ASSIGNMENT-1

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

```
#include <stdio.h>

int main() {
   int num, sum = 0, digit;

   printf("Enter a number: ");
   scanf("%d", &num);

   while (num != 0) {
      digit = num % 10;
      sum += digit;
      num /= 10;
   }

   printf("Sum of digits: %d", sum);

   return 0;
}
```

OUTPUT:

```
Enter a number: 1234

Sum of digits: 10
```

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

```
#include <stdio.h>

int main() {
   int num, first, last;

   printf("Enter a number: ");
   scanf("%d", &num);

   last = num % 10;

   while (num >= 10) {
      num /= 10;
   }
   first = num;

   printf("First digit: %d\n", first);
   printf("Last digit: %d", last);

   return 0;
}
```

OUTPUT:

```
Enter a number: 1234

First digit: 1
Last digit: 4
```

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

```
#include <stdio.h>

int main() {
   int num, first, last, sum;

   printf("Enter a number: ");
   scanf("%d", &num);

   last = num % 10;

   while (num >= 10) {
      num /= 10;
   }
   first = num;

   sum = first + last;

   printf("Sum of first and last digit: %d", sum);

   return 0;
}
```

OUTPUT:

```
Enter a number: 1234
Sum of first and last digit: 5
```

4. Write a C program to swap first and last digits of a number.

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

int main() {
   int num, first, last, digits, swapped;

   printf("Enter a number: ");
   scanf("%d", &num);

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

   swapped = last * (int)pow(10, digits) + (num % (int)pow(10, digits)) / 10 *
10 + first;

   printf("Number after swapping first and last digits: %d", swapped);

   return 0;
}
```

OUTPUT:

```
Enter a number: 1234
Number after swapping first and last digits: 4231
```

5. Write a C program to find frequency of each digit in a given integer.

```
#include <stdio.h>
int main() {
    int num, digit, frequency[10] = {0};
    printf("Enter a number: ");
    scanf("%d", &num);
    while (num != 0) {
        digit = num % 10;
        frequency[digit]++;
        num /= 10;
    }
    printf("Digit frequency:\n");
    for (int i = 0; i < 10; i++) {
        if (frequency[i] > 0) {
            printf("Digit %d: %d times\n", i, frequency[i]);
        }
    }
    return 0;
}
```

OUTPUT:

```
Enter a number: 122333

Digit frequency:
Digit 1: 1 times
Digit 2: 2 times
Digit 3: 3 times
```

6. Write a C program to enter a number and print it in words.

```
#include <stdio.h>
void printWord(int digit) {
   switch (digit) {
      case 0: printf("Zero "); break;
      case 1: printf("One "); break;
      case 2: printf("Two "); break;
      case 3: printf("Three "); break;
      case 4: printf("Four "); break;
      case 5: printf("Five "); break;
      case 6: printf("Six "); break;
      case 7: printf("Seven "); break;
      case 8: printf("Eight "); break;
      case 9: printf("Nine "); break;
   }}
int main() {
   int num, rev = 0, digit;
   printf("Enter a number: ");
   scanf("%d", &num);
   while (num != 0) {
      rev = rev * 10 + num % 10;
      num /= 10;
   }
   while (rev != 0) {
      digit = rev % 10;
      printWord(digit);
      rev /= 10;
   }
   return 0;}
```

OUTPUT:

```
Enter a number: 123
One Two Three
```

7. Write a C program to find ones complement of a binary number.

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

int main() {
    char binary[32], onesComp[32];

    printf("Enter a binary number: ");
    scanf("%s", binary);

    for (int i = 0; i < strlen(binary); i++) {
        onesComp[i] = (binary[i] == '0') ? '1' : '0';
    }
    onesComp[strlen(binary)] = '\0';

    printf("One's complement: %s", onesComp);

    return 0;
}
```

OUTPUT:

```
Enter a binary number: 1010
One's complement: 0101
```

8. Write a C program to find twos complement of a binary number.

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

OUTPUT:

```
Enter a binary number: 1010
Two's complement: 0110
```

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

```
#include <stdio.h>

int main() {
   int decimal;

   printf("Enter a decimal number: ");
   scanf("%d", &decimal);

   printf("Hexadecimal: %X", decimal);

   return 0;
}
```

OUTPUT:

```
Enter a decimal number: 255
Hexadecimal: FF
```