20BCS042 MOHD ADIL

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



void dectohex();
void hextodec();
int power(int a, int b);

int main()
{
   while (1)
   {
      int ch;
      printf("Enter 1 for Decimal to Hexadecimal Conversion\n");
      printf("Enter 2 for Hexadecimal to Decimal Conversion\n");
      printf("Enter 3 to Exit\n");
      printf("Enter your Choice: ");
      scanf("%d", &ch);
      switch (ch)
      {
      case 1:
         dectohex();
         break;
      case 2:
         hextodec();
         break;
      case 3:
         printf("Exiting\n");
```

```
            exit(0);
        }
    }

    return 0;
}

int power(int a, int b)
{
    int pow = 1;
    for (int i = 1; i <= b; i++)
    {
        pow = pow * a;
    }
    return pow;
}

void dectohex()
{
    int decimalNum, remainder, i = 0;
    char hexnum[20];
    printf("Enter any decimal number: ");
    scanf("%d", &decimalNum);
    while (decimalNum != 0)
    {
        remainder = decimalNum % 16;
        if (remainder < 10)
            remainder = remainder + 48;
        else
```

```
        remainder = remainder + 55;
      hexnum[i] = remainder;
      i++;
      decimalNum = decimalNum / 16;
   }
   printf("\nEquivalent Value in Hexadecimal = ");
   for (i = i - 1; i >= 0; i--)
      printf("%c", hexnum[i]);
   printf("\n");
}

void hextodec()
{
   int decimalNum = 0, remainder, i = 0, len = 0;
   char hexnum[20];
   printf("Enter any Hexadecimal Number: ");
   scanf("%s", hexnum);
   while (hexnum[i] != '\0')
   {
      len++;
      i++;
   }
   len--;
   i = 0;
   while (len >= 0)
   {
      remainder = hexnum[len];
      if (remainder >= 48 && remainder <= 57)
         remainder = remainder - 48;
```

```
        else if (remainder >= 65 && remainder <= 70)
            remainder = remainder - 55;
        else if (remainder >= 97 && remainder <= 102)
            remainder = remainder - 87;
        else
        {
            printf("\nYou've entered an invalid Hexadecimal digit");
        }
        decimalNum = decimalNum + (remainder * power(16, i));
        len--;
        i++;
    }
    printf("\nEquivalent Decimal Value = %d\n", decimalNum);
}
```

OUTPUT