Practical Python Milestone Project

PLANNING DOCUMENT

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"Practical Python Milestone Project"

This is the milestone project that I have created for the "Practical Python" module, which is part of "Full Stack Web Development Course" offered by Code Institute via Learning People.

Practical Python Milestone Project Brief

I have listed below what **I think** the main points are for the criteria of this milestone project.

- Build a **web application** that asks the player to guess the **answer** to **picture** or **text-based** riddle or create your **own project** based on a similar to project brief.
- The player is presented with **image** or **text-based** riddle and answers into a **text-area** using a **Form.**
- If player guesses correctly then is forwarded the next riddle.
- If player guesses incorrectly their guess is **stored** and **printed below** the riddle and the **text-area** is **cleared** so they can **guess again**.
- **Multiple** players can play an instance of the game at the **same time**, each has their **own browser**.
- Players are identified by a **unique username.**
- Create a **leader board** that **rank**s top scores for **all** / **recent** players.

Practical Python Milestone Project Guidelines

I have listed below what I think the main points are for the guidelines of the milestone project.

- Project logic **must be created** using the following
  - (Css3,Html5,Python3).
  - (Flask) to structure the projects back-end.
  - (Git & GitHub) for version control (new functionality should have separate commit).
  - (Heroku) to deploy final version of code.

- Project logic **may use** the following
  - (Bootstrap) to enrich the look and feel of the project.
  - (JavaScript) to enrich the look and feel of the project.

- **Strive** to use **semantic Html5 elements** to structure your Html code better.
- Taking a **T**est-Driven **D**evelopment (TDD) approach to developing the game.
- Develop & Run **Automated** tests to ensure websites functionality works correctly
- Make sure web application is '**Responsive Design**' and automatically adjusts based on device size.

- Create a '**Credits**' section in the **Readme.md** file to include the following,
  - **Content** i.e. text copied from xxx
  - **Media** Where they were obtained from.
  - **Acknowledgements**

- Create a '**Deployment**' section in the **Readme.md** file to include the following,
  - How to **deploy project** to hosting platform (Heroku).
  - Detail of differences between Deployed & Development Versions of code.
    - Different values for environment variables.
    - Different configuration files.
    - Separate Git Branch.

- Create a '**Testing**' section in **Readme.md** File to include the following,
  - **Summarizing** your approach to testing
  - Provide **pseudocode** written to develop your TDD tests
  - If **manual tests** are run to ensure websites functionality works correctly.
  - If tests are **not working** as expected document
    - Your expected output should have been.
    - Reasons why the test(s) could have been failing.

- Create a '**UX**' section in Readme.md File to include the following,
  - **Who** this web application is for.
  - **What** it is that want to achieve.
  - How Web application is the **best solution** to achieve what's required.
  - **Functionality** of the project**.**
  - **Features** of the project**.**
  - **Technologies** used in project**.**
  - If code was based on other code (Explain what was kept and how it was adapted to fit project needs).

Practical Python Milestone Project Checklist

I have listed below the main sections from the Checklist of the milestone project which should be incorporated into the project and checked before final submission using the Checklist.

- **Code Quality**
    - Appropriate use of Python
    - Appropriate use of the template language
    - Appropriate use of JavaScript
    - Appropriate use of JavaScript APIs (if used)
    - Appropriate use of HTML5
    - Appropriate use of CSS3
    - Appropriate use of Code

- **Software Development Practices**
    - Deployment Implementation
    - Deployment Write-up
    - Appropriate use of JavaScript
    - Directory Structure and File Naming
    - Version Control
    - Testing Implementation
    - Testing write-up
    - Readme file
    - Comments
    - Deployment Implementation
    - Deployment write-up

- **Usability and Real-world application**
    - Project Purpose
    - UX Design
    - Suitability for purpose
    - Navigation
    - Ease of Use
    - Information Architecture
    - Defensive Design

- **Layout and Visual Impact**
    - Responsive Design
    - Image Presentation
    - Colour Scheme and Typography

What I would like to accomplish

The first decision was the project brief ,I decided to create my own project a Geography quiz game based on a similar project brief to the riddle game, I did some google research and collected a series of 6 categories to choose from each containing a series of text based multiple choice questions which I have listed the categories below

"Geography 1" (18 Questions)
"Geography 2" (18 Questions)
"Least Populous Of The Three?" (27 Questions)
"Odd One Out Capitals?" (18 questions)
"Who Owns These Islands?" (20 Questions)
"Which City has the highest elevation above sea level?" (20 Questions)

Not sure how many questions should be in each section as yet ?

The all the questions where taken for the following website https://www.sporcle.com/type/multiplechoice/geography

Images Used

The images used under the https://creativecommons.org/licenses/by-sa/2.0/ license.
Background for Top of website https://cdn.pixabay.com/photo/2015/01/15/16/17/hands-600497_960_720.jpg
Six Images used for 'Quiz Selection Section' of website by rawpixel.com
All Images in categories by https://commons.wikimedia.org/wiki/Main_Page

Bootstrap Theme

I think I will build a one-page website and use the following https://startbootstrap.com/template-categories/one-page/ free theme

My Question Categories

Listed below are the 6 categories showing (questions, multiple choice answers and the correct answer to the question).

Geography 1 ?

Can you choose the correct answer to these questions from each Geography subcategory?

#	Question	Option 1	Option 2	Option 3	Option 4	Answer
01	Which country is known as the Emerald Isle	United Kingdom	New Zealand	Ireland	Denmark	3
02	Which of these American cities has the largest population (2015 estimate)	Phoenix	San Francisco	Denver	Dallas	1
03	Which of these countries has provinces instead of states	Mexico	Nepal	India	Austria	2
04	Which country has the highest population density of any country in the world	Bangladesh	Singapore	Vatican City	Monaco	4
05	What is the most commonly spoken language in the world	Arabic	Spanish	English	Mandarin	4
06	Which South Africa city is recognised as the legislative capital	Pretoria	Bloemfontein	Johannesburg	Cape Town	4
07	Which continent has the most countries with 54	Asia	North America	Africa	Europe	3
08	Which colour is not present on the Brazilian Flag	Blue	White	Black	Green	3
09	Which is the longest river in Europe at 2,300 Miles	Volga	Rhine	Ural	Danube	1
10	Which Country gained independence from France in 1962	Sudan	Algeria	Kenya	Morocco	2
11	Which Asian Country has Bishkek as its capital	Kazakhstan	North Korea	Kyrgyzstan	Myanmar	3
12	Which of these countries does not contain part of the Andes Mountains	Bolivia	Columbia	Paraguay	Ecuador	3
13	What is the only central American country that officially speaks English	Guatemala	Panama	Belize	Honduras	2
14	What is the smallest country of Oceania in size	Vanuatu	Marshall Islands	Kiribati	Nauru	4
15	Which of these countries does not border Germany	Czechia	Switzerland	Hungary	Belgium	3
16	Which constituent country in the UK is not included in Great Britain	Northern Ireland	Scotland	Wales	England	1
17	What is the largest Canadian island	Newfoundland	Baffin Island	Victoria Island	Ellesmere Island	2
18	Which of these is a name of a desert	Mekong	Baikal	Sonoran	Makalu	2

Geography 2 ?

Can you choose the correct answer to these questions from each Geography subcategory?

#	Question	Option 1	Option 2	Option 3	Option 4	Answer
01	What is the largest country in the world (by area)?	United States	Russia	Canada	China	2
02	Which city's famous nickname is the 'Pearl of the Orient'?	Singapore	Taipei	Kyoto	Hong Kong	4
03	Which of the following is NOT one of the 'four corners' states?	Arizona	Utah	New Mexico	Nevada	4
04	Which of the following countries does NOT have a population exceeding 200 million?	Pakistan	Brazil	Nigeria	Indonesia	3
05	To the nearest thousand miles, what is the circumference of the world at the equator?	25,000 mi	150,000 mi	10,000 mi	100,000 mi	1
06	Muscat is the capital of which country?	Bahrain	Yemen	Jordan	Oman	4
07	Which is the world's smallest continent (by area)?	South America	Europe	Antarctica	Oceania	4
08	The flag of which country is the only non-rectangular national flag?	Bhutan	Vatican City	Nepal	Switzerland	3
09	Which of the following countries is NOT a member state of the European Union?	Norway	Sweden	Finland	Denmark	1
10	Which is NOT a capital of South Africa?	Cape Town	Bloemfontein	Johannesburg	Pretoria	3
11	How many islands is Japan made up of?	12,852	6,852	852	3,852	2
12	The Galápagos Islands form part of which South American country?	Brazil	Ecuador	Peru	Chile	2
13	Which island is the easternmost member of the Antilles?	St. Vincent	Barbados	Grenada	Trinidad	2
14	Which country of Oceania is the smallest independent republic in the world (by area)?	Nauru	Kiribati	Palau	Micronesia	1
15	Which of these countries does NOT border Russia?	Kazakhstan	North Korea	Poland	Armenia	3
16	Which Scottish lake contains more water than all of the lakes and rivers of England and Wales combined?	Loch Morar	Loch Ness	Loch Tay	Loch Lomond	2
17	What percentage of Canadians are estimated to live within 100 miles of the US border?	10%	90%	50%	75%	4
18	What is the longest mountain range in the world?	Himalayas	Rockies	Transantarctics	Andes	4

Least Populous Of The Three ?

Can you choose the **least populous neighbour** of countries with exactly three land bordering countries?

#	Question		Option 1	Option 2	Option 3	Answer
01	Togo neighbours	11.04M - 20.11M - 27.50M	Ghana	Benin	Burkina Faso	2
02	Ghana neighbours	7.97M - 20.11M - 24.18M	Togo	Burkina Faso	Cote d'Ivoire	1
03	Eritrea neighbours	0.87M - 37.35M - 105.35M	Ethiopia	Sudan	Djibouti	3
04	Burundi neighbours	11.90M - 53.95M - 83.30M	Rwanda	Dem. Rep. of the Congo	Tanzania	1
05	Palestine neighbours	8.30M - 10.25M - 97.04M	Egypt	Israel	Jordan	2
06	Liberia neighbours	6.16M - 12.41M - 24.18M	Cote d'Ivoire	Guinea	Sierra Leone	3
07	Paraguay neighbours	11.14M - 44.29M - 207.35M	Bolivia	Brazil	Argentina	1
08	Malaysia neighbours	0.44M - 68.41M - 260.58M	Brunei	Thailand	Indonesia	1
09	Vietnam neighbours	7.13M - 16.20M - 1,379.30M	Cambodia	Laos	China	2
10	Venezuela neighbours	0.74M - 47.70M - 207.35M	Brazil	Colombia	Guyana	3
11	Norway neighbours	5.52M - 9.96M - 142.26M	Russia	Sweden	Finland	3
12	Oman neighbours	6.07M - 28.04M - 28.57M	Yemen	Saudi Arabia	United Arab Emirates	3
13	Finland neighbours	5.32M - 9.96M - 142.26M	Sweden	Norway	Russia	2
14	Somalia neighbours	0.87M - 47.62M - 105.35M	Ethiopia	Kenya	Djibouti	3
15	Gabon neighbours	0.78M - 4.95M - 24.99M	Republic of Congo	Equatorial Guinea	Cameroon	2
16	Mexico neighbours	0.36M - 15.46M - 326.63M	Belize	Guatemala	United States	1
17	Chile neighbours	11.14M - 31.04M - 44.29M	Argentina	Bolivia	Peru	2
18	Luxembourg neighbours	11.49M - 67.11M - 80.59M	France	Belgium	Germany	2
19	Malawi neighbours	15.97M - 26.57M - 53.95M	Zambia	Mozambique	Tanzania	1
20	Cambodia neighbours	7.13M - 68.41M - 96.16M	Vietnam	Laos	Thailand	2
21	Guyana neighbours	0.59M - 31.30M - 207.35M	Venezuela	Suriname	Brazil	2
22	North Korea neighbours	51.18M - 142.26M - 1,379.30M	South Korea	China	Russia	1
23	Djibouti neighbours	5.92M - 11.03M - 105.35M	Ethiopia	Eritrea	Somalia	2
24	Suriname neighbours	0.74M - 67.11M - 207.35M	Guyana	Brazil	France	1
25	Indonesia neighbours	1.29M - 6.91M - 31.38M	Malaysia	Timor-Leste	Papua New Guinea	2
26	Honduras neighbours	6.03M - 6.17M - 15.46M	Nicaragua	El Salvador	Guatemala	1
27	Bosnia & Herzegovina neighbours	0.64M - 4.29M - 7.11M	Montenegro	Serbia	Croatia	1

Who Owns These Islands ?

Can you choose which **country lays claim** to each of these islands?

#	Question	Option 1	Option 2	Option 3	Option 4	Answer
01	Guam	Fiji	Australia	United States	Japan	3
02	Easter Island	Panama	Peru	Chile	Brazil	3
03	Tahiti	New Zealand	France	Canada	United States	2
04	Christmas Island	Australia	Indonesia	New Zealand	Malaysia	1
05	Crete	Turkey	Ukraine	Croatia	Greece	4
06	Aruba	Netherlands	Venezuela	Spain	Mexico	1
07	Galápagos Islands	Argentina	Peru	Ecuador	Chile	3
08	Zanzibar	Kenya	Egypt	Sudan	Tanzania	4
09	Nicobar Islands	Sri Lanka	India	Thailand	Malaysia	2
10	Socotra	Somalia	Eritrea	Oman	Yemen	4
11	Cape Breton Island	Russia	Denmark	United States	Canada	4
12	Bioko	Nigeria	Equatorial Guinea	South Africa	Angola	2
13	Faroe Islands	United Kingdom	Denmark	Netherlands	Norway	2
14	Qeshm	Iran	Iraq	Pakistan	India	1
15	Hainan	China	Japan	Indonesia	Philippines	1
16	Niue	France	Germany	New Zealand	Australia	3
17	Java	Thailand	Malaysia	Brunei	Indonesia	4
18	Azores	Italy	Spain	Portugal	France	3
19	Canary Islands	Mexico	Spain	Morocco	France	2
20	Sicily	France	Greece	Italy	Spain	3

Odd One Out Capitals ?

Can you choose the capital **city** that is **NOT** on the given continent?

#	Question	Option 1	Option 2	Option 3	Option 4	Answer	Continent
01	North America	Santo Domingo	Santiago	Roseau	San Jose	2	South America
02	Oceania	Port Vila	Honiara	Funafuti	Manila	4	Asia
03	Asia	Astana	Asmara	Bangkok	Bishkek	2	African
04	Oceania	Port Moresby	Maputo	Majuro	Canberra	2	African
05	South America	Luanda	Paramaribo	Asuncion	Montevideo	1	African
06	Europe	Vientiane	Valletta	Vilnius	Vaduz	1	Asia
07	Oceania	Suva	Palikir	Wellington	Pristina	4	Europe
08	Africa	Ouagadougou	Yerevan	Windhoek	Juba	2	Asia
09	Africa	Abuja	Praia	Accra	Abu Dhabi	4	Asia
10	South America	Caracas	Buenos Aires	Tegucigalpa	Bogota	3	North America
11	North America	Managua	Bissau	Nassau	Kingstown	2	Africa
12	Europe	Tripoli	Ljubljana	Bratislava	Minsk	1	Africa
13	Africa	Conakry	Khartoum	Dhaka	Dakar	3	Asia
14	North America	Kingston	Port of Spain	Kabul	Belmopan	3	Asia
15	Asia	Pyongyang	Tashkent	Mogadishu	Beirut	3	Africa
16	South America	Lomé	Georgetown	Brasilia	Quito	1	Africa
17	Asia	Suva	Sri Jayawardenepura Kotte	Dili	Bandar Seri Begawan	1	Oceania
18	Europe	Dublin	Lisbon	London	Dodoma	4	Africa

Which City has the highest elevation above sea level ?

Can you choose which **city** has the **highest elevation** above sea level?

#	Question	Option 1	Option 2	Option 3	Answer
01	140 m (460 ft)	Manchester	Birmingham	London	2
02	520 m (1,710 ft)	Oslo	Munich	Amsterdam	2
03	652 m (2,139 ft)	Pristina	Chisinau	Vilnius	1
04	667 m (2,188 ft)	Madrid	Seville	Lisbon	1
05	770 m (2,530 ft)	Beirut	Tbilisi	Baku	2
06	920 m (3,020 ft)	Vientiane	Bengaluru	Sri Jayawardenepura Kotte	2
07	990 m (3,250 ft)	Panama City	Tegucigalpa	Paramaribo	2
08	990 m (3,250 ft)	Jakarta	Baghdad	Yerevan	3
09	1,079 m (3,540 ft)	Brasília	Rio de Janeiro	São Paulo	2
10	1,100 m (3,600 ft)	Amman	Kuwait City	Doha	1
11	1,350 m (4,429 ft)	Pyongyang	Moscow	Ulaanbaatar	3
12	1,400 m (4,600 ft)	Dhaka	Tirana	Kathmandu	3
13	1,731 m (5,690 ft)	Chicago	Seattle	Denver	3
14	1,791 m (5,876 ft)	Phnom Penh	Bern	Kabul	3
15	1,830 m (6,003 ft)	Tehran	Tel Aviv	Seoul	1
16	2,250 m (7,380 ft)	Lima	Mexico City	Asuncion	2
17	2,250 m (7,380 ft)	Cairo	Riyadh	Sana'a	3
18	2,640 m (8,660 ft)	Caracas	Bogotá	Santiago de Chile	2
19	3,640 m (11,942 ft)	Quito	Calgary	La Paz	3
20	3,656 m (11,995 ft)	Ankara	Lhasa	Taipei	2