

## Assignment for Architect

**Instructions:** - Kindly attempt below Q1 & Q2 and upload the assignment in GitHub

### Q1 – JSON Assignment

JSON is a lightweight data exchange format. It is easy to read and write by human beings; and processed by any programming languages. The syntax of JSON is described in various references, one is from <https://www.json.org>. A sample json file is provided as attachment in the specification. The requirement of this assignment is to write a program that opens a json file with the same schema as the sample file provided (but with more items). The json file path is given as an argument to the command line. The program retrieves the data in the json file and forms the data in a table.

An example is shown below.

Id	Type	Name	Batter	Topping
0001	donut	Cake	Regular	None
0001	donut	Cake	Regular	Glazed
0001	donut	Cake	Regular	Sugar
0001	donut	Cake	Regular	Powdered Sugar
0001	donut	Cake	Regular	Chocolate with Sprinkles
0001	donut	Cake	Regular	Chocolate
0001	donut	Cake	Regular	Maple
0001	donut	Cake	Chocolate	None
0001	donut	Cake	Chocolate	Glazed
0001	donut	Cake	Chocolate	Sugar
0001	donut	Cake	Chocolate	Powdered Sugar
0001	donut	Cake	Chocolate	Chocolate with Sprinkles
0001	donut	Cake	Chocolate	Chocolate
0001	donut	Cake	Chocolate	Maple
0001	donut	Cake	Blueberry	None
0001	donut	Cake	Blueberry	Glazed
0001	donut	Cake	Blueberry	Sugar
0001	donut	Cake	Blueberry	Powdered Sugar
0001	donut	Cake	Blueberry	Chocolate with Sprinkles
0001	donut	Cake	Blueberry	Chocolate
0001	donut	Cake	Blueberry	Maple
0001	donut	Cake	Devil's Food	None
0001	donut	Cake	Devil's Food	Glazed
0001	donut	Cake	Devil's Food	Sugar
0001	donut	Cake	Devil's Food	Powdered Sugar
0001	donut	Cake	Devil's Food	Chocolate with Sprinkles
0001	donut	Cake	Devil's Food	Chocolate
0001	donut	Cake	Devil's Food	Maple
0002	donut	Raised	Regular	None

0002	donut	Raised	Regular	Glazed
0002	donut	Raised	Regular	Sugar
0002	donut	Raised	Regular	Chocolate
0002	donut	Raised	Regular	Maple
0003	donut	Old Fashioned	Regular	None
0003	donut	Old Fashioned	Regular	Glazed
0003	donut	Old Fashioned	Regular	Chocolate
0003	donut	Old Fashioned	Regular	Maple
0003	donut	Old Fashioned	Chocolate	None
0003	donut	Old Fashioned	Chocolate	Glazed
0003	donut	Old Fashioned	Chocolate	Chocolate
0003	donut	Old Fashioned	Chocolate	Maple
0004	bar	Bar	Regular	Chocolate
0004	bar	Bar	Regular	Maple
0005	twist	Twist	Regular	Glazed
0005	twist	Twist	Regular	Sugar
0006	filled	Filled	Regular	Glazed
0006	filled	Filled	Regular	Powdered Sugar
0006	filled	Filled	Regular	Chocolate
0006	filled	Filled	Regular	Maple

Usage: [path to your program] [input file path] [output file path]

/<home directory>/app/sample.json  
/<home directory>/app/result/sortbyid.table

#### Assignment Marking Scheme:

- Program correctness:
  - Open file, read file data, form the table of data, write to file
  - Command process
- Program output format, clarity, completeness, and accuracy
- Program indentation and readability
- Choice of significant names for identifiers
- Comments - description of variables and constants

**Q2 – Choose to build one of the following application and explain its architecture in PPT**

1. Using 100% Open Source technologies, make a mobile app to take a picture, upload the picture onto a cloud Computer Vision library to detect the number of human faces inside the picture. Send response back to the mobile app with the number. Can build on Android, iOS, can use React Native, Swift, Objective C++, Java, embedded web HTML5 or any other framework

**OR**

2. Build a multiplayer tic-tac-toe game on web, desktop and mobile using any programming language of choice open source software and host it on cloud. Keep a log on all player moves.
  - a. Advanced option
    - i. Create a version for human to computer play
    - ii. Write a prediction algorithm to predict the human player's next move