

i18n & l10n

Numeronims



World Wide Web Consortium

a11y

accessibility

accessibility

1 2 3 4 5 6 7 8 9 10 11

a11y

E15

Eyjafjallajökull



Photo by Jon Gustafsson

i18n & l10n

internationalisation

&

localisation

internationalisation

the process of **designing a software application**
so that it **can be adapted to various languages**
and regions **without engineering changes**

localisation

the process of **adapting internationalized software**
for a specific region or language **by translating**
text and adding **locale-specific components**

Locales

ro

locale short form (Language only)

ro-RO

locale long form (Language - Region)

en-US

en-GB

locale long form (Language - Region)

en-US

color

en-GB

colour

locale long form (Language - Region)

sr-latn-RS

sr-cyrl-RS

locale long form (Language - Script - Region)

sr-latn-RS

sr-cyrl-RS

ćirilica

ћирилица

locale long form (Language - Script - Region)

Extensions

T

Transformed Content

U

Unicode Locale

en-t-jp

English content translated from the original Japanese

Extension T (Transformed Content)

he-IL-u-nu-latn-ca-hebrew-tz-jeruslm



Hebrew language as spoken in Israel,
using Basic Latin numerals (0 through 9),
the traditional Hebrew calendar,
and in the "Asia/Jerusalem" time zone

Extension U (Unicode Locale)



ro-RO

IETF BCP 47 Language Tag

Internet Engineering Task Force
Best Current Practices

ro_RO

Java Locale

// get user Locale ?

navigator.languages

returns the language(s) from the Browser, not the OS

on native apps, you get the OS language(s)



Translations

i18next

JavaScript internationalization framework

p11n

pluralisation

1 fruit
2 fruits

English

	1	fruit
0, 2+		fruits

English: 1 plural + singular

1 fruct

2 fructe

20 de fructe

Romanian

	1	fruct
0, 2-19		fructe
	20+	de fructe

Romanian: 2 plural forms + singular

zero

one

two

few

many

other

Plural Rules

```
new Intl.PluralRules(locale)  
.select(count)
```

Plural Rules

key_0	→	zero
key_1	→	one
key_2	→	two
key_3	→	few
key_4	→	many
key_5	→	other

i18next Plural Rules

Date / Time

Moment.js

date-fns

Day.js

Intl

ECMAScript Internationalization API

Intl.DateTimeFormat()

Numbers

Arabic

1 2 3 4 5 6 7 8 9

Cyrilic

А В Г Д Е Ѕ З И Θ

Numeral system != Alphabet

sr-latn-RS

20 – dvadeset

sr-cyrl-RS

20 – двадесет

Numeral system != Alphabet

Intl.NumberFormat()

Decimals, Currencies, Percents, Units

Browsers



Node.js



v13+ built-in

React Native



requires enabling

Intl support

**RTL, Address, Phone numbers, Calendar
Icons / Symbols, Colors**

THANK YOU

new Intl

Number.prototype.toLocaleString

Intl.NumberFormat

new Intl.NumberFormat

{style: 'decimal'}

20

이십

עשרים

Intl.NumberFormat

ro en-GB sr-cyrl-RS

he-IL-u-nu-latn-ca-hebrew-tz-jerusalem

Intl.NumberFormat