SWS ASSIGNMENT 5

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Q1. Binary to Decimal

```
#include <stdio.h>
int main() {
int n, c, k;
printf("Enter an integer (decimal system) \n");
scanf("%d", &n);
printf("%d in binaar system is :\n", n);
for (c = 31; c >= 0; c--) {
        k = n >> c;
        if (k & 1)
                printf("1");
        else
                printf("0"); }
printf("\n");
return 0;
}
```

Q2 Decimal to Binary

```
#include <stdio.h>
#include<math.h>
int BinaryToDecimal(long long n);
int main() {
long long n;
printf("binary number: ");
scanf("%lld", &n);
printf("%lld in binary = %d in decimal“, n, BinaryToDecimal(n));
return 0;
}
int BinaryToDecimal(long long n) {
```

```
int decimalNumberformed = 0, i = 0, remainder;
while (n!=0) {
        remainder = n%10;
        n /= 10;
        decimalNumber += remainder*pow(2,i);
        ++i; }
return decimalNumberformed;
}
```

Q3. Decimal to Octal

```
#include <stdio.h>
#include <math.h>
int DecimalToOctal(int DNumber);
int main(){
int DNumber;
printf("Enter a decimal number: ");
scanf("%d", &DNumber);
printf("%d in decimal = %d in octal", DNumber, DecimalToOctal(DNumber));
return 0; }
int DecimalToOctal (int DNumber) {
int ONumber = 0, i = 1;
while (DNumber != 0){
        OlNumber += (DNumber % 8) * i;
        DNumber /= 8;
        i *= 10;  }
return ONumber;
}
```

Q4. Octal to Decimal

```
#include <stdio.h>
#include<math.h>
long long OctalToDecimal(int ONumber);
```

```
int main() {
int ONumber;
printf("octal number: ");
scanf("%d", &ONumber);
printf("%d in octal = %lld in decimal", ONumber,  OctalToDecimal(ONumber));
return 0;
}
long long OctalToDecimal(int ONumber)
{ I
nt DNumber = 0, i = 0;
while(ONumber != 0) {
            DNumber += (ONumber%10) * pow(8,i);
           ++i;
           OlNumber/=10;
}
i = 1;
return DNumber;
}
```

Q5. Decimal to Hexadecimal

```
#include<stdio.h>
#include<conio.h>
int main() {
   int decnum, rem, i=0;
   char hexnum[50];
   printf("Enter any decimal number: ");
   scanf("%d", &decnum);
   while(decnum!=0)
   {
          rem = decnum%16;
          if(rem<10)
                              rem = rem+48;
```

```
        else
      rem = rem+55;
      hexnum[i] = rem;
      i++;
      decnum = decnum/16; }
   printf("\nEquivalent Value in Hexadecimal = ");
   for(i=i-1; i>=0; i--) {
         printf("%c", hexnum[i]);
        getch();
   return 0;
}
```

Q6. Hexadecimal to Decimal

```
#include <stdio.h>
#include <math.h>
#include <string.h>
int main()
{
   char hex[17];
   long long decimal, place;
   int i = 0, val, len;
   decimal = 0;
   printf("Enter any hexadecimal number: ");
   gets(hex);
   len = strlen(hex);
   len--;
    while(hex[i]!='\0')
   {
       if(hex[i]>='0' && hex[i]<='9')
      {
         val = hex[i] - 48;
      }
```

```
else if(hex[i]>='a' && hex[i]<='f')
{
   val = hex[i] - 97 + 10;
}
else if(hex[i]>='A' && hex[i]<='F')
{
   val = hex[i] - 65 + 10;
}
   decimal += val * pow(16, len);  }
```