**PROG25211 - Assignment 2 – 10%**

**Group based (2 students per group)**

Due Aug 7 2024 at 11:59pm

**Overview**

For this assignment you are going to build a trained algorithm that can be used with a Restful Web Service.

**Part 1: Training Your Algorithm**

For this project you can use your trained algorithm from Assignment 1, or you can find a new algorithm to train.

**Note: If you did not do Assignment 1, or you are told by your professor that your Assignment 1 is unsuitable for this assignment you will need to find a new dataset to train.**

**Part 2: Restful Web Service Setup**

You will need to setup your algorithm to be a restful web service. You will need a name for your URL using one or two words. This name will replace <URL NAME> in your URL’s.

**Part 3: Sample**

Define a GET web service URL [http://127.0.0.1:5000/<URL Name>/sample](http://127.0.0.1:5000/%3cURL%20Name%3e/sample). This will return a JSON record showing a sample request. This JSON record will be copied and pasted in Postman to test Part 5.

**Part 4: Explain**

Define a GET web service URL [http://127.0.0.1:5000/<URL Name>/explain](http://127.0.0.1:5000/%3cURL%20Name%3e/explain). This will return a string that explains what and how your sample from part 3 is and how it should be modified. Provide an explanation for each of your fields, and what values need to be entered into each field.

Example: think of when we modified in the Titanic dataset. For the sex column we replaced values male with 0 and female with 1. Your explain would indicate that the sex field represents male and female, and 0 is for male and 1 is for female.

**Part 5: Evaluate**

Define a POST web service URL [http://127.0.0.1:5000/<URL Name>/evaluate](http://127.0.0.1:5000/%3cURL%20Name%3e/evaluate). This will accept a JSON record (copied and modified from part 3) and will return an answer as a String.

You will also need to provide in part 4 what this value represents. Example: In our Titanic model from class we return either 1 if the person would survive, or 0 if not.

**Part 6: Consuming Web Service**

Create a second application that consumes your application. Test your sample and your explain URL’s. Test your Evaluate 5 times with different inputs. Your tests on evaluate should show the different outputs of your algorithm.

**Use of New Material**

You are expected to use the material that is taught in class and in the notes. If you use libraries and code that is not done in class, you must provide a reference as to where this code came from. You may face deductions in your assignment if you do not.

**Naming Conventions**

Your assignment name should follow the pattern “Assignment2\_FirstName\_LastName\_PartX”. The X should be replaced with 1, 2, 3, …

**Submission**

Your assignment submission must be both the code you used (Jupyter Notebook file file), a copy of the CSV file that you used containing your data and a word document with screen shots of your testing along with the explanation. There will be a dropbox opening on slate that will allow you to submit the assignment. You may submit the assignment on slate as many times as you wish, but only the last submission will be marked. Slate will close the dropbox submission on the specified time.

**Last Day for Submissions**

Assignments will receive a 10% penalty per late day submission. The last day to submit the assignment is Aug 7, 11:59 pm. Any assignments not submitted by that time will receive a grade of 0.

**Group** **Assignment**

Remember that this is an group assignment meaning you are required to work on this with another student. If you work, collaborate, discuss, or share your work with other groups you risk a breach of academic integrity.

**Accommodations**

Any students with accommodations for this assignment must email me at least 3 days before the assignment is due with the specified accommodation and arrangements will be discussed. Students who do not contact me at least 3 days before the due date may void any accommodations for this assignment.

**Marking Scheme**

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| --- | --- |
| Part 1: Training Your Algorithm | /15 |
| Part 2: Restful Web Service Setup | /5 |
| Part 3: Sample | /20 |
| Part 4: Explain | /20 |
| Part 5: Evaluate | /20 |
| Part 6: Consuming Web Service | /20 |
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| **Deductions (These are deductions on any marks received above):**  -Project improperly named.  -Code, or Dataset not submitted.  -Late |  |
| Total | /100 |