n");
    return 0;
}
```

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OUTPUT:



```
27
input
Enter a number: 333
Number in words: Three Hundred Thirty Three

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

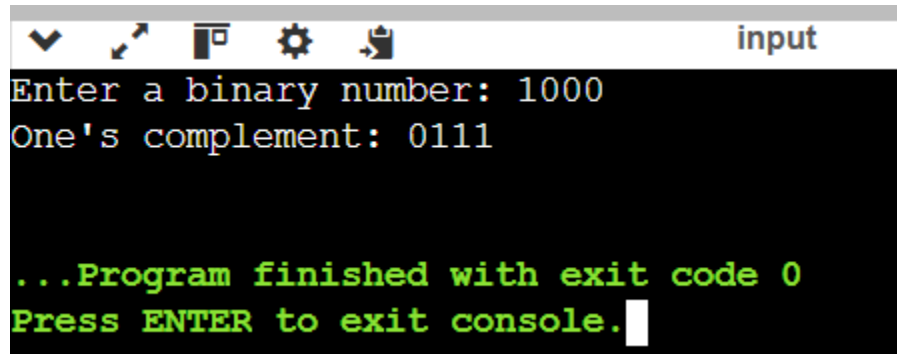
7. Write a C program to find One's Complement of a Binary Number.

SOLUTION:

```
#include <stdio.h>
#include <string.h>
int main() {
    char binary[32];
    printf("Enter a binary number: ");
    scanf("%s", binary);
    printf("One's complement: ");
    for (int i = 0; i < strlen(binary); i++) {
        if (binary[i] == '0') {
            printf("1");
        } else {
            printf("0");
        }
    }
    printf("\n");
    return 0;
}
```

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OUTPUT:



```
input
Enter a binary number: 1000
One's complement: 0111

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

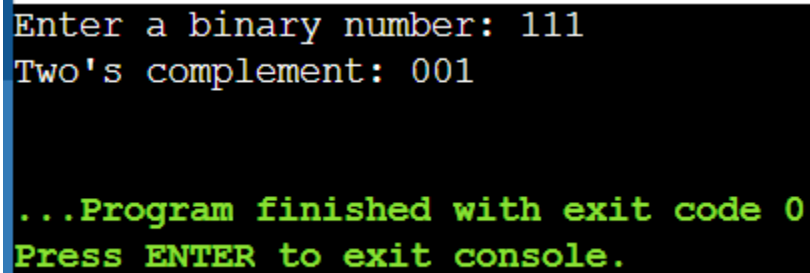
8. Write a C program to find two's complement of a binary number.

SOLUTION:

```
#include <stdio.h>
#include <string.h>
int main() {
    char binary[32], ones[32];
    int carry = 1;
    printf("Enter a binary number: ");
    scanf("%s", binary);
    for (int i = 0; i < strlen(binary); i++) {
        ones[i] = (binary[i] == '0') ? '1' : '0';
    }
    ones[strlen(binary)] = '\0';
    for (int i = strlen(binary) - 1; i >= 0; i--) {
        if (ones[i] == '1' && carry == 1) {
            ones[i] = '0';
        } else if (carry == 1) {
            ones[i] = '1';
            carry = 0;
        }
    }
    printf("Two's complement: %s\n", ones);
    return 0;
}
```


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OUTPUT:

A terminal window with a black background and green text. It shows the input '111' for a binary number and the output '001' for its two's complement. The program then displays a completion message.

```
Enter a binary number: 111
Two's complement: 001

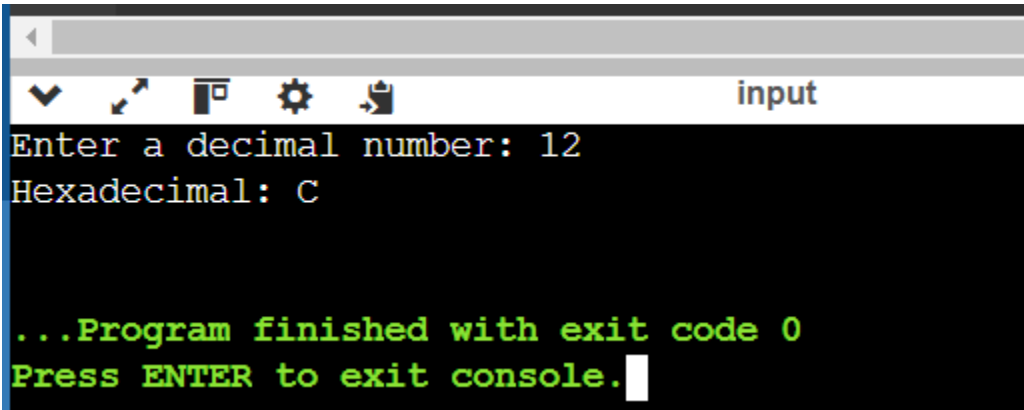
...Program finished with exit code 0
Press ENTER to exit console.
```

9. Write a C program to convert Decimal to Hexadecimal number system.

SOLUTION:

```
#include <stdio.h>
int main() {
    int n;
    printf("Enter a decimal number: ");
    scanf("%d", &n);
    printf("Hexadecimal: %X\n", n);
    return 0;
}
```

OUTPUT:

A terminal window with a black background and green text. It shows the input '12' for a decimal number and the output 'C' for its hexadecimal equivalent. The program then displays a completion message. The window has a title bar with 'input' and standard icons.

```
Enter a decimal number: 12
Hexadecimal: C

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