

1.main.c

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

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

```
#include "header.h"
```

```
int main(){
```

```
    int number;
```

```
    printf("Enter the Decimal Number: ");
```

```
    scanf("%d", &number);
```

```
    decimalToBinary(number);
```

```
    return 0;
```

```
}
```

2.header.h

```
typedef struct{
```

```
    int top;
```

```
    int arr[100];
```

```
}Stack;
```

```
void init(Stack *s);
```

```
int isFull(Stack *s);
```

```
int isEmpty(Stack *s);
```

```
void push(Stack *s, int x);
```

```
int pop(Stack *s);
```

```
void decimalToBinary(int number);
```

3.logic.c

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

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

```
#include "header.h"
```

```
void init(Stack *s){
```

```
    s -> top = -1;
```

```
    return;
```

```
}
```

```
int isFull(Stack *s){
```

```
    return s -> top == 99;
```

```
}
```

```
int isEmpty(Stack *s){
```

```
    return s -> top == -1;
```

```
}
```

```
void push(Stack *s, int x){
```

```
    if(!isFull(s)){
```

```
        s -> top++;
```

```
        s -> arr[s -> top] = x;
```

```
    }else{
```

```
        printf("Stack is full\n");
```

```
    }
```

```
}
```

```
int pop(Stack *s){
```

```
    if(!isEmpty(s)){
```

```
        return s -> arr[s -> top--];
```

```
    }else{
```

```
        printf("Stack is empty\n");
```

```
        return -1;
```

```
    }
```

```
}
```

```

void decimalToBinary(int number){
    Stack binary;
    init(&binary);

    while(number > 0){
        push(&binary, number % 2);
        number /= 2;
    }
    printf("Binary Number is: ");
    while(!isEmpty(&binary)){
        printf("%d", pop(&binary));
    }
    printf("\n");
}

```

Output:

```

tanis@Tanishq MINGW64 /d/COEP/DSA/Serious/Assignment3/decimalToBinary
• $ gcc -Wall main.c logic.c

tanis@Tanishq MINGW64 /d/COEP/DSA/Serious/Assignment3/decimalToBinary
• $ ./a
Enter the Decimal Number: 14
Binary Number is: 1110

tanis@Tanishq MINGW64 /d/COEP/DSA/Serious/Assignment3/decimalToBinary
• $ ./a
Enter the Decimal Number: 64
Binary Number is: 1000000

tanis@Tanishq MINGW64 /d/COEP/DSA/Serious/Assignment3/decimalToBinary
• $ ./a
Enter the Decimal Number: 127
Binary Number is: 1111111

```