Get Geolocation data by IP Address App
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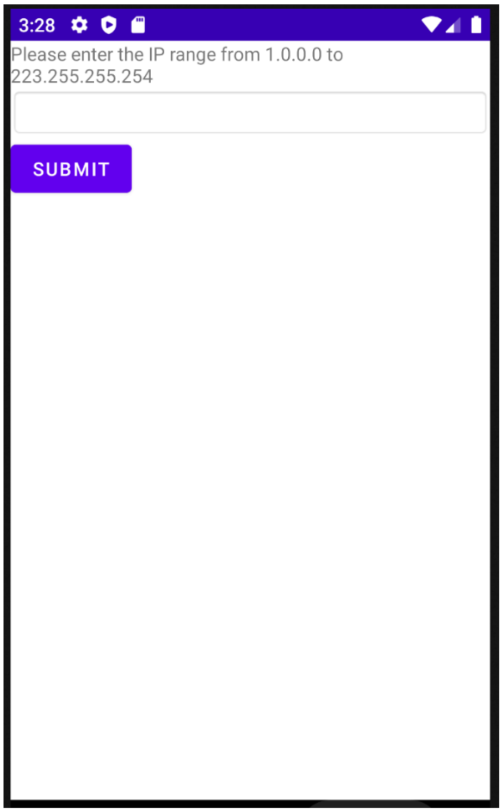
URL: [IP Information Finder App](https://protected-scrubland-77046.herokuapp.com/result?searchTerm=userInput)

Description:
This project presents an Android application that allows users to input an IP address within the range of 1.0.0.0 to 223.255.255.254 and retrieves and displays detailed information about the provided IP address.

1. Implement a Native Android Application:
The Android application project, developed in Android Studio, is named "MyIPinfo."

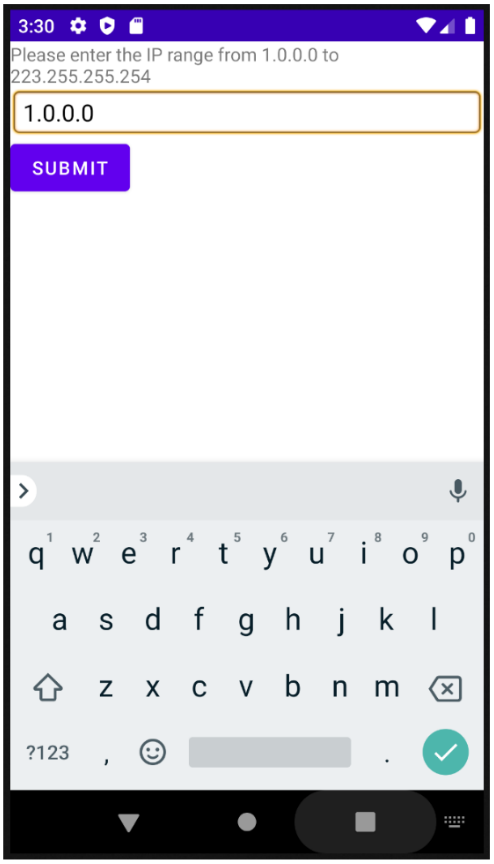
1.1 Layout:
The application's layout includes TextView, EditText, and Button components, which are organized within a LinearLayout. The "content_main.xml" file provides a detailed description of how these elements are structured.

Here's a screenshot of the layout before retrieving IP information.



Please enter the IP range from 1.0.0.0 to 223.255.255.254

1.2 User Input:
Users can input an IP address, and here is a screenshot of a user searching for the IP "1.0.0.0."



Please enter the IP range from 1.0.0.0 to 223.255.255.254

1.0.0.0

1.3 Making an HTTP Request to the Web Service:
The Android application initiates an HTTP GET request through "MyIP.java" with the following URL:

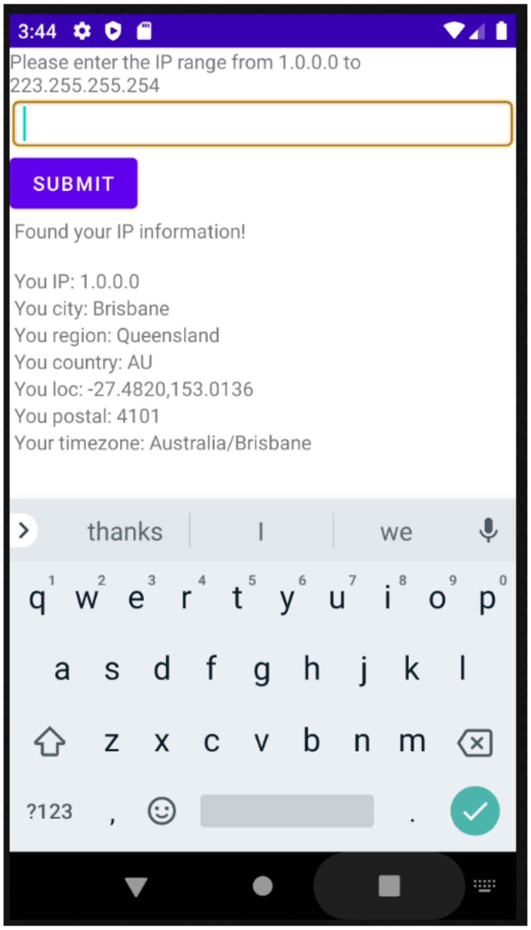
```
https://protected-scrubland-77046.herokuapp.com/result?searchTerm=" + searchTerm
```

The "searchTerm" represents the user's search term. This request is directed to the web application, which processes it, parses the returned JSON, and retrieves IP information.

1.4 Receiving and Parsing JSON Reply:
The web service responds with JSON-formatted data, an example of which is as follows:

```
{
  "ip": "1.0.0.0",
  "anycast": true,
  "city": "Brisbane",
  "region": "Queensland",
  "country": "AU",
  "loc": "-27.4820,153.0136",
  "org": "AS13335 Cloudflare, Inc.",
  "postal": "4101",
  "timezone": "Australia/Brisbane",
  "readme": "https://ipinfo.io/missingauth"
}
```

1.5 Displaying New Information:
The application displays the retrieved IP information to the user. Here is a screenshot of the screen after the IP information has been returned.

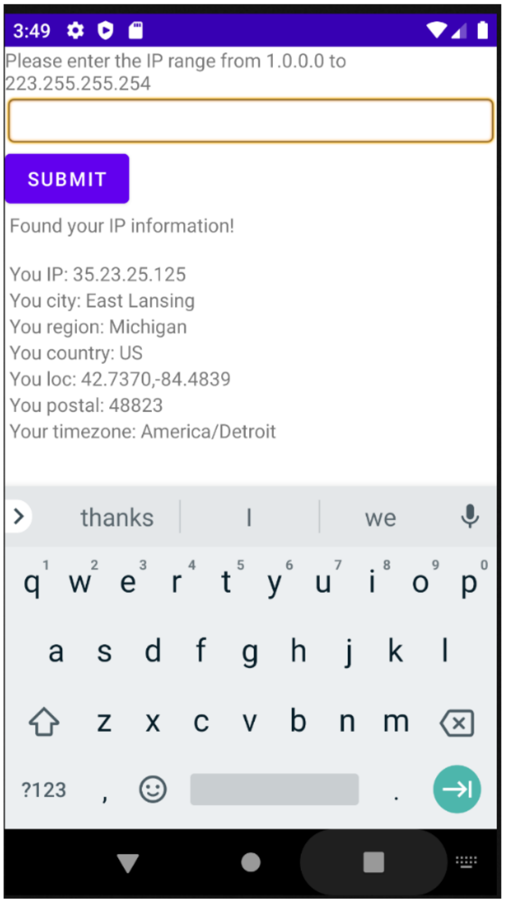


Please enter the IP range from 1.0.0.0 to
223.255.255.254

Found your IP information!

You IP: 1.0.0.0
You city: Brisbane
You region: Queensland
You country: AU
You loc: -27.4820,153.0136
You postal: 4101
Your timezone: Australia/Brisbane

1.6 Repeatability:
Users can enter additional IP addresses and submit them. For example, here is an example with the IP address "35.23.25.125."



Please enter the IP range from 1.0.0.0 to 223.255.255.254

Found your IP information!

You IP: 35.23.25.125
You city: East Lansing
You region: Michigan
You country: US
You loc: 42.7370,-84.4839
You postal: 48823
Your timezone: America/Detroit

2. Implement a Web Application Deployed on Heroku:
The web service is deployed on Heroku with the URL "https://protected-scrubland-77046.herokuapp.com." The project directory is named "MyIP."

2.1 Using an HttpServlet to Implement a Simple API:
Within the web application project, the structure adheres to the Model-View-Controller (MVC) pattern:
- Model: "IPmodel.java."
- View: "result.jsp."
- Controller: "MyIP.java."

2.2 Receiving an HTTP Request from the Native Android Application:
"MyIP.java" receives the HTTP GET request, including the "searchTerm" argument. It forwards the search string to the model for further processing.

2.3 Executing Business Logic:
"IPmodel.java" initiates an HTTP request to the following URL:
```
https://ipinfo.io/" + searchTerm + "/geo"
```

It then parses the JSON response, extracting the necessary IP information to respond to the Android application.

2.4 Replying with a JSON Formatted Response:
The response to the mobile application is in JSON format and includes IP details, such as:

```
{
  "ip": "1.0.0.0",
  "anycast": true,
  "city": "Brisbane",
  "region": "Queensland",
  "country": "AU",
  "loc": "-27.4820,153.0136",
  "org": "AS13335 Cloudflare, Inc.",
  "postal": "4101",
  "timezone": "Australia/Brisbane",
  "readme": "https://ipinfo.io/missingauth"
}
```