

# The Amazing Atlas: Africa Edition

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## Introduction:

*The Amazing Atlas: Africa Edition* is the program our group chose to create. The purpose of this program serves to academically assist the general public with geography skills with this version focusing on the African continent. This user-friendly, interactive application highlights various features that are designed to promote educational knowledge and concepts which relate to the different regions and countries within Africa: fun-facts about each of the 54 countries, capitals, etc. Within the application, the user is able to navigate from an introduction screen to the main menu which consists of three modes (study, quiz, and draw) as well as the instructions that discuss the various parts that make up the program. The application is focused around an interactive map of Africa where the user is able to click on the countries within the graphical map to open up specific information. In study mode, the user is prompted to answer questions regarding country names, capitals, and other miscellaneous information – general trivia. Ultimately, this allows the user to learn more about the African continent in an engaging manner.

More specifically, the user will have the opportunity to get fast facts and more about the culture and environment each country consists of through a guessing system. The program will also contain a feature in which users will be able to recreate their own maps of Africa using a drawing tool.

As students in the United States, our education, specifically in geography/history has been North America, Asia, and Europe-focused; one of the least explored continents being Africa. Our group hopes to battle this challenge by creating this map which will expose more of the population to understanding Africa geologically, socially, and environmentally.

As this is a self-directed tool, there aren't certain rules a user has to follow to operate the program. Instead there is an extensive array of features the user has the ability to explore all for aiding growth of knowledge relating to African-geography.

## Instructions:

Once on the title page, the user will be transported to the menu, which will display their high score (if they have one, zero otherwise), and options to start Study Mode, Quiz Mode, or Drawing Mode. Drawing Mode allows the user to draw their own maps and save them. Study Mode allows the user to interact with a map of Africa, and select countries to learn more about them. Once clicked on, a pop-up window will appear and display images and information on the clicked country in a slideshow-esque manner. In Quiz Mode, the user must answer questions (multiple choice, short answer, select correct country, ... etc.) about the countries of Africa. Based on how many questions the user is able to answer correctly the user receives their score, which if high enough will become their new high score. All three Modes will be able to navigate back to Menu through a button in one corner of the screen.

### **Features List (THE ONLY SECTION THAT CANNOT CHANGE LATER):**

#### **Must-have Features:**

[These are features that we agree you will *definitely* have by the project due date. A good final project would have all of these completed. At least 5 are required. Each feature should be fully described (at least a few full sentences for each)]

- A graphical map of Africa that displays each of the countries within the continent of. This will be the introduction page the user sees before they choose which mode they want to go in (study or quiz).
- A guessing game where users can click on different countries and see if they can guess the name of the country. If they guess it correctly, they'll unlock information about that country. The game feature will time how fast a user can name all African countries and give a score.
- The study mode will allow the user to click on any country and read information about that country, such as the capital, important landmarks, historical events, ... etc..
- A welcome screen that gives general instructions to the user, a start playing button, and the menu option to see high scores and credits.
- Tabs that when clicked on, direct the user to learn more information (statistics, like most populated country, poorest country, ... etc.) about the different regions and countries within Africa, and switch between modes (study and quiz).

#### **Want-to-have Features:**

[These are features that you would like to have by the project due date, but you're unsure whether you'll hit all of them. A good final project would have perhaps half of these completed. At least 5 are required. Again, fully describe each.]

- A zoom in/out feature to zoom into parts of Africa using the mouse scroll and/or the +/- buttons. The zoom feature will allow the user to see the countries better,

considering the differences in size, and small symbols on the countries that symbolize the capital (for example, a star to represent the city).

- Tutorial/Walkthrough of features
- A search option to search for the desired country
- Music/soundtracks and sounds for different actions/screens that can be toggled and altered in the menu
- Except for the most important information (such as the capital of the country), somehow get random data and/or pictures of the place from an outside source (as suggested, “having a local database file that sends a request to a geographic facts API to get data about the place”) or files
- Presenting accuracy of drawn maps in “draw mode” to the actual map of Africa

### **Stretch Features:**

[These are features that we agree a *fully complete version of this program would have, but that you probably will not have time to implement*. A good final project does not necessarily need to have any of these completed at all. At least 3 are required. Again, fully describe each.

- Repeating the “Must-Have Features” for each of the seven continents in the world and allowing the user to switch to each continent.
- A 3D simulation of a virtual journey through the most popular places in Africa (Cairo, Egypt or Cape Town, South Africa) and other continents
- Have the zoom in feature allow users to zoom into capital cities and even click them to see images/facts specific to the capital cities, rather than only the country.

### **Class List:**

- Main // main method !
- Map //Keeping track of countries from file/databases
- Introduction // home screen with game name
- Instruction //Instructions A.K.A. Rules A.K.A. you know what this is stop reading
- Quiz Mode // The Quiz Mode - up to further discussion
- Study Mode
- Menu // navigating to different aspects of the program - Drawing Mode, High Score (label), Study mode, Quiz Mode, Map of Africa
- DrawingSurface // drawing surface !
- Drawing Mode //drawing tool for map drawing
- ScreenSwitcher //interface
- Screen //abstract

Main uses DrawingSurface

DrawingSurface HAS-A Introduction and Menu

Menu HAS-A DrawingMode, Study Mode, and Quiz Mode

Quiz and Study Mode IS-A Map

DrawingSurface implements ScreenSwitcher

Quiz Mode, Study Mode, and Draw Mode extends Screen

### **Credits:**

[Gives credit for project components. This includes both internal credit (your group members) and external credit (other people, websites, libraries). To do this:

- List the group members and describe how each member contributed to the completion of the final program. This could be classes written, art assets created, leadership/organizational skills exercises, or other tasks. Initially, this is *how you plan on splitting the work*.
- Give credit to all outside resources used. This includes downloaded images or sounds, external java libraries, parent/tutor/student coding help, etc.]

### **Internal Credit:**

Diya: Contributing to coding part by working on the Introduction, Instructions, and Quiz Mode classes. Diya also contributed to the initial UML diagrams and organized the structure and hierarchy of the classes. Wrote some javadocs.

Onuva: Contributed to the coding part by working on the StudyMode, Map, and Main classes. Additionally, has worked on the animations logic and code (buttons and mouse for clicks).

Onuva worked on finalizing the UML diagrams as well as organizing the structure and hierarchy of the classes. Wrote some javadocs.

Aarushi: Contributed to the coding part by working on DrawingSurface, ScreenSwitcher, Screen, Menu, and DrawingMode classes. Additionally created the skeleton class headings, javadocs, and edited/finalized the ReadMe. Created Intro screen image.

### **External Credit:**

Countries Fun Facts: <https://www.factsinstitute.com/countries>

Country Map: <https://www.mapsofworld.com/>

Country Flags: <https://www.countryflags.com/>

Color Wheel: <https://www.sessions.edu/color-calculator/>

House: <https://icons8.com/icons/set/house>

All Members: Added ideas and edited fields/methods to individual classes.