**QB Subprogram Completion Test Assignment Model**

The Course Completion Assignment Model aims at generating a set of Questions and technical scenarios for the user based on the course they just completed.

The Code is elaborated in an extensive way as follows:

**Input**

The code takes input in the form of a json file (1.json). This file must contain every feature the user wants to put in, in a detailed format:-

{"\_id":

{"$oid":

"5ecea1b690cfa44a44f83139"},

"user\_id":"Caramel\_1",

"category":"ITProfessional",

"subsection":"1",

"no\_of\_mcqquestions":"30",

"courseid":"UIFE",

"difficulty":"easy",

"no\_of\_tsquestions":"5",

"saltSecret":"$2a$10$xdzs2VniPSbpZ0sxvpoq2O",

"\_\_v":"0"

}

}

Data like user\_id, category, subsection, no\_of\_mcqquestions, coursed, difficulty, no\_of\_tsquestions are expected in the file.

Since all the user data has been already gathered in previous iterations and at the start of the courses they completed, there is no need to get access to more data. This is done to reduce redundancy.

This program was initially made in IPython compiler and for converting to a .py file a lot of dependencies have to be installed.

Since this is an autonomous Process and no user input is required.

**Code**

* Json, fuzzy wuzzy and panda libraries are imported. And the json file is uploaded onto the program.
* Data is taken from the json input of user\_id, subsection, no\_of\_mcqquestions, courseid, difficulty, no\_of\_tsquestions.
* A list with skillcodes is created for faster referencing to the dataset
* Two functions are created -getmcq(no\_of\_mcq,subcourse\_code,difficulty,id1) function is called which take in account the no\_of\_mcq,subcourse\_code,difficulty the user wants. And getts(no\_of\_ts,subcourse\_code,difficulty,id1) to get technical scenarios according to what the user wants.
* Data is imported into a dataframe (df) through Dataframe Methods present in the pandas library. This dataframe is further processed and filtered on the basis of difficulty and the subcourse. It shuffles randomly by the sample method provided by pandas.
* QIDs of all the questions are fetched onto a dataframe. Finally, this dataframe is converted into json format.

**Output**

The final dataframe is then converted to json format and saved into a separate file with the name as Caramel\_1spc.json

Example output

["7PYM", "22PYM", "5PYM", "2PYM", "5PYM", "21PYM", "4PYM", "19PYM", "3PYM", "23PYM", "2PYM", "8PYM", "21PYM", "25PYM", "1PYM", "3PYM", "1PYM", "4PYM", "22PYM", "12PYM", "23PYM", "7PYM", "7PYM", "2PYM", "20PYM", "4PYM", "3PYM", "5PYM", "23PYM", "12PYM", "1PYTS"]

\*Previous Json output had two columns which not only adds significant overhead over data transfer but also is useless in cases of structured databases.