

Pensieve Header: Validating IBAN numbers as in http://en.wikipedia.org/wiki/International_Bank_Account_Number#Algorithms

```
iban = "GB82WEST12345698765432"
```

```
GB82WEST12345698765432
```

```
StringLength[iban]
```

```
22
```

```
RotateLeft[Characters[iban], 4]
```

```
{W, E, S, T, 1, 2, 3, 4, 5, 6, 9, 8, 7, 6, 5, 4, 3, 2, G, B, 8, 2}
```

```
ToCharacterCode["09aA"]
```

```
{48, 57, 97, 65}
```

```
Flatten[
```

```
  ToCharacterCode /@ RotateLeft[Characters[iban], 4]
```

```
] /. {
```

```
  c_Integer /; 48 ≤ c ≤ 57 => ToString[c - 48],
```

```
  c_Integer /; c ≥ 65 => ToString[c - 55]
```

```
}
```

```
{32, 14, 28, 29, 1, 2, 3, 4, 5, 6, 9, 8, 7, 6, 5, 4, 3, 2, 16, 11, 8, 2}
```

```
StringJoin[Flatten[
```

```
  ToCharacterCode /@ RotateLeft[Characters[iban], 4]
```

```
] /. {
```

```
  c_Integer /; 48 ≤ c ≤ 57 => ToString[c - 48],
```

```
  c_Integer /; c ≥ 65 => ToString[c - 55]
```

```
}
```

```
]
```

```
3214282912345698765432161182
```

```
mod97[iban_String] := Mod[ToExpression[StringJoin[Flatten[
```

```
  ToCharacterCode /@ RotateLeft[Characters[iban], 4]
```

```
] /. {
```

```
  c_Integer /; 48 ≤ c ≤ 57 => ToString[c - 48],
```

```
  c_Integer /; c ≥ 65 => ToString[c - 55]
```

```
}
```

```
]], 97];
```

```
mod97[iban]
```

```
1
```

```
mod97["IL000204470000000100664"]
```

```
67
```

```
mod97["IL310204470000000100664"]
```

```
1
```

```
StringLength["IL830204470000000100664"]
```

```
23
```

```
mod97 ["GB82WEST12345698765432"]
```

89