

**WINTER SEMESTER 2016**

**CSE2003: DATA STRUCTURES AND ALGORITHMS (EMBEDDED LAB) SLOT: L51+L52**

**FACULTY: THENDRAL.P**

**ASSIGNMENT-1**

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5. Convert a given 3 digit decimal number ( ex: 345) to a reverse binary number. Ensure that the user has not given input more than 3 digits. ( Note:  $345\%2=1$ ,  $345/2=172$ ,  $172\%2=0$ ,  $172/2=86$ ,  $86\%2=0$ ,  $86/2=43$ ,  $43\%2=1$ ,  $43/2=21$ ,  $21\%2=1$ ,  $21/2=10$ ,  $10\%2=0$ ,  $10/2=5$ ,  $5\%2=1$ ,  $5/2=2$ ,  $2\%2=0$ . Print all remainders then and there to get the binary number in the reverse).

**Code:**

```
#include<stdio.h>

#include<string.h>
main()
{
    char l[10];

    printf("Enter the
    number:"); gets(l);

    int l1[100];
    int n=atoi(l);
    if(strlen(l)!=3)

    printf("Invalid input");
    else{
        int k=0;
        printf("Quotient\tRemainder")
        ; while(n!=0){

            int y=n%2;
            printf("\n%d\t\t%d\n",n,y
            ); l1[k]=y;

            k=k+1;
            n=n/2;

        }

        int ps=0;

        printf("Binary equivalent for the given decimal
        number:\t"); while(ps<k){

            printf("%d",l1[ps]);
```

```

        ps=ps+1;

    }

}

```

### Output:

```

F:\Data Structures\DSA_Assign_1.exe
Enter the number: 345
Quotient    Remainder
345          1
172          0
86           0
43           1
21           1
10           0
5            1
2            0
1            1
Binary equivalent for the given decimal number: 100110101
Process exited after 4.016 seconds with return value 9
Press any key to continue . . .

```

- Write a program to read a three digit number and print the number in words (For example the number 153 is to be printed as one five three). Use Switch case control structure. **Code:**

```

#include<stdio.h>
#include<string.h>
int main()

```

```

{
    int n, i=0;
    char a[100];

```

```

l1: printf("Enter the
number:"); scanf("%s", &a);

```

```

    printf("\nIn Words: ");
    int num=strlen(a);
    while(i!= num)

```

```

    {
        switch(a[i])
        {
            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;

    }

    i++;

}

char c;

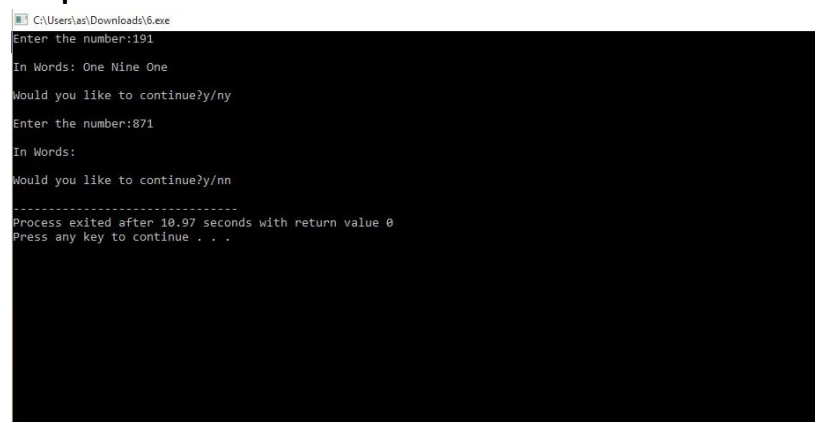
printf("\n\nWould you like to
continue?y/n"); scanf("%s",&c);

if(c=='y'){printf("\n");goto l1;}
return 0;

}

```

## Output:



```

C:\Users\as\Downloads\6.exe
Enter the number:191

In Words: One Nine One

Would you like to continue?y/ny

Enter the number:871

In Words:

Would you like to continue?y/nn

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Process exited after 10.97 seconds with return value 0
Press any key to continue . . .

```