

Java Localization

Localization is the process of adapting internationalized software for a specific region or country by translating text and adding locale-specific components.

So, it is good to develop an application using the concept of internationalization. It saves time and reduces development cost and require less efforts to maintain it.

Within Java, we have a fantastic feature at our disposal called the Locale class. It allows us to quickly differentiate between cultural locales and format our content appropriately. Similar to I18N, Localization also has its acronym - "I10N" because of the 10 letters between 'l' and 'N'.

The main reason for using Locale is that all required local-specific formatting can be accessed without recompilation. The application can handle multiple locales at once, so support for a new language is straightforward.

Before understanding the term Localization, it is important to understand a concept that is often read along with it, "Internationalization".

Java Internationalization

Internationalization is the process of developing a software application so that it can be altered to various languages and regions without modifying the application. Developing an application locale specific increases, the cost of the application, also require lots of maintenance.

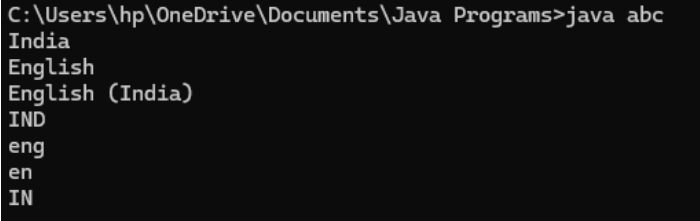
Internationalization is the process of developing an application that supports various languages, number formats, currency, date, time and other formats. It is an integral part of any modern multilingual system.

There is a very popular abbreviation (perhaps more popular than the real name) for international production - "I18N" because of the 18 characters between 'i' and 'n'.

Modern business systems need to serve people from different regions/ countries of the world or many cultural areas. Different cultural or linguistic regions determine not only the specific meanings of a language but also determine the type of currency, numerical representation, and even variation of date and time.

```
import java.util.* ;
public class abc
{
    public static void main( String[ ] args )
    {
        Locale locale = Locale.getDefault( ) ;
        System.out.println( locale.getDisplayCountry( ) ) ;
        System.out.println( locale.getDisplayLanguage( ) ) ;
        System.out.println( locale.getDisplayName( ) ) ;

        // to display the three-letter abbreviation for the locale's country
        System.out.println( locale.getISO3Country( ) ) ;
        // to display the three-letter abbreviation for the locale's language
        System.out.println( locale.getISO3Language( ) ) ;
        // to display the two-letter abbreviation for the Locale's language
        System.out.println( locale.getLanguage( ) ) ;
        // to display the locale's country code which is an uppercase ISO 2-letter code
        System.out.println( locale.getCountry( ) ) ;
        // to display the locale's variant code appropriate for the user
        System.out.println( locale.getDisplayVariant( ) ) ;
    }
}
```



Program to print "English" is written in french and spanish languages:

```
import java.util.*;
public class abc
{
    public static void main(String[] args)
    {
        Locale enLocale = new Locale("en", "US");
        Locale frLocale = new Locale("fr", "FR");
        Locale esLocale = new Locale("es", "ES");
        System.out.println("English language name (default): " + enLocale.getDisplayLanguage());
        System.out.println("English language name in French: " + enLocale.getDisplayLanguage(frLocale));
        System.out.println("English language name in spanish: " + enLocale.getDisplayLanguage(esLocale));
    }
}
```

```
C:\Users\hp\OneDrive\Documents\Java Programs>java abc
English language name (default): English
English language name in French: anglais
English language name in spanish: inglés
```

```
import java.util.*;
public class abc
{
    public static void main(String[] args)
    {
        Locale[] locales = { new Locale("en", "US"), new Locale("es", "ES"), new Locale("it", "IT") };
        for (int i=0; i< locales.length; i++)
        {
            String displayLanguage = locales[i].getDisplayLanguage(locales[i]);
            System.out.println(locales[i].toString() + ": " + displayLanguage);
        }
    }
}
```

```
C:\Users\hp\OneDrive\Documents\Java Programs>java abc
en_US: English
es_ES: español
it_IT: italiano
```

```

import java.text.DateFormat;
import java.util.*;
public class abc
{
    static void printDate(Locale locale)
    {
        DateFormat formatter=DateFormat.getDateInstance(DateFormat.DEFAULT,locale);
        Date currentDate=new Date();
        String date=formatter.format(currentDate);
        System.out.println(date+" "+locale);
    }

    public static void main(String[] args)
    {
        printDate(Locale.UK);
        printDate(Locale.US);
        printDate(Locale.FRANCE);
    }
}

```

```

C:\Users\hp\OneDrive\Documents\Java Programs>java abc
28 Aug 2024 en_GB
Aug 28, 2024 en_US
28 août 2024 fr_FR

```

```

import java.text.DateFormat;
import java.util.*;
public class InternationalizingTime
{
    static void printTime(Locale locale)
    {
        DateFormat formatter=DateFormat.getTimeInstance(DateFormat.DEFAULT,locale);
        Date currentDate=new Date();
        String time=formatter.format(currentDate);
        System.out.println(time+" in locale "+locale);
    }

    public static void main(String[] args)
    {
        printTime(Locale.UK);
        printTime(Locale.US);
        printTime(Locale.FRANCE);
    }
}

```

```

C:\Users\hp\OneDrive\Documents\Java Programs>java abc
28 Aug 2024 en_GB
Aug 28, 2024 en_US
28 août 2024 fr_FR

```

```

import java.text.NumberFormat;
import java.util.*;
public class abc
{
    static void printNumber(Locale locale)
    {
        double dbl=105000.3245;
        NumberFormat formatter=NumberFormat.getNumberInstance(locale);
        String number=formatter.format(dbl);
        System.out.println(number+" for the locale "+locale);
    }

    public static void main(String[] args)
    {
        printNumber(Locale.UK);
        printNumber(Locale.US);
        printNumber(Locale.FRANCE);
        printNumber(Locale.JAPAN);
    }
}

```

```

C:\Users\hp\OneDrive\Documents\Java Programs>java abc
105,000.325 for the locale en_GB
105,000.325 for the locale en_US
105 000,325 for the locale fr_FR
105,000.325 for the locale ja_JP

```

```

import java.text.NumberFormat;
import java.util.*;
public class abc
{
    static void printCurrency(Locale locale)
    {
        double dbl=10500.3245;
        NumberFormat formatter=NumberFormat.getCurrencyInstance(locale);
        String currency=formatter.format(dbl);
        System.out.println(currency+" for the locale "+locale);
    }

    public static void main(String[] args)
    {
        printCurrency(Locale.UK);
        printCurrency(Locale.US);
        printCurrency(Locale.FRANCE);
    }
}

```

```

C:\Users\hp\OneDrive\Documents\Java Programs>java abc
£10,500.32 for the locale en_GB
$10,500.32 for the locale en_US
10 500,32 ? for the locale fr_FR




```

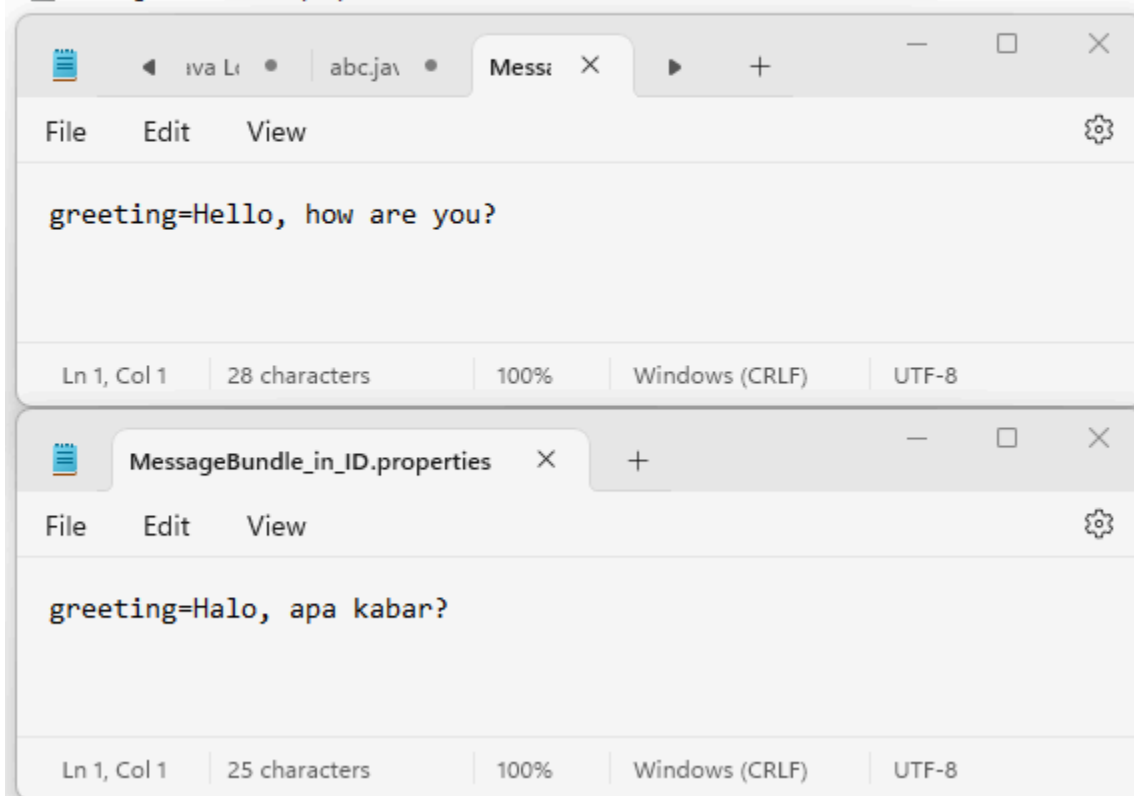
```

import java.util.Locale;
import java.util.ResourceBundle;
public class abc
{
    public static void main(String[] args)
    {
        ResourceBundle bundle = ResourceBundle.getBundle("MessageBundle", Locale.US);
        System.out.println("Message in " + Locale.US + ": " + bundle.getString("greeting"));

        //changing the default locale to indonasian
        Locale.setDefault(new Locale("in", "ID"));
        bundle = ResourceBundle.getBundle("MessageBundle");
        System.out.println("Message in " + Locale.getDefault() + ": " + bundle.getString("greeting"))
    }
}

```

 abc.java	28-08-2024 12:52	JAVA File	1 KB
 MessageBundle_en_US.properties	28-08-2024 12:52	PROPERTIES File	1 KB
 MessageBundle_in_ID.properties	28-08-2024 12:52	PROPERTIES File	1 KB



```

C:\Users\hp\Downloads\resource>java abc
Message in en_US: Hello, how are you?
Message in in_ID: Halo, apa kabar?

```