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Computer Organization
Lab assignment -01

1.Binary To Decimal:

```c
#include<stdio.h>
#include<string.h>
#include<math.h>
int main(){
    int n;
    scanf("%d",&n);
    char str[n];
    scanf("%s",str);
    int c=0;
    int num=0;
    for (int i = n-1; i >=0; i--){
        if(str[i]=='1')num+=(1<<c);
        c++;
    }
    printf("%d",num);
    return 0;
}
```

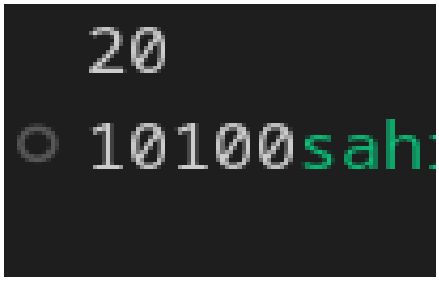
Output:

```
5
10110
22sahil@fedora:~/c
```

2.Decimal To Binary:

```c
#include<stdio.h>
#include<string.h>
#include<math.h>
int main(){
    int n;
    scanf("%d",&n);
    char arr[32];
    int i=0;
    while(n!=0){
        arr[i++]=n%2;
        n/=2;
    }
    while(i--){
        printf("%d",arr[i]);
    }
    return 0;
}
```

Output:



3.Octal To Decimal:

```c
#include<stdio.h>
#include<string.h>
#include<math.h>
int main(){
    int n;
    scanf("%d",&n);
    int c=0;
    int num=0;
    while(n!=0){
        num+=(n%10)*(1<<(3*c));
        n/=10;
        c++;
    }
    printf("%d",num);
    return 0;
}
```

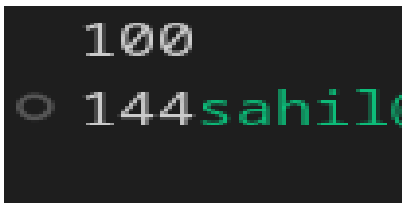
Output:

```
457
303sahil
```

4.Decimal To Octal:

```c
#include<stdio.h>
#include<string.h>
#include<math.h>
int main(){
    int n;
    scanf("%d",&n);
    char arr[32];
    int i=0;
    while(n!=0){
        arr[i++]=n%8;
        n/=8;
    }
    while(i--){
        printf("%d",arr[i]);
    }
    return 0;
}
```

Output:



5.Hexadecimal To Decimal:

Output:

```c
#include<stdio.h>
#include<string.h>
#include<math.h>
int main(){
    int n;
    scanf("%d",&n);
    char arr[32];
    int i=0;
    while(n!=0){
        if(n%16<10)arr[i++]=n%16+'0';
        else if(n%16==10)arr[i++]='A';
        else if(n%16==11)arr[i++]='B';
        else if(n%16==12)arr[i++]='C';
        else if(n%16==13)arr[i++]='D';
        else if(n%16==14)arr[i++]='E';
        else arr[i++]='F';
        n/=16;
    }
    while(i--){
        printf("%c",arr[i]);
    }
    return 0;
}
```

Output:

```
3
1AB
427sahil@t
```

6.Decimal To Hexadecimal:

```c
#include<stdio.h>
#include<string.h>
#include<math.h>
int main(){
    int n;
    scanf("%d",&n);
    char arr[32];
    int i=0;
    while(n!=0){
        if(n%16<10)arr[i++]=n%16+'0';
        else if(n%16==10)arr[i++]='A';
        else if(n%16==11)arr[i++]='B';
        else if(n%16==12)arr[i++]='C';
        else if(n%16==13)arr[i++]='D';
        else if(n%16==14)arr[i++]='E';
        else arr[i++]='F';
        n/=16;
    }
    while(i--){
        printf("%c",arr[i]);
    }
    return 0;
}
```

Output:

```
167
A7sahil@f
```