

Digit traversal:

$$287 \rightarrow 2, 8, 7$$

$$4,3 \rightarrow 4 \times 10 + 3 \times 1 = 40 + 3 = 43$$

$$\underline{287}$$

$$1. \quad \underline{287} \% 10 = \boxed{7} \rightarrow 287 / 10 = \underline{28}$$

$$2. \quad \underline{28} \% 10 = \boxed{8} \rightarrow 28 / 10 = \underline{2}$$

$$3. \quad 2 \% 10 = \boxed{2} \rightarrow 2 / 10 = \underline{0}$$

$$\underline{7}, \underline{8}, \underline{2}$$

$$n = \underline{287} \quad \underline{28} \quad \%10$$

→ ②

```
void printDigits(int n) {
```

```
    while(n > 0) {
```

```
        int rem = n % 10; → 8
```

```
        System.out.println(rem);
```

```
        n = n / 10; n → 28 / 10 → 2
```

```
    }
```

```
}
```

278

$$278 \% 10 = \underline{8}$$

$$n = 278 / 10 = 27$$

$$rem = 27 \% 10 = 7$$

$$n \rightarrow 2$$

$$rem = 2 \% 10 = \underline{2}$$

$$n \rightarrow 2 / 10 \rightarrow 0$$

GCD (Greatest Common Divisor)

$$\begin{array}{r} 40, 20 \\ \hline \rightarrow 20. \end{array}$$

$$\begin{array}{r} 40, 50 \\ 40 \overline{) 50} \\ \underline{40} \\ 10 \end{array}$$

$$\begin{array}{r} 40 \\ 10 \overline{) 40} \\ \underline{40} \\ 0 \end{array}$$

$$\begin{array}{r} 40, 50 \rightarrow 10 \\ 40 \overline{) 50} \\ \underline{40} \\ 10 \end{array}$$

$$\begin{array}{r} 40 \\ 10 \overline{) 40} \\ \underline{40} \\ 0 \end{array}$$

$$\begin{array}{r} 40, 52 \\ 40 \overline{) 52} \\ \underline{40} \\ 12 \end{array}$$

$$\begin{array}{r} 40 \\ 12 \overline{) 40} \\ \underline{36} \\ 4 \end{array}$$

$$\begin{array}{r} 40 \\ 4 \overline{) 40} \\ \underline{40} \\ 0 \end{array}$$

$$\begin{array}{r} 40 \\ 12 \overline{) 40} \\ \underline{36} \\ 4 \end{array}$$

$$\begin{array}{r} 40 \\ 13 \overline{) 52} \\ \underline{52} \\ 0 \end{array}$$

$a=53$
 $b=40 \rightarrow a=40$
 $b=53$

$a=40 \rightarrow 53$
 $b=53 \rightarrow 40$

$$b = 53 \rightarrow 40 - 13 \times 3$$

$$\text{rem} = b \% a = 53 \% 40 = 13$$

$$b = 40 = a$$

$$a = \text{rem} = 13$$

$$\text{rem} = 40 \% 13 = 1$$

$$b = 13$$

$$a = 1$$

$$\text{rem} = 13 \% 1 = 0$$

$$b = 1$$

$$a = 0$$

$$40, 53 \rightarrow 1$$

$$40 \overline{) 53} \begin{array}{r} 1 \\ 40 \\ \hline 13 \end{array}$$

$$13 \overline{) 40} \begin{array}{r} 3 \\ 39 \\ \hline 1 \end{array}$$

$$1 \overline{) 13} \begin{array}{r} 13 \\ \hline 0 \end{array}$$

$$53 \% 40 = 13$$

$$40 \% 13 = 1$$

$$13 \% 1 = 0$$

```

9 public class Main
10 {
11     public static void main(String[] args) {
12         //System.out.println("Hello World");
13         int a=675, b=100;
14         if(a>b){
15             int temp=a;
16             a=b;
17             b=temp;
18         }
19         int gcdvalue = gcd(a,b);
20         System.out.println(gcdvalue);
21     }
22     static int gcd(int a, int b){
23         while(a!=0){
24             int rem = b%a;
25             b=a;
26             a=rem;
27         }
28         return b;
29     }
30 }

```