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Since the API given in the assignment return 404 message, so I choose to use other API's to get List of Countries.

```
public async Task GetCountryList()  
{  
    string url = "https://gist.githubusercontent.com/almost/7748738/raw/575f851d945e2a9e6859fb2308e95a3697bea115/countries.json";  
    var response = await client.GetStringAsync(url);  
    File.WriteAllText(countryFile, response);  
}
```

The output of List of Countries JSON file

```
[  
  {"name": "Afghanistan", "code": "AF"},  
  {"name": "Åland Islands", "code": "AX"},  
  {"name": "Albania", "code": "AL"},  
  {"name": "Algeria", "code": "DZ"},  
  {"name": "American Samoa", "code": "AS"},  
  {"name": "Andorra", "code": "AD"},  
  {"name": "Angola", "code": "AO"},  
  {"name": "Anguilla", "code": "AI"},  
  {"name": "Antarctica", "code": "AQ"},  
  {"name": "Antigua and Barbuda", "code": "AG"},  
  {"name": "Argentina", "code": "AR"},  
  {"name": "Armenia", "code": "AM"},  
  {"name": "Aruba", "code": "AW"},  
  {"name": "Australia", "code": "AU"},  
  {"name": "Austria", "code": "AT"},  
  {"name": "Azerbaijan", "code": "AZ"},  
  {"name": "Bahamas", "code": "BS"},  
  {"name": "Bahrain", "code": "BH"},  
  {"name": "Bangladesh", "code": "BD"},  
  {"name": "Barbados", "code": "BB"},  
  {"name": "Belarus", "code": "BY"},  
  {"name": "Belgium", "code": "BE"},  
  {"name": "Belize", "code": "BZ"},  
  {"name": "Benin", "code": "BJ"},  
  {"name": "Bermuda", "code": "BM"},  
  {"name": "Bhutan", "code": "BT"},  
  {"name": "Bolivia", "code": "BO"},  
  {"name": "Bosnia and Herzegovina", "code": "BA"},  
  {"name": "Botswana", "code": "BW"},  
  {"name": "Brazil", "code": "BR"},  
  {"name": "British Indian Ocean Territory", "code": "IO"},  
  {"name": "Brunei Darussalam", "code": "BN"},  
  {"name": "Bulgaria", "code": "BG"},  
  {"name": "Burkina Faso", "code": "BF"},  
  {"name": "Burundi", "code": "BI"},  
  {"name": "Cambodia", "code": "KH"},  
  {"name": "Cameroon", "code": "CM"},  
  {"name": "Canada", "code": "CA"},  
  {"name": "Cape Verde", "code": "CV"},  
  {"name": "Cayman Islands", "code": "KY"},  
  {"name": "Central African Republic", "code": "CF"},  
  {"name": "Chad", "code": "TD"},  
  {"name": "Chile", "code": "CL"},  
  {"name": "China", "code": "CN"},  
  {"name": "Christmas Island", "code": "CX"},  
  {"name": "Cocos (Keeling) Islands", "code": "CC"},  
  {"name": "Colombia", "code": "CO"},  
  {"name": "Comoros", "code": "KM"},  
  {"name": "Congo", "code": "CG"},  
  {"name": "Congo (Kinshasa)", "code": "CD"},  
  {"name": "Cook Islands", "code": "CK"},  
  {"name": "Costa Rica", "code": "CR"},  
  {"name": "Cote d'Ivoire", "code": "CI"},  
  {"name": "Croatia", "code": "HR"},  
  {"name": "Cuba", "code": "CU"},  
  {"name": "Curaçao", "code": "CW"},  
  {"name": "Cyprus", "code": "CY"},  
  {"name": "Czechia", "code": "CZ"},  
  {"name": "Denmark", "code": "DK"},  
  {"name": "Djibouti", "code": "DJ"},  
  {"name": "Dominica", "code": "DM"},  
  {"name": "Dominican Republic", "code": "DO"},  
  {"name": "East Timor", "code": "TL"},  
  {"name": "Ecuador", "code": "EC"},  
  {"name": "Egypt", "code": "EG"},  
  {"name": "El Salvador", "code": "SV"},  
  {"name": "Equatorial Guinea", "code": "GQ"},  
  {"name": "Eritrea", "code": "ER"},  
  {"name": "Estonia", "code": "EE"},  
  {"name": "Ethiopia", "code": "ET"},  
  {"name": "Falkland Islands (Malvinas)", "code": "FK"},  
  {"name": "Faroe Islands", "code": "FO"},  
  {"name": "Fiji", "code": "FJ"},  
  {"name": "Finland", "code": "FI"},  
  {"name": "France", "code": "FR"},  
  {"name": "French Guiana", "code": "GF"},  
  {"name": "French Polynesia", "code": "PF"},  
  {"name": "Gabon", "code": "GA"},  
  {"name": "Gambia", "code": "GM"},  
  {"name": "Georgia", "code": "GE"},  
  {"name": "Germany", "code": "DE"},  
  {"name": "Ghana", "code": "GH"},  
  {"name": "Gibraltar", "code": "GI"},  
  {"name": "Greece", "code": "GR"},  
  {"name": "Greenland", "code": "GL"},  
  {"name": "Grenada", "code": "GD"},  
  {"name": "Guadeloupe", "code": "GP"},  
  {"name": "Guam", "code": "GU"},  
  {"name": "Guatemala", "code": "GT"},  
  {"name": "Guinea", "code": "GN"},  
  {"name": "Guinea-Bissau", "code": "GW"},  
  {"name": "Guyana", "code": "GY"},  
  {"name": "Haiti", "code": "HT"},  
  {"name": "Honduras", "code": "HN"},  
  {"name": "Hong Kong", "code": "HK"},  
  {"name": "Hungary", "code": "HU"},  
  {"name": "Iceland", "code": "IS"},  
  {"name": "India", "code": "IN"},  
  {"name": "Indonesia", "code": "ID"},  
  {"name": "Iran (Islamic Republic of)", "code": "IR"},  
  {"name": "Iraq", "code": "IQ"},  
  {"name": "Ireland", "code": "IE"},  
  {"name": "Israel", "code": "IL"},  
  {"name": "Italy", "code": "IT"},  
  {"name": "Jamaica", "code": "JM"},  
  {"name": "Japan", "code": "JP"},  
  {"name": "Jordan", "code": "JO"},  
  {"name": "Kazakhstan", "code": "KZ"},  
  {"name": "Kenya", "code": "KE"},  
  {"name": "Kiribati", "code": "KI"},  
  {"name": "Korea", "code": "KR"},  
  {"name": "Kosovo", "code": "XK"},  
  {"name": "Kuwait", "code": "KW"},  
  {"name": "Kyrgyzstan", "code": "KG"},  
  {"name": "Laos", "code": "LA"},  
  {"name": "Latvia", "code": "LV"},  
  {"name": "Lebanon", "code": "LB"},  
  {"name": "Lesotho", "code": "LS"},  
  {"name": "Liberia", "code": "LR"},  
  {"name": "Liechtenstein", "code": "LI"},  
  {"name": "Lithuania", "code": "LT"},  
  {"name": "Luxembourg", "code": "LU"},  
  {"name": "Madagascar", "code": "MG"},  
  {"name": "Malawi", "code": "MW"},  
  {"name": "Malaysia", "code": "MY"},  
  {"name": "Maldives", "code": "MV"},  
  {"name": "Mali", "code": "ML"},  
  {"name": "Malta", "code": "MT"},  
  {"name": "Marshall Islands", "code": "MH"},  
  {"name": "Mauritania", "code": "MR"},  
  {"name": "Mauritius", "code": "MU"},  
  {"name": "Mayotte", "code": "YT"},  
  {"name": "Mexico", "code": "MX"},  
  {"name": "Micronesia (Federated States of)", "code": "FM"},  
  {"name": "Moldova", "code": "MD"},  
  {"name": "Monaco", "code": "MC"},  
  {"name": "Mongolia", "code": "MN"},  
  {"name": "Montenegro", "code": "ME"},  
  {"name": "Montserrat", "code": "MS"},  
  {"name": "Morocco", "code": "MA"},  
  {"name": "Mozambique", "code": "MZ"},  
  {"name": "Myanmar", "code": "MM"},  
  {"name": "Namibia", "code": "NA"},  
  {"name": "Nauru", "code": "NR"},  
  {"name": "Nepal", "code": "NP"},  
  {"name": "Netherlands", "code": "NL"},  
  {"name": "Netherlands Antilles", "code": "BQ"},  
  {"name": "New Caledonia", "code": "NC"},  
  {"name": "New Zealand", "code": "NZ"},  
  {"name": "Nicaragua", "code": "NI"},  
  {"name": "Niger", "code": "NE"},  
  {"name": "Nigeria", "code": "NG"},  
  {"name": "Niue", "code": "NU"},  
  {"name": "Norfolk Island", "code": "NF"},  
  {"name": "North Macedonia", "code": "MK"},  
  {"name": "Northern Mariana Islands", "code": "MP"},  
  {"name": "Norway", "code": "NO"},  
  {"name": "Oman", "code": "OM"},  
  {"name": "Pakistan", "code": "PK"},  
  {"name": "Palau", "code": "PW"},  
  {"name": "Palestine", "code": "PS"},  
  {"name": "Panama", "code": "PA"},  
  {"name": "Papua New Guinea", "code": "PG"},  
  {"name": "Paraguay", "code": "PY"},  
  {"name": "Peru", "code": "PE"},  
  {"name": "Philippines", "code": "PH"},  
  {"name": "Poland", "code": "PL"},  
  {"name": "Portugal", "code": "PT"},  
  {"name": "Puerto Rico", "code": "PR"},  
  {"name": "Qatar", "code": "QA"},  
  {"name": "Romania", "code": "RO"},  
  {"name": "Rwanda", "code": "RW"},  
  {"name": "Saint Kitts and Nevis", "code": "KN"},  
  {"name": "Saint Lucia", "code": "LC"},  
  {"name": "Saint Vincent and the Grenadines", "code": "VG"},  
  {"name": "Samoa", "code": "WS"},  
  {"name": "San Marino", "code": "SM"},  
  {"name": "Sao Tome and Principe", "code": "ST"},  
  {"name": "Saudi Arabia", "code": "SA"},  
  {"name": "Senegal", "code": "SN"},  
  {"name": "Serbia", "code": "RS"},  
  {"name": "Seychelles", "code": "SC"},  
  {"name": "Sierra Leone", "code": "SL"},  
  {"name": "Singapore", "code": "SG"},  
  {"name": "Slovakia", "code": "SK"},  
  {"name": "Slovenia", "code": "SI"},  
  {"name": "Solomon Islands", "code": "SB"},  
  {"name": "Somalia", "code": "SO"},  
  {"name": "South Africa", "code": "ZA"},  
  {"name": "South Korea", "code": "KR"},  
  {"name": "South Sudan", "code": "SS"},  
  {"name": "Spain", "code": "ES"},  
  {"name": "Sri Lanka", "code": "LK"},  
  {"name": "Sri Lanka", "code": "LK"},  
  {"name": "Sudan", "code": "SD"},  
  {"name": "Suriname", "code": "SR"},  
  {"name": "Swaziland", "code": "SZ"},  
  {"name": "Sweden", "code": "SE"},  
  {"name": "Switzerland", "code": "CH"},  
  {"name": "Syria", "code": "SY"},  
  {"name": "Taiwan", "code": "TW"},  
  {"name": "Tajikistan", "code": "TJ"},  
  {"name": "Tanzania", "code": "TZ"},  
  {"name": "Thailand", "code": "TH"},  
  {"name": "Togo", "code": "TG"},  
  {"name": "Tonga", "code": "TO"},  
  {"name": "Trinidad and Tobago", "code": "TT"},  
  {"name": "Tunisia", "code": "TN"},  
  {"name": "Turkey", "code": "TR"},  
  {"name": "Turkmenistan", "code": "TM"},  
  {"name": "Turkmenistan", "code": "TM"},  
  {"name": "Turks and Caicos Islands", "code": "TC"},  
  {"name": "Tuvalu", "code": "TV"},  
  {"name": "Uganda", "code": "UG"},  
  {"name": "Ukraine", "code": "UA"},  
  {"name": "United Arab Emirates", "code": "AE"},  
  {"name": "United Kingdom", "code": "GB"},  
  {"name": "United States", "code": "US"},  
  {"name": "United States Virgin Islands", "code": "VI"},  
  {"name": "Uruguay", "code": "UY"},  
  {"name": "Uzbekistan", "code": "UZ"},  
  {"name": "Vanuatu", "code": "VU"},  
  {"name": "Venezuela", "code": "VE"},  
  {"name": "Vietnam", "code": "VN"},  
  {"name": "Wallis and Futuna", "code": "WF"},  
  {"name": "Yemen", "code": "YE"},  
  {"name": "Zambia", "code": "ZM"},  
  {"name": "Zimbabwe", "code": "ZW"}  
]
```

It consists of name and country code from Alphabetically from A through Z

Output Summary

The Details of features are on the next page.

Form

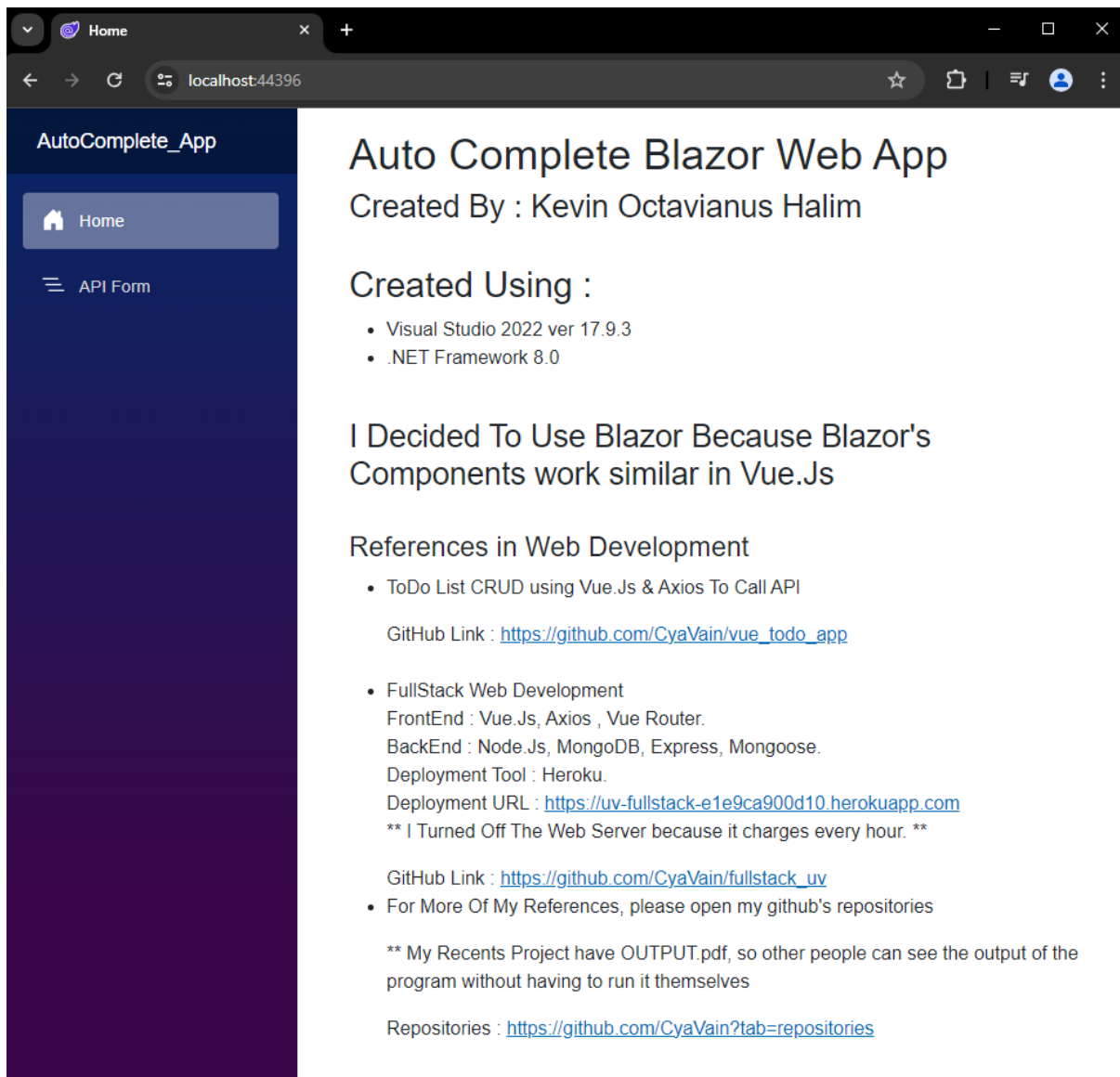
Negara	<input type="text" value="SINGAPORE"/>	https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE
Pelabuhan	<input type="text" value="JURONG"/>	https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=JURONG
Barang	<input type="text" value="10079000"/> <input type="text" value="Butiran Sorghum"/>	https://insw-dev.ilcs.co.id/n/barang?hs_code=10079000
Harga	<input type="text" value="1000000"/>	
Tarif Bea masuk	<input type="text" value="10"/> %	https://insw-dev.ilcs.co.id/n/tarif?hs_code=10079000
	<input type="text" value="100.000"/>	
Total Biaya	<input type="text" value="1.100.000"/>	

Form

Negara	<input type="text" value="INDONESIA"/>	https://insw-dev.ilcs.co.id/n/negara?ur_negara=INDONESIA
Pelabuhan	<input type="text" value="TANJUNG PRIOK"/>	https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=ID&ur_pelabuhan=TANJUNG PRIOK
Barang	<input type="text" value="98765432"/> <input type="text" value="Whole Foods Market"/>	https://insw-dev.ilcs.co.id/n/barang?hs_code=98765432
Harga	<input type="text" value="500000"/>	
Tarif Bea masuk	<input type="text" value="5"/> %	https://insw-dev.ilcs.co.id/n/tarif?hs_code=98765432
	<input type="text" value="25.000"/>	
Total Biaya	<input type="text" value="525.000"/>	

The Output Details

Home / Index Page



The API Form (The Auto Complete Function)

API

localhost:44396/api

AutoComplete_App

Home

API Form

Form

Negara

Type First 3 Letters

https://insw-dev.ilcs.co.id/n/negara?ur_negara=

Pelabuhan

Type First 3 Letters

https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=KD&ur_pelabuhan='PORTNAME'

Barang

Please Input Number Only

https://insw-dev.ilcs.co.id/n/barang?hs_code=

Harga

1.500.000

Tarif Bea masuk

0

%

https://insw-dev.ilcs.co.id/n/tarif?hs_code=

0

Total Biaya

0

The Auto Complete Demo

Negara Input

The screenshot shows a web browser at localhost:44396/api. On the left is a sidebar for 'AutoComplete_App' with 'Home' and 'API Form' links. The main area is titled 'Form' and contains several input fields with their corresponding URLs:

- Negara:** Input 'sin' with URL `https://insw-dev.ilcs.co.id/n/negara?ur_negara=`
- Pelabuhan:** Input 'Type First 3 Letters' with URL `https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=KD&ur_pelabuhan='PORTNAME'`
- Barang:** Input 'Please Input Number Only' with URL `https://insw-dev.ilcs.co.id/n/barang?hs_code=`
- Harga:** Input '1.500.000'
- Tarif Bea masuk:** Input '0' with URL `https://insw-dev.ilcs.co.id/n/tarif?hs_code=`
- Total Biaya:** Input '0'

Whenever User type for AT LEAST 3 characters (case insensitive) and press enter or unfocused the input text, the autocomplete feature will run where it will compare the user input to the country list, if the program found the match, the input text show the name of country in Uppercase.

The Result if user input “sin”

Form

Negara
`https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE`

Pelabuhan
`https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=`

The program will change the input into “SINGAPORE” since the characters input is matched, and noticed that the url below “Pelabuhan” where `kd_negara=KD` now updated to `SG` matching the code of SINGAPORE country.

Another Result

Form

Negara

https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE

Pelabuhan

https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=

Now, we try to input other country with 4 characters to demonstrate that user didn't have to input exact 3 letters.

The Result of "afgh"

Form

Negara

https://insw-dev.ilcs.co.id/n/negara?ur_negara=AFGHANISTAN

Pelabuhan

https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=AF&ur_pelabuhan=

Noticed the url below Negara and Pelabuhan input text now also updated.

If Country Not Found

Form

Negara	<input type="text" value="tazmania"/>	https://insw-dev.ilcs.co.id/n/negara?ur_negara=AFGHANISTAN
Pelabuhan	<input type="text" value="Type First 3 Letters"/>	https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=AF&ur_pelabuhan=

If the user try to input letters that aren't match in the country list, the program will return

Form

Negara	<input type="text" value="tazmania"/>	Country Not Found
Pelabuhan	<input type="text" value="Type First 3 Letters"/>	https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=KD&ur_pelabuhan='PORTNAME'

Notice the url of Pelabuhan input also update to initial state where it have default value not the value of previous input.

Pelabuhan Input

Form

Negara
https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE

Pelabuhan
https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=

Let's use SINGAPORE as the country in the input, then the Pelabuhan input will require user to input the name of sea port exist in that country.

Pelabuhan
https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=

Let's try input "jur" and the result is

Pelabuhan
https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=JURONG

What if the country isn't Singapore but user input "jur" anyway ?

Form

Negara
https://insw-dev.ilcs.co.id/n/negara?ur_negara=AFGHANISTAN

Pelabuhan
https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=AF&ur_pelabuhan=

The result would be

Form

Negara
https://insw-dev.ilcs.co.id/n/negara?ur_negara=AFGHANISTAN

Pelabuhan
SeaPort Not Found, Please Make Sure The Country And Ports Are Valid

The program will show the message, because it try to match the country and it's SeaPort name.

Barang Input

Form

Negara

https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE

Pelabuhan

https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=JURONG

Barang

https://insw-dev.ilcs.co.id/n/barang?hs_code=

Barang's input text is totally based on user's input, they able to type any numbers with any digits, but I made the limit 8 digits, so the user's input isn't going to be that long.

Form

Negara

https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE

Pelabuhan

https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=JURONG

Barang

https://insw-dev.ilcs.co.id/n/barang?hs_code=10079000

Harga

Tarif Bea masuk

%

https://insw-dev.ilcs.co.id/n/tarif?hs_code=10079000

Total Biaya

Notice the Tarif Bea Masuk is now updated as 10%

Another Result

Form

Negara	<input type="text" value="SINGAPORE"/>	https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE
Pelabuhan	<input type="text" value="JURONG"/>	https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=JURONG
Barang	<input type="text" value="02044200"/> <div>Lain-Lain</div>	https://insw-dev.ilcs.co.id/n/barang?hs_code=02044200
Harga	<input type="text" value="1.500.000"/>	
Tarif Bea masuk	<input type="text" value="7"/> %	https://insw-dev.ilcs.co.id/n/tarif?hs_code=02044200
	<input type="text" value="0"/>	
Total Biaya	<input type="text" value="0"/>	

Noticed now if the Barang's input is different the Tarif Bea Masuk is also changed.

If Code Not Found

Barang	<input type="text" value="012345"/> <div>Code Not Found</div>	https://insw-dev.ilcs.co.id/n/barang?hs_code=012345
Harga	<input type="text" value="1.500.000"/>	
Tarif Bea masuk	<input type="text" value="0"/> %	https://insw-dev.ilcs.co.id/n/tarif?hs_code=012345

The Program will show message Code Not Found and Tarif became 0 %

Harga Input

Form

Negara	<input type="text" value="SINGAPORE"/>	https://insw-dev.ilcs.co.id/n/negara?ur_negara=SINGAPORE
Pelabuhan	<input type="text" value="JURONG"/>	https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=SG&ur_pelabuhan=JURONG
Barang	<input type="text" value="10079000"/> <input type="text" value="Butiran Sorghum"/>	https://insw-dev.ilcs.co.id/n/barang?hs_code=10079000
Harga	<input type="text" value="1.500.000"/>	
Tarif Bea masuk	<input type="text" value="10"/> %	https://insw-dev.ilcs.co.id/n/tarif?hs_code=10079000
	<input type="text" value="0"/>	
Total Biaya	<input type="text" value="0"/>	

Let's Try to input Harga input as

Harga	<input type="text" value="1000000"/>
-------	--------------------------------------

The Result

Harga	<input type="text" value="1000000"/>	
Tarif Bea masuk	<input type="text" value="10"/> %	https://insw-dev.ilcs.co.id/n/tarif?hs_code=10079000
	<input type="text" value="100.000"/>	
Total Biaya	<input type="text" value="1.100.000"/>	

Another Example

Barang

https://insw-dev.ilcs.co.id/n/barang?hs_code=02044200

Harga

Tarif Bea masuk

%

https://insw-dev.ilcs.co.id/n/tarif?hs_code=02044200

Total Biaya

Notice if the code is different and valid, the Tarif Bea Masuk will be changed and also the fee is updated as well, let's try another example.

Form

Negara

https://insw-dev.ilcs.co.id/n/negara?ur_negara=INDONESIA

Pelabuhan

https://insw-dev.ilcs.co.id/n/pelabuhan?kd_negara=ID&ur_pelabuhan=TANJUNG PRIOK

Barang

https://insw-dev.ilcs.co.id/n/barang?hs_code=43210987

Harga

Tarif Bea masuk

%

https://insw-dev.ilcs.co.id/n/tarif?hs_code=43210987

Total Biaya