

## EANCheck

Write a program that reports whether an entered European Article Number (EAN) is valid or not.

An EAN is valid if the check digit is correct, otherwise not. Thus, it is required to enter the full EAN including the check digit and then report VALID or NOT VALID.

##Examples (Text in red = user input)

```
Enter all 13 digits of EAN: 9783890111049
The EAN is VALID.
```

```
Enter all 13 digits of EAN: 9783890111048
The EAN is NOT VALID.
```

## Hint

European countries use a 13-digit code, known as a European Article Number (EAN). Each EAN ends with a check digit. The algorithm for calculating the check digit on position 13 is as follows:

- Compute the sum of the digits on even positions (2,4,6,8,10,12)
- Compute the sum of the digits on odd positions (1,3,5,7,9,11)
- Multiply the first sum by 3 and add it to the second sum.
- Subtract 1 from the total sum.
- Compute the remainder when the adjusted total is divided by 10.
- Subtract the remainder from 9.

Let the EAN be 002490100070. Then we compute the check digit as follows: The sum of digits on even positions is  $0+4+0+0+0+0 = 4$ , the sum of digits on odd positions is  $0+2+9+1+0+7 = 19$ . Multiplying the first sum by 3 and adding it to the second sum gives  $3*4+19 = 31$ , and subtracting one we get 30. The remainder after dividing it by 10 is 0. Subtracting 0 from 9 gives 9.

Complete problem [EAN\_CheckDigitComputation] first.

Do not read the EAN as a `String` - use a sufficiently large integer type (e.g. `long`)