C PROGRAM TO CONVERT ONE BASE TO ANOTHER

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

void binary_to_decimal(int n)
{
   int rem, i = 0, ans = 0;
   while (n != 0)
   {
      rem = n % 10;
      n /= 10;
      ans += rem * pow(2, i);
      i++;
   }
   printf("\n Binary to decimal: %d", ans);
}
void decimal_to_binary(int n)
{
   int ans[100], i = 0, j = 0;
   while (n > 0)
   {
      ans[i] = n % 2;
      n /= 2;
      i++;
   }
   printf("\ndecimal to binary: ");
   for (j = i - 1; j >= 0; j--)
   {
      printf("%d", ans[j]);
```

```
    }
}
void octal_to_decimal(int n)
{
    int rem, i = 0, ans = 0;
    while (n != 0)
    {
        rem = n % 10;
        n /= 10;
        ans += rem * pow(8, i);
        i++;
    }
    printf("\n Binary to decimal: %d", ans);
}
void decimal_to_octal(int n)
{
    int ans[100], i = 0, j = 0;
    while (n > 0)
    {
        ans[i] = n % 8;
        n /= 8;
        i++;
    }
    printf("\ndecimal to octal: ");
    for (j = i - 1; j >= 0; j--)
    {
        printf("%d", ans[j]);
    }
}
void hexa_to_decimal(char n[])
{
```

```
    char value[16] = {'0', '1', '2', '3', '4', '5', '6', '7', '8', '9', 'A', 'B', 'C', 'D', 'E', 'F'};
    int i, j, power = 0, ans = 0;
    for (i = strlen(n) - 1; i >= 0; i--)
    {
        for (j = 0; j < 16; j++)
        {
            if (n[i] == value[j])
            {
                ans += j * pow(16, power);
            }
        }
        power++;
    }
    printf("Decimal Number : %d", ans);
}
void decimal_to_hexa(int n)
{
}
int main()
{
    int a, b, c, d, f, choice;
    char e[100];
    printf("1. binary to decimal \n 2. decimal to binary \n 3. octal to decimal \n 4. decimal to octal \n
5. hexa to decimal \n 6. decimal to hexa \n Enter your choice:");
    scanf("%d", &choice);
    switch (choice)
    {
    case 1:

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

```
    binary_to_decimal(a);
    break;
case 2:
        printf("enter a number:");
        scanf("%d",&b);
        decimal_to_binary(b);
        break;
case 3:
        printf("enter a number:");
        scanf("%d",&c);
        octal_to_decimal(c);
        break;
case 4:
        printf("enter a number:");
        scanf("%d",&d);
        decimal_to octal(d);
        break;
case 5:
        printf("enter a number:");
        scanf("%d",&e);
        hexa_to_decimal(e);
        break;
case 6:
        printf("enter a number:");
        scanf("%d",&f);
        decimal_to_hexa(f);
        break;
        default:
    printf("Invalid Choice.");
}
return 0;
```

}

C:\Users\student.SITIN\Documents\Untitled1.exe

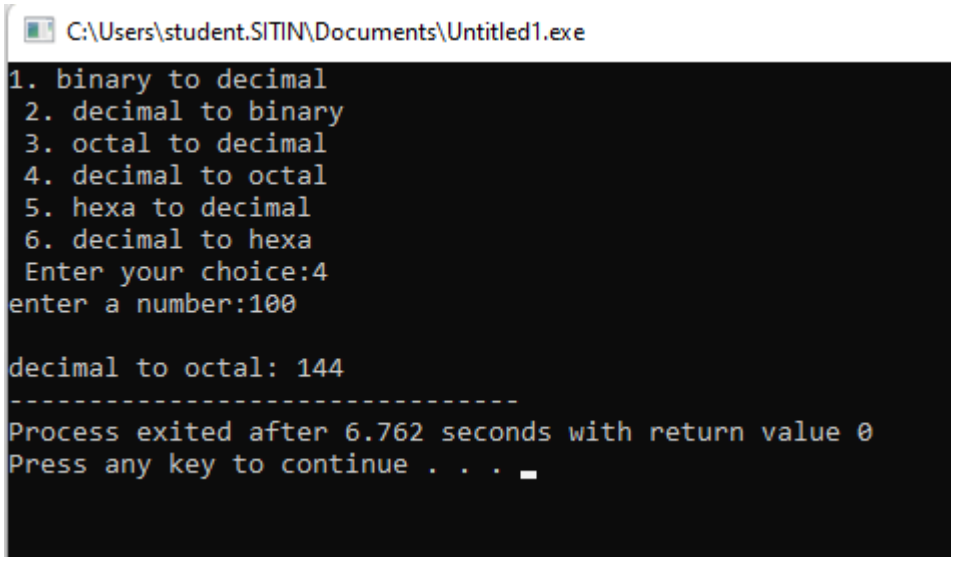
```
. binary to decimal
2. decimal to binary
3. octal to decimal
4. decimal to octal
5. hexa to decimal
6. decimal to hexa
Enter your choice:1
nter a number:010

Binary to decimal: 2
------------------------------
rocess exited after 5.503 seconds with return value 0
ress any key to continue . . .
```

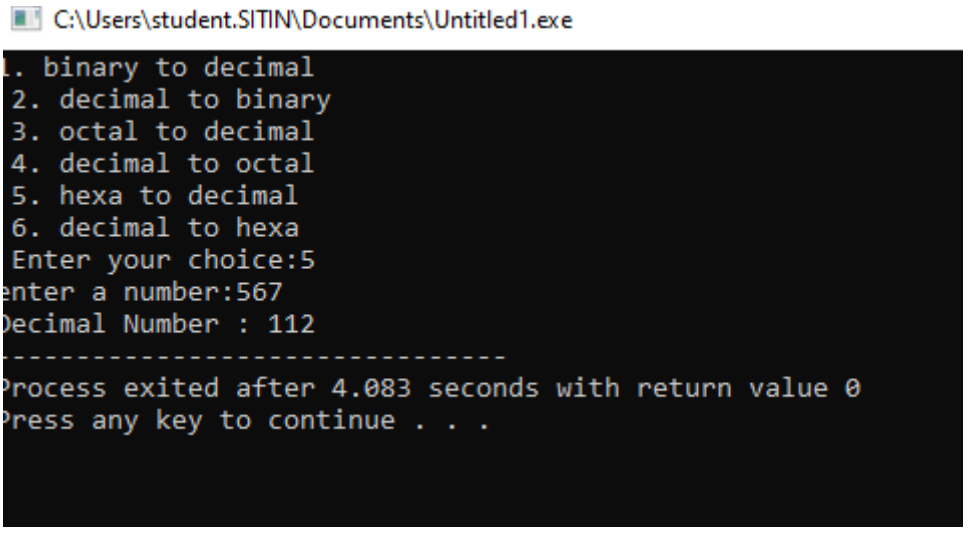
C:\Users\student.SITIN\Documents\Untitled1.exe

```
1. binary to decimal
 2. decimal to binary
 3. octal to decimal
 4. decimal to octal
 5. hexa to decimal
 6. decimal to hexa
 Enter your choice:2
enter a number:90

decimal to binary: 1011010
------------------------------
Process exited after 3.492 seconds with return value 0
Press any key to continue . . .
```

C:\Users\student.SITIN\Documents\Untitled1.exe

```
. binary to decimal
 2. decimal to binary
 3. octal to decimal
 4. decimal to octal
 5. hexa to decimal
 6. decimal to hexa
 Enter your choice:3
nter a number:656

 Binary to decimal: 430
------------------------------
rocess exited after 10.29 seconds with return value 0
ress any key to continue . . .
```


C:\Users\student.SITIN\Documents\Untitled1.exe
1. binary to decimal
2. decimal to binary
3. octal to decimal
4. decimal to octal
5. hexa to decimal
6. decimal to hexa
Enter your choice:4
enter a number:100
decimal to octal: 144
Process exited after 6.762 seconds with return value 0
Press any key to continue . . .


C:\Users\student.SITIN\Documents\Untitled1.exe
1. binary to decimal
2. decimal to binary
3. octal to decimal
4. decimal to octal
5. hexa to decimal
6. decimal to hexa
Enter your choice:5
enter a number:567
Decimal Number : 112
Process exited after 4.083 seconds with return value 0
Press any key to continue . . .