

# User Manual

July 23, 2024

## 1 Login page

Figure 1: Login page



On the login page, enter the username and password, and click Login. If the user exists in the DB, the login will be successful, and we will be redirected to the home page.

## 2 Home page

Figure 2: Home page

The screenshot shows a web application interface. At the top, there is a navigation bar with links for "Home", "Study Area", "Games Area", and "Logout". Below the navigation bar, a large white box contains a greeting message and a list of facts about Israel. The facts are presented in a table format:

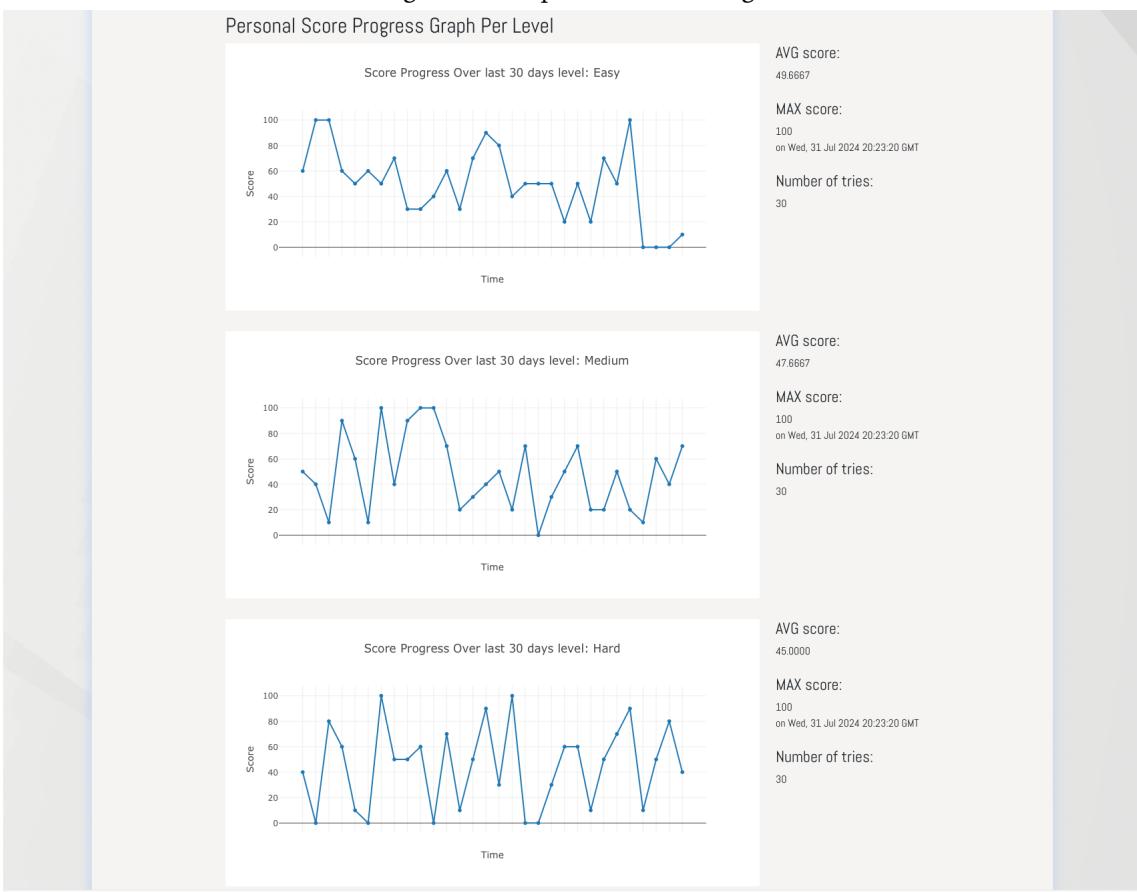
1. <b>Capital city:</b> Jerusalem is the capital city of Israel.
2. <b>Currency:</b> The currency of Israel is called "Israeli new shekel" and the symbol of the currency is: ₪.
3. <b>continent:</b> Israel is located on Asia continent.
4. <b>Number of cities:</b> Israel includes 150 cities.
5. <b>Population size in 2022:</b> In 2022, 9,038,309 people lived in Israel.

Below the facts, there is a section titled "Global First Places Per Level, Today :" which lists the top performers across three difficulty levels:

- Global First Place on Easy Level - Mary Fleming (djohnson), score: 100
- Global First Place on Medium Level - Lisa Carter (samuel33), score: 100
- Global First Place on Hard Level - Heather Cross (joneschristopher), score: 100

When a user logs in, we display several facts about the state they are in. We also show personal progress graphs and a leaderboard for game scores by difficulty level (easy, medium, hard).

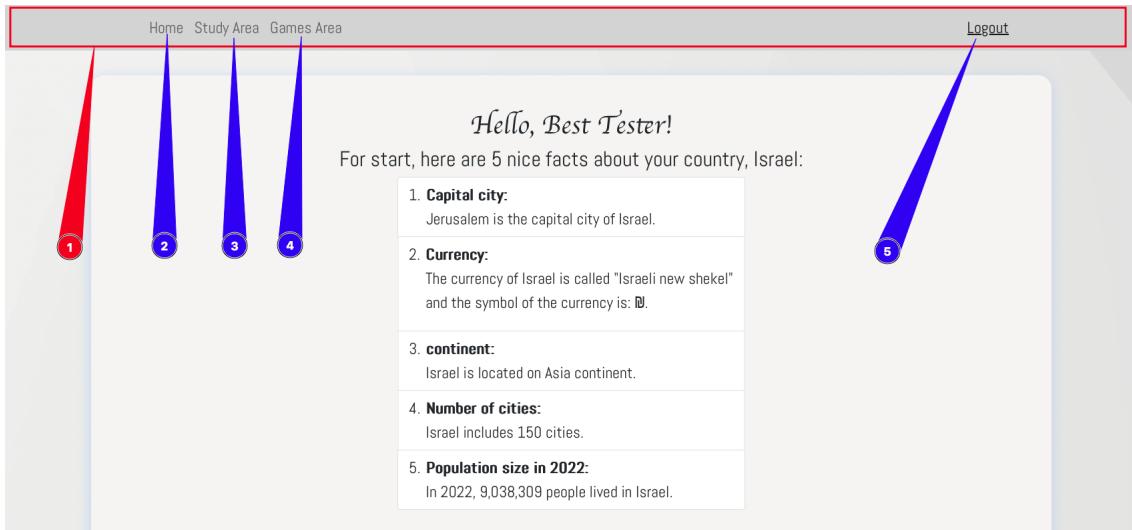
**Figure 3: Graphs on Home Page**



Users can see trends in game results by difficulty level and track their progress in learning.

### 3 NavBar

Figure 4: NavBar



1. Pointer to the navigation bar.
2. Button to take the user to the home page.
3. Button to take the user to the study area.
4. Button to take the user to the games area.
5. Button to log out and switch to another user.

## 4 Study area

Figure 5: Study area

The screenshot shows a web page titled "Study Area". At the top, there is a navigation bar with links for "Home", "Study Area", "Games Area", and "Logout". Below the navigation bar, the main content area has a title "Study Area" and a button labeled "Learn with map". A sub-instruction "Click on the country you would like to learn about" is displayed above a search bar with the placeholder "Search Country". To the right of the search bar is a vertical list of countries, each preceded by a small downward-pointing arrow indicating a dropdown menu. The countries listed are: Afghanistan, Albania, Algeria, Andorra, Angola, Antigua And Barbuda, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, and Benin.

Country	Action
Afghanistan	▼
Albania	▼
Algeria	▼
Andorra	▼
Angola	▼
Antigua And Barbuda	▼
Argentina	▼
Armenia	▼
Australia	▼
Austria	▼
Azerbaijan	▼
Bahrain	▼
Bangladesh	▼
Barbados	▼
Belarus	▼
Belgium	▼
Belize	▼
Benin	▼

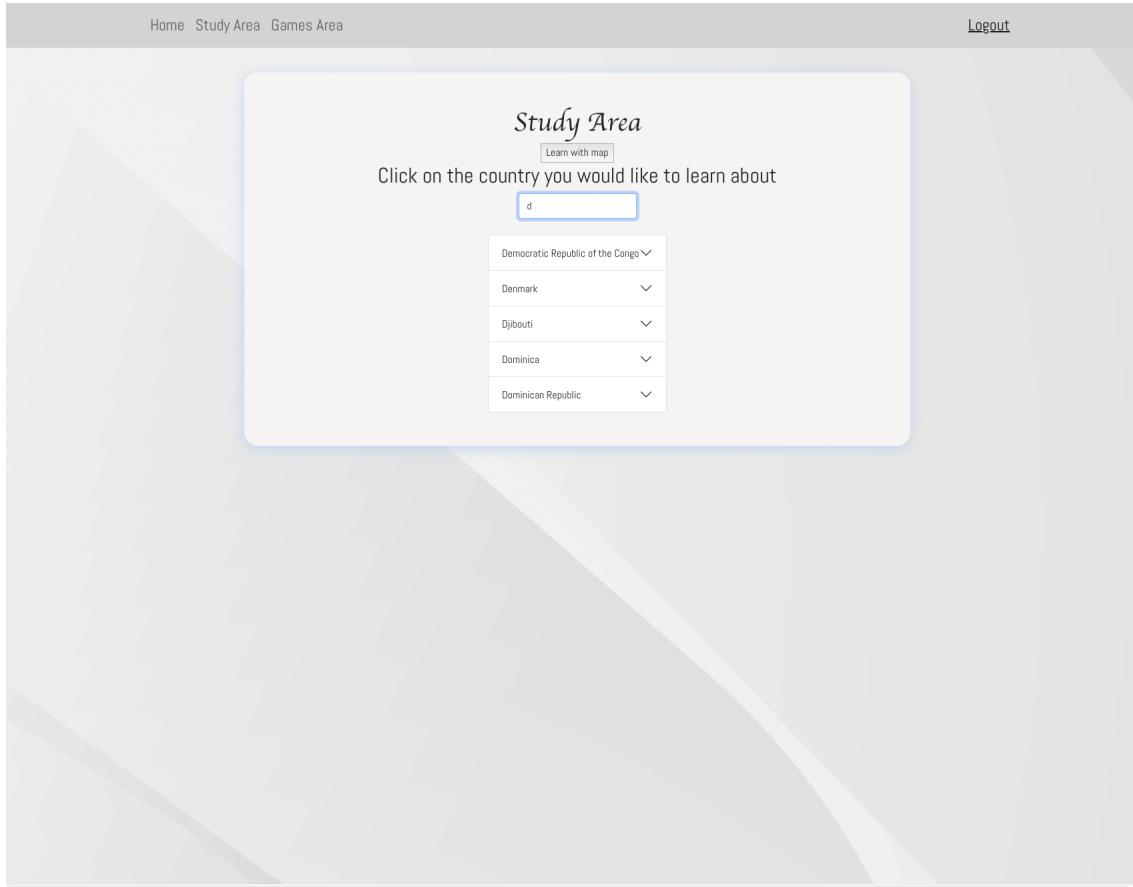
When clicking on the Study Area button in the navigation bar, users arrive at this page. There are two learning options:

1. Direct learning by searching for a specific country.
2. Learning by map, where the button Learn with map takes us to a page that displays the map of the world.

Now we take a look of each option mentioned above

## 4.1 Direct Learning by Searching for a Specific Country

Figure 6: Search Specific Country



As seen in the figure, users can search for a specific country they want to learn about by entering the country name.

The system will filter the countries accordingly, and clicking on a country will open information about it.

Figure 7: Data on selected country

The screenshot shows a web application interface titled "Study Area". At the top, there is a search bar with the placeholder "d" and a dropdown menu showing "Democratic Republic of the Congo" and "Denmark". Below this, a section titled "Country Name: Denmark" displays the following information:  
Capital Name: Copenhagen  
Population:  
Currency: Danish krone  
Area: 43094  
Continent: Europe  
Number of cities: 429  
Avg Increase Rate: 19  
A "Show Cities" button is present at the bottom of this section. Below this, there are three collapsed dropdown menus for "Djibouti", "Dominica", and "Dominican Republic". The "Logout" link is located in the top right corner.

As we can see, when clicking on a country its opens information about it.

## 4.2 Learning by Map

Figure 8: Learn with Map Button

The screenshot shows the same "Study Area" interface as Figure 7. A red arrow points from the number "(1)" to the "Learn with map" button, which is highlighted with a red box. The rest of the interface is identical to Figure 7, including the search bar, dropdown menu, and collapsed country dropdowns.

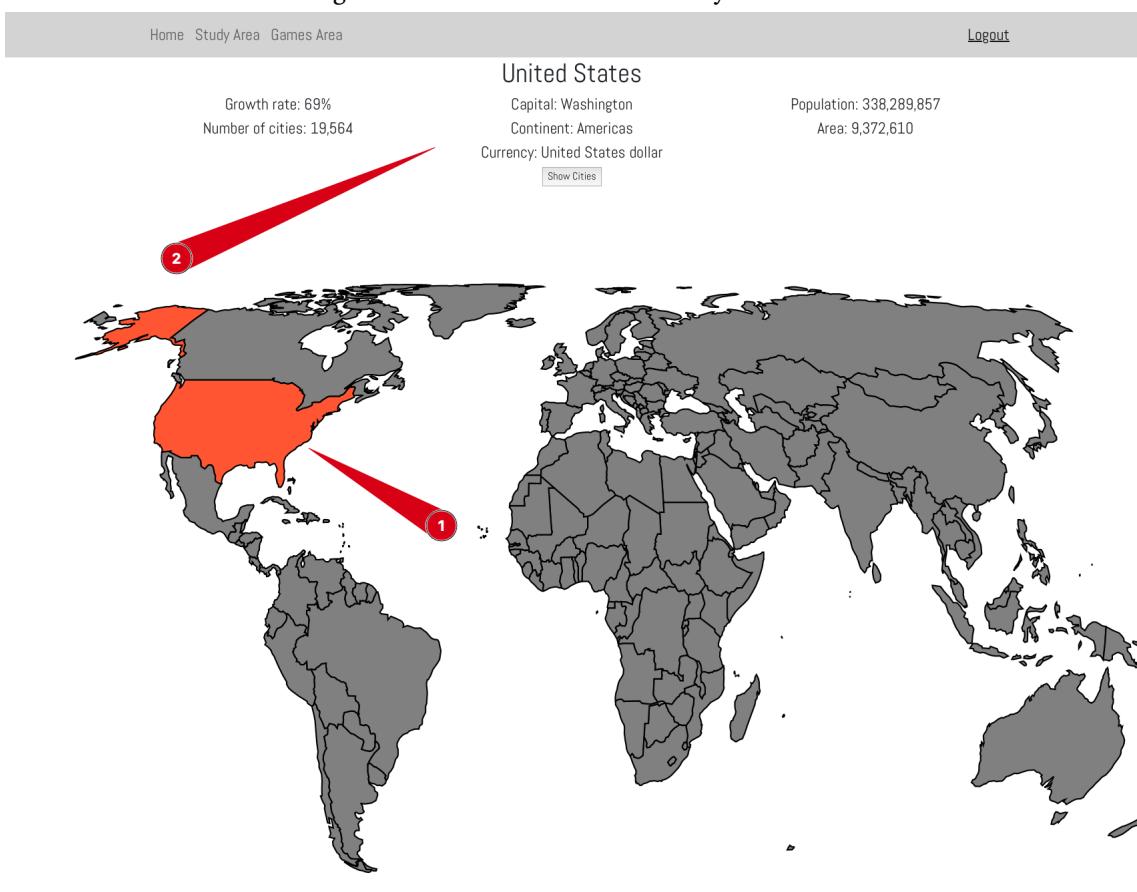
Clicking on the button marked in (1) in the figure will take us to the next page:

**Figure 9: Map page**



When hovering over any country with the mouse, it will be highlighted in red, and clicking on it will open information about that country.

Figure 10: Information on Country + Hover



When hovering over a country and clicking on it,  
the selected country will be highlighted in red  
and the information about that country will be displayed.

Figure 11: Cities in the Country



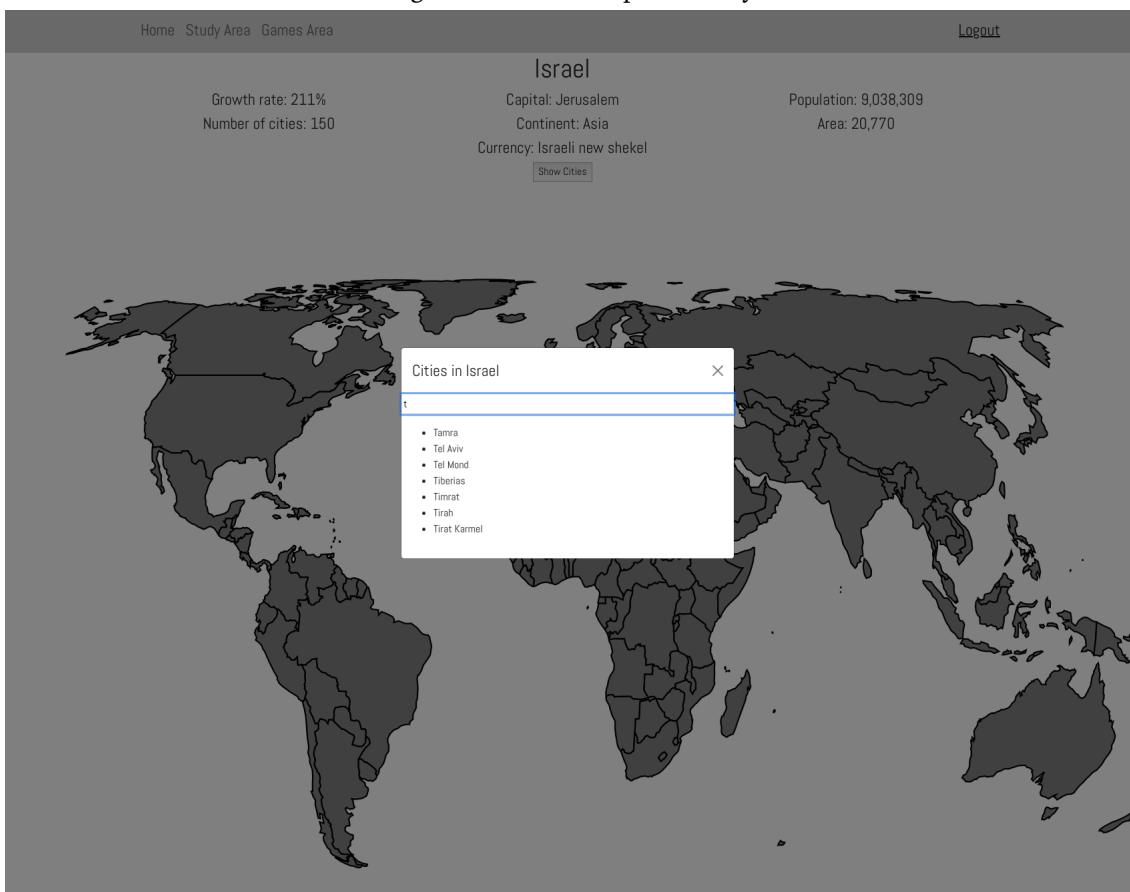
Clicking on the button marked (1) will open a list of all cities in the selected country.

Figure 12: List of Cities



For example, in the figure, we can see the list of cities in Israel.  
There is also a text box where users can search for a specific city.

Figure 13: Search Specific City



When the list of cities opens, users can search for a specific city to see if it is in that country.

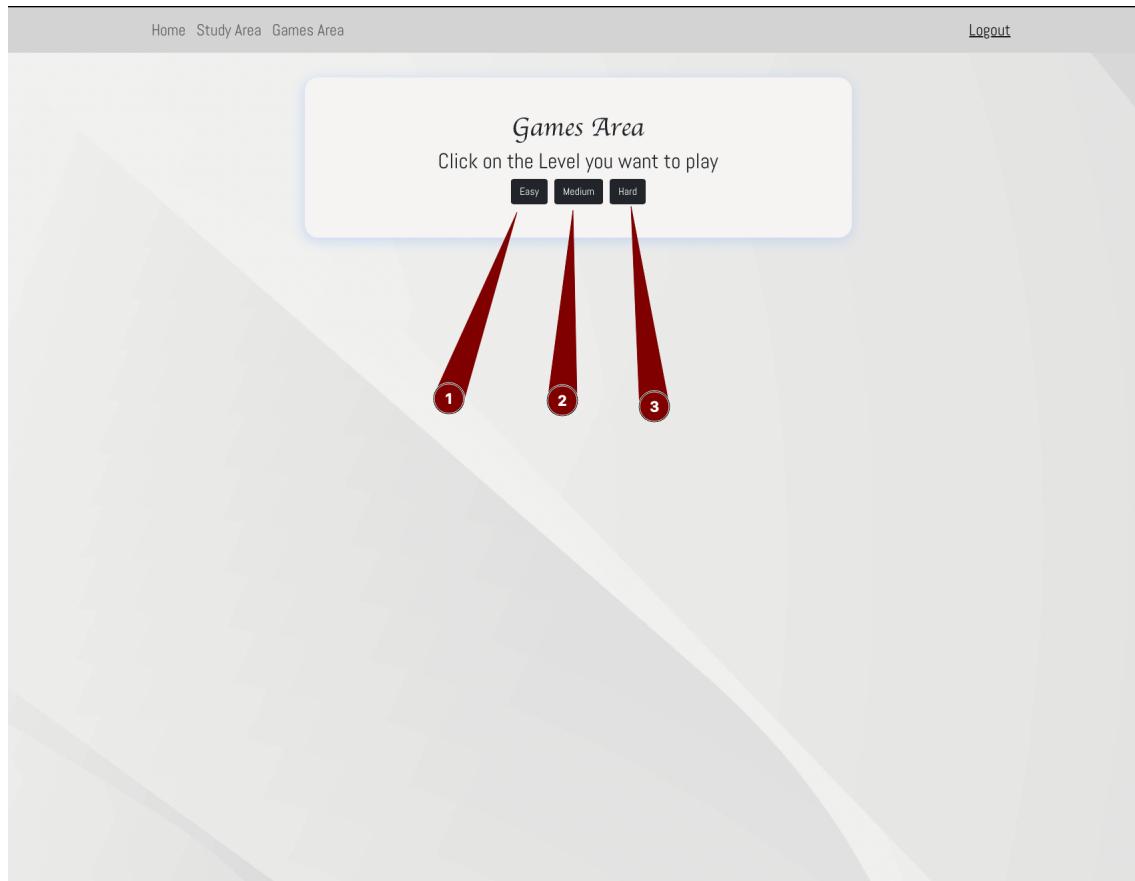
Figure 14: Missing data



Since not all countries appear in the DataSet,  
we will show a message indicating there is no information about the selected country.  
The country will be highlighted in red.

## 5 Games Area

Figure 15: Games Area



When clicking on the Games Area button in the navigation bar, users arrive to this page.  
There are three buttons:

1. Easy level questions that will test the user on a random country in the world.  
(10 questions on one specific country)
2. Medium level questions that will test the user on a random continent.  
(15 questions on any country in the selected continent)
3. Hard level questions that will test the user on the whole world.  
(20 questions on any country in any continent)

## 5.1 Easy Level

Figure 16: Start Game Button



Clicking on the button marked (1) will take the user to the easy level game page

Clicking on the button marked (2) will take the user back to the Gamed area page (figure 14)

Figure 17: Game Page

The screenshot shows a game page with a light blue header bar containing 'Home', 'Study Area', 'Games Area', and 'Logout'. Below the header is a white rectangular area representing a game board. The board contains several questions with multiple-choice options. A large blue arrow points from the question 'On which continent is Virgin Islands (US)?' to a circled number '(1)' at the end of the arrow.

What is the capital of Virgin Islands (US)?  
 Honiara  
 Pyongyang  
 Madrid  
 Charlotte Amalie

On which continent is Virgin Islands (US)?  
 Europe  
 Americas  
 Oceania  
 Asia **(1)**

How many cities are there in Virgin Islands (US)?  
 8433  
 80  
 20  
 7

Which city is not belong to Virgin Islands (US)?  
 Tulagi  
 Gobias Las  
 Sion Farm  
 Ayang-ni

Virgin Islands (US) is the \_th largest in terms of area  
 52  
 141  
 189  
 97

Virgin Islands (US) is the \_th largest in terms of population on 2022  
 160  
 30  
 55  
 187

What is the currency of Virgin Islands (US)?  
 United States dollar  
 Nicaraguan córdoba  
 Philippine peso  
 Kuwaiti dinar

Which of the following cities is not in Virgin Islands (US)?  
 Water Island  
 Northcentral  
 Massalfassar

After clicking the Start button, the user will see questions about the selected country, as shown in (1).

Figure 18: End Game

○ Asia  
How many cisites there are in Virgin Islands (US)?  
 8433  
 80  
 20  
 7

Which city is not belong to Virgin Islands (US)?  
 Tulagi  
 Gabias Las  
 Sion Farm  
 Ayang-ni

Virgin Islands (US) is the \_th largest in terms of area  
 52  
 141  
 189  
 97

Virgin Islands (US) is the \_th largest in terms of population on 2022  
 160  
 30  
 55  
 187

What is the currency of Virgin Islands (US)?  
 United States dollar  
 Nicaraguan córdoba  
 Philippine peso  
 Kuwaiti dinar

Which of the following cities is not in Virgin Islands (US)?  
 Water Island  
 Northcentral  
 Messafassar  
 Charlotte Amalie

How many times has the population increased from 1970 to 2022 in Virgin Islands (US)?  
 1.5677  
 4.0405  
 4.0269  
 1.2637

How many states there are in Virgin Islands (US)?  
 113  
 242  
 247  
 105



**Send** (1)

After completing the game, the user can click the button marked (1) to finish the game, and their score will be calculated and displayed, showing the correct answers.

Users get 10 points for each correct answer.

Figure 19: Game Results

The screenshot shows a web-based game results interface. At the top, there are navigation links: "Home", "Study Area", "Games Area", and "Logout". Below these, a message says "Your score is: 40". A green arrow labeled "1" points to this score. A red box highlights a list of questions and their answers. A green arrow labeled "2" points to the first question in the list. A blue arrow labeled "3" points to a button at the bottom left labeled "go back to game's area".

What is the capital of Virgin Islands (US)? : Charlotte Amalie  
On which continent is Virgin Islands (US)? : Americas  
How many cities are there in Virgin Islands (US)? : 20  
Which city is not belong to Virgin Islands (US)? : Sion Farm  
Virgin Islands (US) is the \_th largest in terms of area : 189  
Virgin Islands (US) is the \_th largest in terms of population on 2022 : 187  
What is the currency of Virgin Islands (US)? : United States dollar  
Which of the following cities is not in Virgin Islands (US)? : Massalfassar  
How many times has the population increased from 1970 to 2022 in Virgin Islands (US)? : 1.5677  
How many states are there in Virgin Islands (US)? : 242

go back to game's area

Clicking the Send button will take the user to a page showing their score and the correct answers for the questions.

- (1) points to the final score of the test.
- (2) points to the correct answers for the questions.
- (3) points to the button that will take the user back to the game area page.

## 5.2 Medium Level

Figure 20: Medium Level Game

The screenshot shows a web-based quiz interface. At the top, there's a navigation bar with links for 'Home', 'Study Area', 'Games Area', and 'Logout'. The main content area contains several questions about African countries:

- What is the capital of Mali?
  - Bamako
  - Windhoek
  - Antananarivo
  - Maputo
- How many cities are there in Guinea-Bissau?
  - 15
  - 47
  - 38
  - 48
- Which city does not belong to Eritrea?
  - Butha-Buthe
  - Oshakati
  - Barentu
  - Marolambo
- Ghana is the \_th largest country in Africa (in terms of area):
  - 121
  - 249
  - 329
  - 281
- Namibia is the \_th largest country in Africa (in terms of population in 2022):
  - 85
  - 299
  - 131
  - 330
- What is the currency of Ghana?
  - Armenian dram
  - Ghanaian cedi
  - Brazilian real
  - Panamanian balboa
- Which of the following cities are not located in Lesotho?
  - Qacha's Nek
  - Butha-Buthe
  - San Juan Tehuitztitlán
  - Mokhotlong
- How many times did the population of Lesotho increase from 1970 to 2022?
  - 4.8096
  - 2.0784
  - 2.2529

A large blue arrow points diagonally across the screen, ending with a circle containing the number '1'.

Here we can see questions about countries in the continent of Africa. The scoring and answers pages are identical to the easy level (Figure 18), except that there are 15 questions in the medium level game, with 10 points for the first 10 questions and 5 points for the last 5 questions.

## 5.3 Hard Level

Figure 21: Hard Level Game

The screenshot shows a web-based game interface with a light gray header bar. On the left is a vertical decorative graphic of a map. The main content area has a white background with rounded corners. At the top right of the content area is a "Logout" link. The content consists of ten questions, each with a question text and a list of four options in a dropdown menu:

- What is the currency of Andorra?
  - United States dollar
  - Eritrean nakfa
  - Euro
  - Libyan dinar
- What is the currency of Czech Republic?
  - Liberian dollar
  - Georgian lari
  - Czech koruna
  - Rwandan franc
- What is the currency of Lithuania?
  - Vanuatu vatu
  - Mauritanian ouguiya
  - Kazakhstani tenge
  - Euro
- What is the capital of Andorra?
  - Saint John's
  - Bucharest
  - Havana
  - Guatemala City
- What is the capital of Czech Republic?
  - Bujumbura
  - Ashgabat
  - Banjul
  - Helsinki
- What is the capital of Lithuania?
  - Amsterdam
  - Palikir
  - Havana
  - Dublin
- On which continent is Andorra?
  - Europe
  - Americas
  - Oceania
  - Asia
- On which continent is Czech Republic?
  - Europe
  - Africa
  - Oceania

The hard level game has 20 questions, with no restriction on the continent or country.

Correct answers earn 5 points each, and the scoring and answers pages

are the same as in the easy level (Figure 18).

## 6 Running the Application

To run the application, follow these steps:

1. Ensure the MySQL server is running in the background.
2. Open a terminal in the server-side code directory and run:  
`python3 main.py`  
Alternatively, open the code in a Python-supported IDE and run it.  
**Note:** we are using .env file in our project, please make sure that you have .env file in the source code directory with the correct information.
3. Run the client side - Open the terminal in the client-side directory and run:
  1. `npm install`
  2. `npm start`Run these commands one after the other.
4. Once the application is running and the server is up, log in with the following credentials:

Username - bestester

Password - 123456