**Course Assets Application 1: Randomized Training Model**

The Randomized Training Model is a recommendation model which aims at generating a set of random questions, scenarios and quizzes at the subprogram level to test the user on multiple courses. This is to help the user to take and learn his progress after completing a certain subprogram.

It’ll focus on things like course\_name, course\_completed\_%, program\_name.

The Code is elaborated in an extensive way as follows:

**Input**

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

{

"\_id":{"$oid":"5ecea1b690cfa44a44f83139"},

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

"firstName":"Student",

"lastName":"One",

"program\_name":"Frontend",

"course\_completed\_%":80,

"category":"Student",

"course\_name":"Introduction to Html"

}

The Input has to mention the course name that the user has enrolled into along with his completion percentage in it. It should also include the program name he is enrolling in.

**Code**

* Data is taken from the json input like ID, name, course\_name, course\_completed\_% and program name.
* Many programs have the same subprograms which are common between them. So we need to sort the programs by common courses.
* Create a dataframe which includes all the programs and in its columns are the subprograms included in it. So each row should be like:

Program Subprogram1 Subprogram2 Suprogram3

Frontend Core.js Angular.js React.js

* The getcourse() function is called which will firstly sort data according to the program\_name. This data will be divided into individual subprograms.
* A new dataframe will be created which will save all the IDs of questions, scenarios and quizzes of individual courses. From this dataframe common courses will be extracted and saved into another dataframe which will be saved in the name of the program. \*This will probably be a one-time thing since once common data is stored you won’t need to do it again for that particular program.

**\*\*IMPT\*\***

**Example**: Frontend has Core.js, Angular.js and React.js. These individual courses have material which is unique to them. We will extract common and unique material and save it as data for Frontend whole program. Therefore next time when you’ll want to give an assessment from the Frontend program, you will get tests, scenarios from all subprograms inside it.

* Now finally this output can be sampled and randomized so that every individual user gets data randomly and fairly from every topic inside every subprogram.
* Finally the output is provided as a json file.

**Output**

The final dataframe is then converted to json format and saved into a separate file with the name of the user id.

{"Frontend":

{

"Tests":{t1,t7,t13,t44,},

"TechScenarios":{ts22,ts45,ts47,ts71,ts78},

"Quizzes":{qz1,qz4,qz15,qz17,qz22,qz29},

"Questions":{q2,q6,q12,q15,q44,q48,q52},

}

}

These variables indicate total no of questions , tech scenario, tests and quizzes.