

# Work on project. Stage 2/4: Convert to decimal

335 users solved this problem. Latest completion was about 20 hours ago.

Project: [Number Base Converter](#)

Medium 53 minutes ?

## Description

At this point, the user needs to restart the program each time after converting just one number, which is very inconvenient. Let's fix that and make your program prompt the user for more numbers until the user is ready to quit.

Also, we will add the reverse conversion: from binary, octal, and hexadecimal systems to decimal. Converting from octal, hexadecimal, or any other system to decimal works almost the same way as with binary numbers, only the base is different. See for yourself:

$$1726_8 = 1 * 512 + 7 * 64 + 2 * 8 + 6 * 1 = 982_{10}$$

$$A3C_{16} = 10 * 256 + 3 * 16 + 12 * 1 = 2620_{10}$$

## Objectives

Your program should output the prompt `Do you want to convert /from decimal or /to decimal? (To quit type /exit)` to prompt the user for their next move. The possible commands are `/from`, `/to`, and `/exit`.

- If the user types `/from`, the program should behave as in the previous stage and convert the user's number from the decimal system to binary, octal, or hexadecimal.
- If the user types `/to`, the program should:
  1. Print the prompt `Enter source number:` and read the user input number to be converted to decimal.
  2. Print the prompt `Enter source base:` and read the target base (2, 8, or 16).
  3. Output the message `Conversion to decimal result:` followed by the number's representation in the decimal system.
- If the user types `/exit`, the program stops. Otherwise, it should process the command and prompt for the next one.

## Examples

The greater-than symbol followed by a space (`>` ) represents the user input. Note that it's not part of the input.

### Example 1:

```
Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /from
Enter a number in decimal system: > 8
Enter the target base: > 16
Conversion result: 8

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /from
Enter a number in decimal system: > 101
Enter the target base: > 2
Conversion result: 1100101

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /from
Enter a number in decimal system: > 103
Enter the target base: > 8
Conversion result: 147

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /exit
```

### Example 2:

### 51 / 51 Prerequisites

- ✓ [Computer programming](#) In project 5 ✓
- ✓ [Type casting](#) In project 14 ✓
- ✓ [Introduction to OOP](#) In project 5 ✓
- ✓ [Immutability](#) In project 3 ✓
- ✓ [Characters](#) In project 19 ✓

Show all

[Join a study group for the project Number Base Converter](#)

Discuss your current project with fellow learners and help each other.

```

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /to
Enter source number: > ff
Enter source base: > 16
Conversion to decimal result: 255

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /to
Enter source number: > 71
Enter source base: > 8
Conversion to decimal result: 57

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /to
Enter source number: > 111001
Enter source base: > 2
Conversion to decimal result: 57

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /exit

```

### Example 3:

```

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /to
Enter source number: > 25a
Enter source base: > 16
Conversion to decimal result: 602

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /from
Enter number in decimal system: > 602
Enter target base: > 16
Conversion result: 25a

Do you want to convert /from decimal or /to decimal? (To quit type /exit) > /exit

```

 Report a typo

 See hint

↩ Write a program

[Code Editor](#)

[IDE](#)

Java

```

1  package converter;
2
3  import java.lang.*;
4  import java.util.*;
5
6  public class Main {
7
8      public static void main(String[] args) {
9          start();
10
11      }
12
13      public static void start(){
14          Scanner sc = new Scanner(System.in);
15          while(true){
16              System.out.print("Do you want to convert /from decimal or /to decimal? (To quit type /exit) ");
17              String str = sc.nextLine();
18              if(str.equals("/exit")){
19                  return;
20              }
21              else if(str.equals("/to")){
22                  toDecimal();
23              }
24              else if(str.equals("/from")){
25                  fromDecimal();
26              }
27          }
28      }
29
30      public static void toDecimal(){
31          Scanner sc = new Scanner(System.in);
32          System.out.print("Enter source number: ");
33          String source = sc.nextLine();
34          System.out.print("Enter source base: ");
35          int base = sc.nextInt();
36          int result = 1;
37          if(base == 16){
38              result = Integer.parseInt(source, 16);
39          }
40      }
41
42      public static void fromDecimal(){
43          Scanner sc = new Scanner(System.in);
44          System.out.print("Enter number in decimal system: ");
45          int decimal = sc.nextInt();
46          System.out.print("Enter target base: ");
47          int targetBase = sc.nextInt();
48          String result = "";
49          while(decimal > 0){
50              int remainder = decimal % targetBase;
51              decimal = decimal / targetBase;
52              result = Integer.toString(remainder, targetBase) + result;
53          }
54          System.out.println(result);
55      }
56  }

```

```

39     }
40     else if(base == 8){
41         result = Integer.parseInt(source, 8);
42     }
43     else if(base == 2){
44         result = Integer.parseInt(source, 2);
45     }
46     System.out.println("Conversion to decimal result: " + result + "\n");
47 }
48
49 public static void fromDecimal(){
50     Scanner sc = new Scanner(System.in);
51     System.out.print("Enter number in decimal system: ");
52     int source = sc.nextInt();
53     System.out.print("Enter target base: ");
54     int target = sc.nextInt();
55     String result = "";
56     if(target == 16){
57         result = Integer.toHexString(source);
58     }
59     else if(target == 8){
60         result = Integer.toOctalString(source);
61     }
62     else if(target == 2){
63         result = Integer.toBinaryString(source);
64     }
65     System.out.println("Conversion to decimal result: " + result + "\n");
66 }
67 }
68

```

✓ **Correct.**

[Install an IDE](#) to get access to powerful debugging tools which let you examine your solution step by step.

35 users liked this problem. 1 didn't like it. **What about you?**



[Comments \(6\)](#)

[Hints \(4\)](#)

[Useful links \(0\)](#)

[Solutions \(73\)](#)

[Show discussion](#)