

%city_populations.txt

```
The most populous cities in the world from 1500 to 2018
Population (thousands)
```

← Title

← x-axis label

12 ← Number of records in this group

```
1500,Beijing,China,672,East Asia
```

← record(year, name, country, value, category)

```
1500,Cairo,Egypt,400,Middle East
```

```
1500,Cuttack,India,140,South Asia
```

```
1500,Fez,Morocco,130,Middle East
```

```
1500,Gauda,India,200,South Asia
```

```
1500,Guangzhou,China,150,East Asia
```

```
1500,Hangzhou,China,250,East Asia
```

```
1500,Istanbul,Turkey,200,Europe
```

```
1500,Nanjing,China,147,East Asia
```

```
1500,Paris,France,185,Europe
```

```
1500,Tabriz,Iran,250,Middle East
```

```
1500,Vijayanagar,India,500,South Asia
```

← Group of records

You can read text files line-by-line. All the fields separated by commas and grouped by time period.

%country_populations.xml

```
<data>
```

```
  <title>The most populous countries in the World</title>
```

← Title

```
  <xlabel>Population</xlabel>
```

← x-axis label

```
    <record>
```

```
      <field name="Name" key="DEU">Germany</field>
```

```
      <field name="Country">Germany</field>
```

```
      <field name="Year">1960</field>
```

```
      <field name="Value">72814900</field>
```

```
      <field name="Category">Europe</field>
```

```
    </record>
```

← record(year, name,
country, value,
category)

```
...
```

```
</data>
```

Each XML element enclosed by the two tags <record> and </record> contains the name, country, year, value, and category information. You should parse the given XML document to extract all the records and then keep them in a right Collection implementation.

You have allowed two alternatives to extract content from an XML document:

- You can use `java.net.URL` and `Scanner` classes to open a stream for given URLs. Then you can extract data by using Regular Expression.
- You can use `javax.xml.parsers` and `org.w3c.dom` libraries.

To parse XML see:

Oracle DOM Parser Tutorial: <https://docs.oracle.com/javase/tutorial/jaxp/dom/readingXML.html>

Java DOM Parser Example: <https://howtodoinjava.com/java/xml/read-xml-dom-parser-example/>

Oracle SAX Parser Tutorial:

<https://docs.oracle.com/javase/tutorial/jaxp/sax/parsing.html>

Java SAX Parser Example: <https://howtodoinjava.com/java/xml/sax-parser-read-xml-example/>

Note: No third-party toolkits or libraries are allowed. However, you are free to use any of the sample code provided in this course.