**Hands on 5: Implement services for managing Country**   
  
An application requires for features to be implemented with regards to country. These features needs to be supported by implementing them as service using Spring Data JPA.

* Find a country based on country code
* Add new country
* Update country
* Delete country
* Find list of countries matching a partial country name

Before starting the implementation of the above features, there are few configuration and data population that needs to be incorporated. Please refer each topic below and implement the same.   
  
**Explanation for Hibernate table creation configuration**

* Moreover the ddl-auto defines how hibernate behaves if a specific table or column is not present in the database.
  + create - drops existing tables data and structure, then creates new tables
  + validate - check if the table and columns exist or not, throws an exception if a matching table or column is not found
  + update - if a table does not exists, it creates a new table; if a column does not exists, it creates a new column
  + create-drop - creates the table, once all operations are completed, the table is dropped

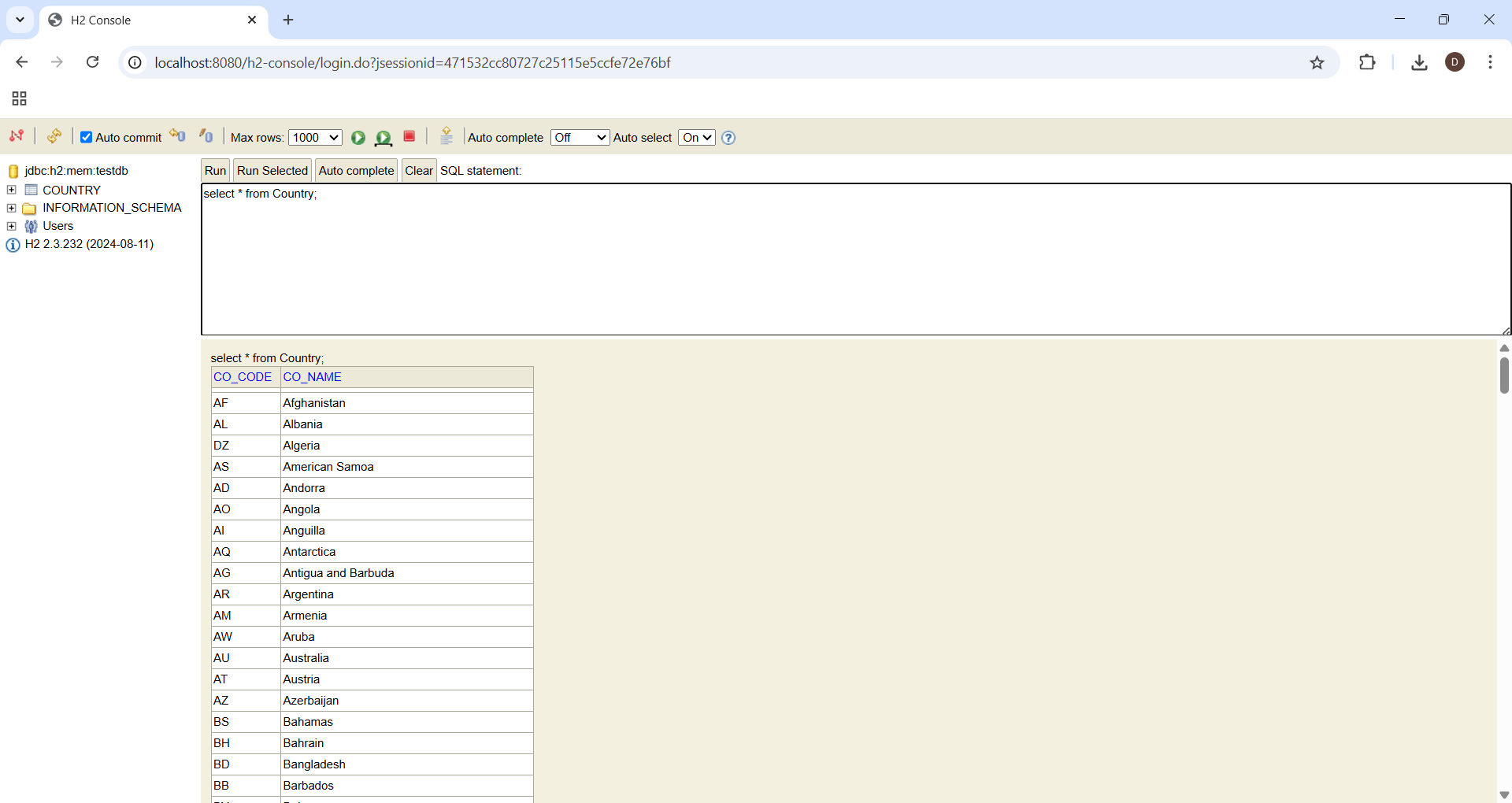
# Hibernate ddl auto (create, create-drop, update, validate)

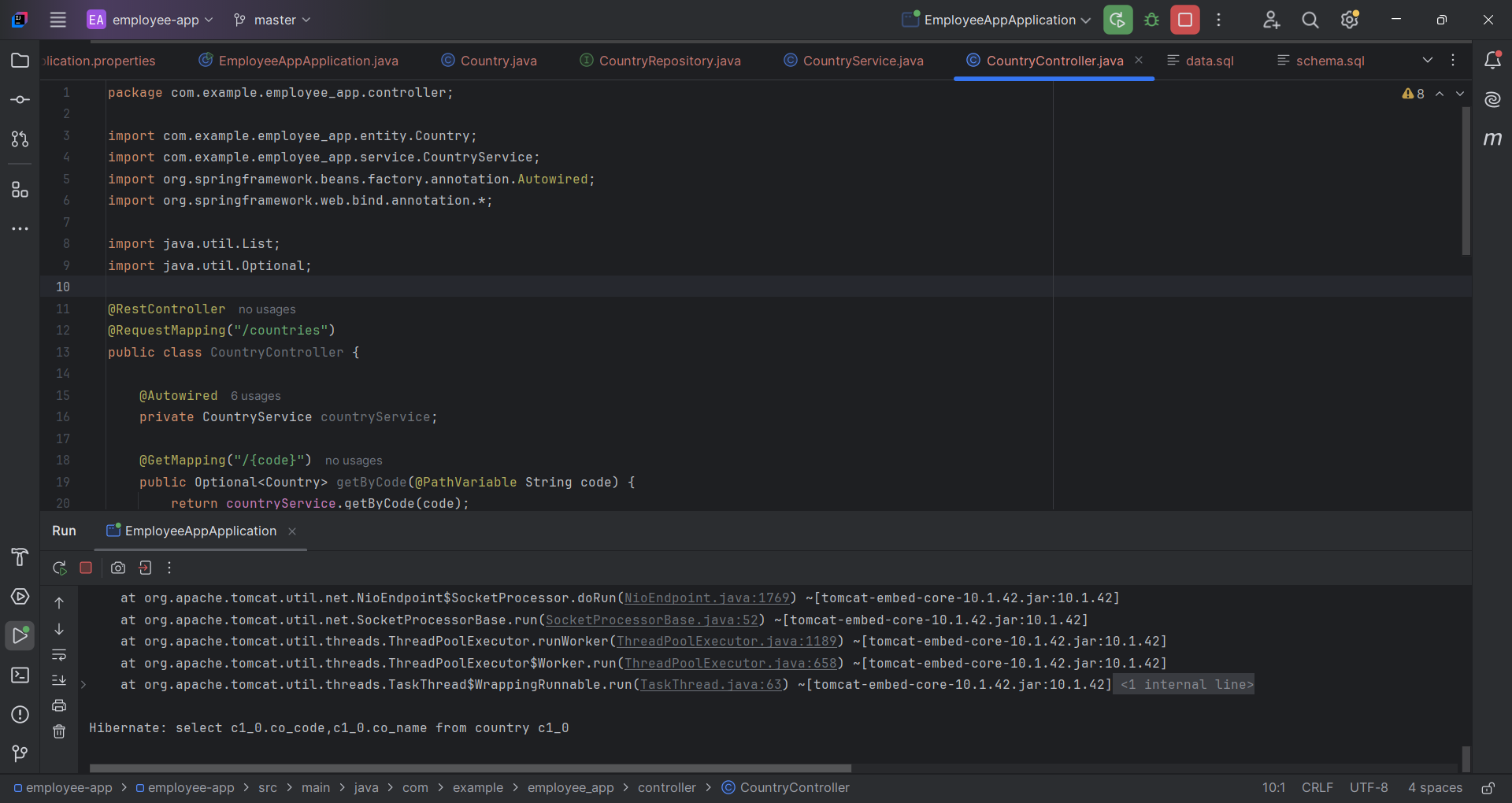
spring.jpa.hibernate.ddl-auto=validate

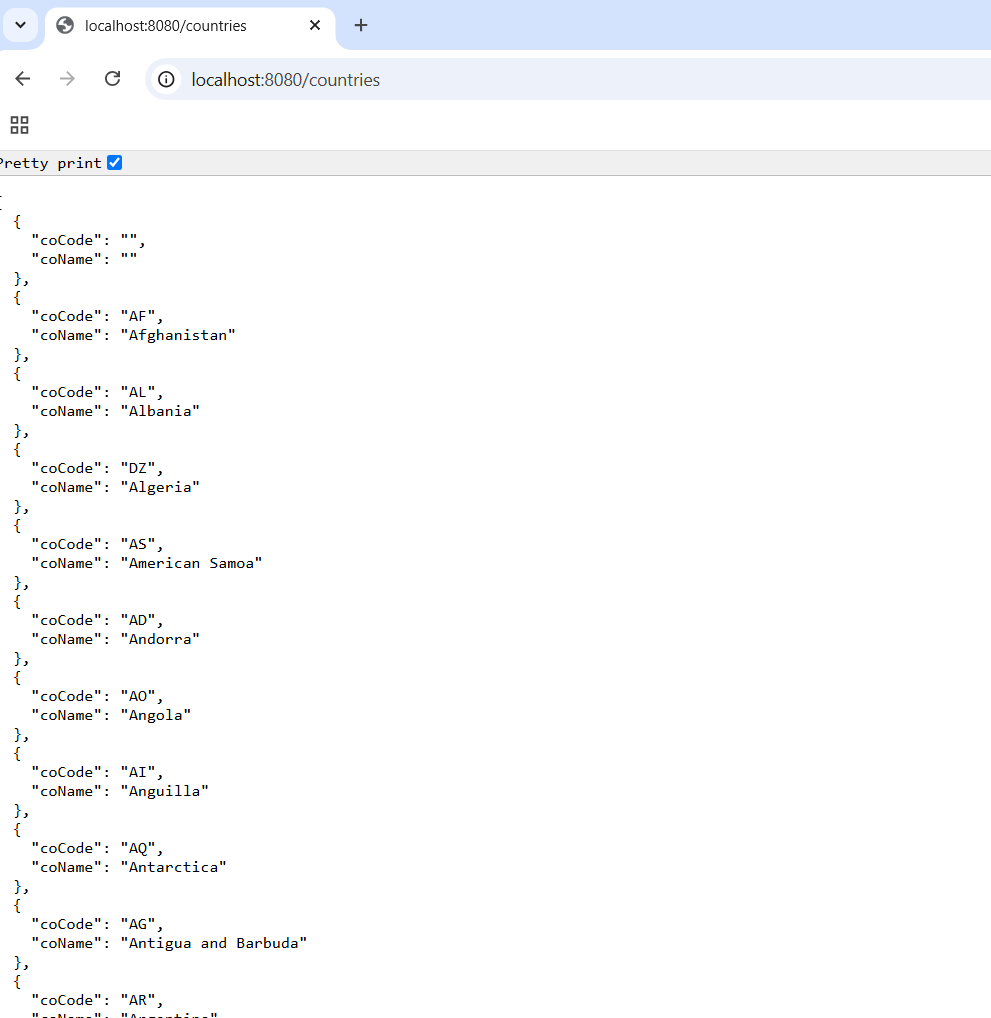
Populate country table

* Delete all the records in Country table and then use the below script to create the actual list of all countries in our world.
* insert into country (co\_code, co\_name) values ("AF", "Afghanistan");
* insert into country (co\_code, co\_name) values ("AL", "Albania");
* insert into country (co\_code, co\_name) values ("DZ", "Algeria");
* insert into country (co\_code, co\_name) values ("AS", "American Samoa");
* insert into country (co\_code, co\_name) values ("AD", "Andorra");
* insert into country (co\_code, co\_name) values ("AO", "Angola");
* insert into country (co\_code, co\_name) values ("AI", "Anguilla");
* insert into country (co\_code, co\_name) values ("AQ", "Antarctica");
* insert into country (co\_code, co\_name) values ("AG", "Antigua and Barbuda");
* insert into country (co\_code, co\_name) values ("AR", "Argentina");
* insert into country (co\_code, co\_name) values ("AM", "Armenia");
* insert into country (co\_code, co\_name) values ("AW", "Aruba");
* insert into country (co\_code, co\_name) values ("AU", "Australia");
* insert into country (co\_code, co\_name) values ("AT", "Austria");
* insert into country (co\_code, co\_name) values ("AZ", "Azerbaijan");
* insert into country (co\_code, co\_name) values ("BS", "Bahamas");
* insert into country (co\_code, co\_name) values ("BH", "Bahrain");
* insert into country (co\_code, co\_name) values ("BD", "Bangladesh");
* insert into country (co\_code, co\_name) values ("BB", "Barbados");
* insert into country (co\_code, co\_name) values ("BY", "Belarus");
* insert into country (co\_code, co\_name) values ("BE", "Belgium");
* insert into country (co\_code, co\_name) values ("BZ", "Belize");
* insert into country (co\_code, co\_name) values ("BJ", "Benin");
* insert into country (co\_code, co\_name) values ("BM", "Bermuda");
* insert into country (co\_code, co\_name) values ("BT", "Bhutan");
* insert into country (co\_code, co\_name) values ("BO", "Bolivia, Plurinational State of");
* insert into country (co\_code, co\_name) values ("BQ", "Bonaire, Sint Eustatius and Saba");
* insert into country (co\_code, co\_name) values ("BA", "Bosnia and Herzegovina");
* insert into country (co\_code, co\_name) values ("BW", "Botswana");
* insert into country (co\_code, co\_name) values ("BV", "Bouvet Island");
* insert into country (co\_code, co\_name) values ("BR", "Brazil");
* insert into country (co\_code, co\_name) values ("IO", "British Indian Ocean Territory");
* insert into country (co\_code, co\_name) values ("BN", "Brunei Darussalam");
* insert into country (co\_code, co\_name) values ("BG", "Bulgaria");
* insert into country (co\_code, co\_name) values ("BF", "Burkina Faso");
* insert into country (co\_code, co\_name) values ("BI", "Burundi");
* insert into country (co\_code, co\_name) values ("KH", "Cambodia");
* insert into country (co\_code, co\_name) values ("CM", "Cameroon");
* insert into country (co\_code, co\_name) values ("CA", "Canada");
* insert into country (co\_code, co\_name) values ("CV", "Cape Verde");
* insert into country (co\_code, co\_name) values ("KY", "Cayman Islands");
* insert into country (co\_code, co\_name) values ("CF", "Central African Republic");
* insert into country (co\_code, co\_name) values ("TD", "Chad");
* insert into country (co\_code, co\_name) values ("CL", "Chile");
* insert into country (co\_code, co\_name) values ("CN", "China");
* insert into country (co\_code, co\_name) values ("CX", "Christmas Island");
* insert into country (co\_code, co\_name) values ("CC", "Cocos (Keeling) Islands");
* insert into country (co\_code, co\_name) values ("CO", "Colombia");
* insert into country (co\_code, co\_name) values ("KM", "Comoros");
* insert into country (co\_code, co\_name) values ("CG", "Congo");
* insert into country (co\_code, co\_name) values ("CD", "Congo, the Democratic Republic of the");
* insert into country (co\_code, co\_name) values ("CK", "Cook Islands");
* insert into country (co\_code, co\_name) values ("CR", "Costa Rica");
* insert into country (co\_code, co\_name) values ("HR", "Croatia");
* insert into country (co\_code, co\_name) values ("CU", "Cuba");
* insert into country (co\_code, co\_name) values ("CW", "Curaçao");
* insert into country (co\_code, co\_name) values ("CY", "Cyprus");
* insert into country (co\_code, co\_name) values ("CZ", "Czech Republic");
* insert into country (co\_code, co\_name) values ("CI", "Côte d'Ivoire");
* insert into country (co\_code, co\_name) values ("DK", "Denmark");
* insert into country (co\_code, co\_name) values ("DJ", "Djibouti");
* insert into country (co\_code, co\_name) values ("DM", "Dominica");
* insert into country (co\_code, co\_name) values ("DO", "Dominican Republic");
* insert into country (co\_code, co\_name) values ("EC", "Ecuador");
* insert into country (co\_code, co\_name) values ("EG", "Egypt");
* insert into country (co\_code, co\_name) values ("SV", "El Salvador");
* insert into country (co\_code, co\_name) values ("GQ", "Equatorial Guinea");
* insert into country (co\_code, co\_name) values ("ER", "Eritrea");
* insert into country (co\_code, co\_name) values ("EE", "Estonia");
* insert into country (co\_code, co\_name) values ("ET", "Ethiopia");
* insert into country (co\_code, co\_name) values ("FK", "Falkland Islands (Malvinas)");
* insert into country (co\_code, co\_name) values ("FO", "Faroe Islands");
* insert into country (co\_code, co\_name) values ("FJ", "Fiji");
* insert into country (co\_code, co\_name) values ("FI", "Finland");
* insert into country (co\_code, co\_name) values ("FR", "France");
* insert into country (co\_code, co\_name) values ("GF", "French Guiana");
* insert into country (co\_code, co\_name) values ("PF", "French Polynesia");
* insert into country (co\_code, co\_name) values ("TF", "French Southern Territories");
* insert into country (co\_code, co\_name) values ("GA", "Gabon");
* insert into country (co\_code, co\_name) values ("GM", "Gambia");
* insert into country (co\_code, co\_name) values ("GE", "Georgia");
* insert into country (co\_code, co\_name) values ("DE", "Germany");
* insert into country (co\_code, co\_name) values ("GH", "Ghana");
* insert into country (co\_code, co\_name) values ("GI", "Gibraltar");
* insert into country (co\_code, co\_name) values ("GR", "Greece");
* insert into country (co\_code, co\_name) values ("GL", "Greenland");
* insert into country (co\_code, co\_name) values ("GD", "Grenada");
* insert into country (co\_code, co\_name) values ("GP", "Guadeloupe");
* insert into country (co\_code, co\_name) values ("GU", "Guam");
* insert into country (co\_code, co\_name) values ("GT", "Guatemala");
* insert into country (co\_code, co\_name) values ("GG", "Guernsey");
* insert into country (co\_code, co\_name) values ("GN", "Guinea");
* insert into country (co\_code, co\_name) values ("GW", "Guinea-Bissau");
* insert into country (co\_code, co\_name) values ("GY", "Guyana");
* insert into country (co\_code, co\_name) values ("HT", "Haiti");
* insert into country (co\_code, co\_name) values ("HM", "Heard Island and McDonald Islands");
* insert into country (co\_code, co\_name) values ("VA", "Holy See (Vatican City State)");
* insert into country (co\_code, co\_name) values ("HN", "Honduras");
* insert into country (co\_code, co\_name) values ("HK", "Hong Kong");
* insert into country (co\_code, co\_name) values ("HU", "Hungary");
* insert into country (co\_code, co\_name) values ("IS", "Iceland");
* insert into country (co\_code, co\_name) values ("IN", "India");
* insert into country (co\_code, co\_name) values ("ID", "Indonesia");
* insert into country (co\_code, co\_name) values ("IR", "Iran, Islamic Republic of");
* insert into country (co\_code, co\_name) values ("IQ", "Iraq");
* insert into country (co\_code, co\_name) values ("IE", "Ireland");
* insert into country (co\_code, co\_name) values ("IM", "Isle of Man");
* insert into country (co\_code, co\_name) values ("IL", "Israel");
* insert into country (co\_code, co\_name) values ("IT", "Italy");
* insert into country (co\_code, co\_name) values ("JM", "Jamaica");
* insert into country (co\_code, co\_name) values ("JP", "Japan");
* insert into country (co\_code, co\_name) values ("JE", "Jersey");
* insert into country (co\_code, co\_name) values ("JO", "Jordan");
* insert into country (co\_code, co\_name) values ("KZ", "Kazakhstan");
* insert into country (co\_code, co\_name) values ("KE", "Kenya");
* insert into country (co\_code, co\_name) values ("KI", "Kiribati");
* insert into country (co\_code, co\_name) values ("KP", "Democratic People's Republic of Korea");
* insert into country (co\_code, co\_name) values ("KR", "Republic of Korea");
* insert into country (co\_code, co\_name) values ("KW", "Kuwait");
* insert into country (co\_code, co\_name) values ("KG", "Kyrgyzstan");
* insert into country (co\_code, co\_name) values ("LA", "Lao People's Democratic Republic");
* insert into country (co\_code, co\_name) values ("LV", "Latvia");
* insert into country (co\_code, co\_name) values ("LB", "Lebanon");
* insert into country (co\_code, co\_name) values ("LS", "Lesotho");
* insert into country (co\_code, co\_name) values ("LR", "Liberia");
* insert into country (co\_code, co\_name) values ("LY", "Libya");
* insert into country (co\_code, co\_name) values ("LI", "Liechtenstein");
* insert into country (co\_code, co\_name) values ("LT", "Lithuania");
* insert into country (co\_code, co\_name) values ("LU", "Luxembourg");
* insert into country (co\_code, co\_name) values ("MO", "Macao");
* insert into country (co\_code, co\_name) values ("MK", "Macedonia, the Former Yugoslav Republic of");
* insert into country (co\_code, co\_name) values ("MG", "Madagascar");
* insert into country (co\_code, co\_name) values ("MW", "Malawi");
* insert into country (co\_code, co\_name) values ("MY", "Malaysia");
* insert into country (co\_code, co\_name) values ("MV", "Maldives");
* insert into country (co\_code, co\_name) values ("ML", "Mali");
* insert into country (co\_code, co\_name) values ("MT", "Malta");
* insert into country (co\_code, co\_name) values ("MH", "Marshall Islands");
* insert into country (co\_code, co\_name) values ("MQ", "Martinique");
* insert into country (co\_code, co\_name) values ("MR", "Mauritania");
* insert into country (co\_code, co\_name) values ("MU", "Mauritius");
* insert into country (co\_code, co\_name) values ("YT", "Mayotte");
* insert into country (co\_code, co\_name) values ("MX", "Mexico");
* insert into country (co\_code, co\_name) values ("FM", "Micronesia, Federated States of");
* insert into country (co\_code, co\_name) values ("MD", "Moldova, Republic of");
* insert into country (co\_code, co\_name) values ("MC", "Monaco");
* insert into country (co\_code, co\_name) values ("MN", "Mongolia");
* insert into country (co\_code, co\_name) values ("ME", "Montenegro");
* insert into country (co\_code, co\_name) values ("MS", "Montserrat");
* insert into country (co\_code, co\_name) values ("MA", "Morocco");
* insert into country (co\_code, co\_name) values ("MZ", "Mozambique");
* insert into country (co\_code, co\_name) values ("MM", "Myanmar");
* insert into country (co\_code, co\_name) values ("NA", "Namibia");
* insert into country (co\_code, co\_name) values ("NR", "Nauru");
* insert into country (co\_code, co\_name) values ("NP", "Nepal");
* insert into country (co\_code, co\_name) values ("NL", "Netherlands");
* insert into country (co\_code, co\_name) values ("NC", "New Caledonia");
* insert into country (co\_code, co\_name) values ("NZ", "New Zealand");
* insert into country (co\_code, co\_name) values ("NI", "Nicaragua");
* insert into country (co\_code, co\_name) values ("NE", "Niger");
* insert into country (co\_code, co\_name) values ("NG", "Nigeria");
* insert into country (co\_code, co\_name) values ("NU", "Niue");
* insert into country (co\_code, co\_name) values ("NF", "Norfolk Island");
* insert into country (co\_code, co\_name) values ("MP", "Northern Mariana Islands");
* insert into country (co\_code, co\_name) values ("NO", "Norway");
* insert into country (co\_code, co\_name) values ("OM", "Oman");
* insert into country (co\_code, co\_name) values ("PK", "Pakistan");
* insert into country (co\_code, co\_name) values ("PW", "Palau");
* insert into country (co\_code, co\_name) values ("PS", "Palestine, State of");
* insert into country (co\_code, co\_name) values ("PA", "Panama");
* insert into country (co\_code, co\_name) values ("PG", "Papua New Guinea");
* insert into country (co\_code, co\_name) values ("PY", "Paraguay");
* insert into country (co\_code, co\_name) values ("PE", "Peru");
* insert into country (co\_code, co\_name) values ("PH", "Philippines");
* insert into country (co\_code, co\_name) values ("PN", "Pitcairn");
* insert into country (co\_code, co\_name) values ("PL", "Poland");
* insert into country (co\_code, co\_name) values ("PT", "Portugal");
* insert into country (co\_code, co\_name) values ("PR", "Puerto Rico");
* insert into country (co\_code, co\_name) values ("QA", "Qatar");
* insert into country (co\_code, co\_name) values ("RO", "Romania");
* insert into country (co\_code, co\_name) values ("RU", "Russian Federation");
* insert into country (co\_code, co\_name) values ("RW", "Rwanda");
* insert into country (co\_code, co\_name) values ("RE", "Réunion");
* insert into country (co\_code, co\_name) values ("BL", "Saint Barthélemy");
* insert into country (co\_code, co\_name) values ("SH", "Saint Helena, Ascension and Tristan da Cunha");
* insert into country (co\_code, co\_name) values ("KN", "Saint Kitts and Nevis");
* insert into country (co\_code, co\_name) values ("LC", "Saint Lucia");
* insert into country (co\_code, co\_name) values ("MF", "Saint Martin (French part)");
* insert into country (co\_code, co\_name) values ("PM", "Saint Pierre and Miquelon");
* insert into country (co\_code, co\_name) values ("VC", "Saint Vincent and the Grenadines");
* insert into country (co\_code, co\_name) values ("WS", "Samoa");
* insert into country (co\_code, co\_name) values ("SM", "San Marino");
* insert into country (co\_code, co\_name) values ("ST", "Sao Tome and Principe");
* insert into country (co\_code, co\_name) values ("SA", "Saudi Arabia");
* insert into country (co\_code, co\_name) values ("SN", "Senegal");
* insert into country (co\_code, co\_name) values ("RS", "Serbia");
* insert into country (co\_code, co\_name) values ("SC", "Seychelles");
* insert into country (co\_code, co\_name) values ("SL", "Sierra Leone");
* insert into country (co\_code, co\_name) values ("SG", "Singapore");
* insert into country (co\_code, co\_name) values ("SX", "Sint Maarten (Dutch part)");
* insert into country (co\_code, co\_name) values ("SK", "Slovakia");
* insert into country (co\_code, co\_name) values ("SI", "Slovenia");
* insert into country (co\_code, co\_name) values ("SB", "Solomon Islands");
* insert into country (co\_code, co\_name) values ("SO", "Somalia");
* insert into country (co\_code, co\_name) values ("ZA", "South Africa");
* insert into country (co\_code, co\_name) values ("GS", "South Georgia and the South Sandwich Islands");
* insert into country (co\_code, co\_name) values ("SS", "South Sudan");
* insert into country (co\_code, co\_name) values ("ES", "Spain");
* insert into country (co\_code, co\_name) values ("LK", "Sri Lanka");
* insert into country (co\_code, co\_name) values ("SD", "Sudan");
* insert into country (co\_code, co\_name) values ("SR", "Suriname");
* insert into country (co\_code, co\_name) values ("SJ", "Svalbard and Jan Mayen");
* insert into country (co\_code, co\_name) values ("SZ", "Swaziland");
* insert into country (co\_code, co\_name) values ("SE", "Sweden");
* insert into country (co\_code, co\_name) values ("CH", "Switzerland");
* insert into country (co\_code, co\_name) values ("SY", "Syrian Arab Republic");
* insert into country (co\_code, co\_name) values ("TW", "Taiwan, Province of China");
* insert into country (co\_code, co\_name) values ("TJ", "Tajikistan");
* insert into country (co\_code, co\_name) values ("TZ", "Tanzania, United Republic of");
* insert into country (co\_code, co\_name) values ("TH", "Thailand");
* insert into country (co\_code, co\_name) values ("TL", "Timor-Leste");
* insert into country (co\_code, co\_name) values ("TG", "Togo");
* insert into country (co\_code, co\_name) values ("TK", "Tokelau");
* insert into country (co\_code, co\_name) values ("TO", "Tonga");
* insert into country (co\_code, co\_name) values ("TT", "Trinidad and Tobago");
* insert into country (co\_code, co\_name) values ("TN", "Tunisia");
* insert into country (co\_code, co\_name) values ("TR", "Turkey");
* insert into country (co\_code, co\_name) values ("TM", "Turkmenistan");
* insert into country (co\_code, co\_name) values ("TC", "Turks and Caicos Islands");
* insert into country (co\_code, co\_name) values ("TV", "Tuvalu");
* insert into country (co\_code, co\_name) values ("UG", "Uganda");
* insert into country (co\_code, co\_name) values ("UA", "Ukraine");
* insert into country (co\_code, co\_name) values ("AE", "United Arab Emirates");
* insert into country (co\_code, co\_name) values ("GB", "United Kingdom");
* insert into country (co\_code, co\_name) values ("US", "United States");
* insert into country (co\_code, co\_name) values ("UM", "United States Minor Outlying Islands");
* insert into country (co\_code, co\_name) values ("UY", "Uruguay");
* insert into country (co\_code, co\_name) values ("UZ", "Uzbekistan");
* insert into country (co\_code, co\_name) values ("VU", "Vanuatu");
* insert into country (co\_code, co\_name) values ("VE", "Venezuela, Bolivarian Republic of");
* insert into country (co\_code, co\_name) values ("VN", "Viet Nam");
* insert into country (co\_code, co\_name) values ("VG", "Virgin Islands, British");
* insert into country (co\_code, co\_name) values ("VI", "Virgin Islands, U.S.");
* insert into country (co\_code, co\_name) values ("WF", "Wallis and Futuna");
* insert into country (co\_code, co\_name) values ("EH", "Western Sahara");
* insert into country (co\_code, co\_name) values ("YE", "Yemen");
* insert into country (co\_code, co\_name) values ("ZM", "Zambia");
* insert into country (co\_code, co\_name) values ("ZW", "Zimbabwe");
* insert into country (co\_code, co\_name) values ("AX", "Åland Islands");

**Solution:**

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