## **Assignment Details**

**Objective:** To evaluate critical thinking, analytic curiosity, and quantitative skills for analyzing data. Estimated time: 4 hours.

**Case Question:** You are an analyst for Govini supporting an engagement with the Deputy Program Executive Officer for Ground Combat Systems who oversees the Department of Defense's (DoD) ground combat systems program portfolio. The client is examining the federal government's prior investments in various ground combat systems (GCS) programs for potential contracting inefficiencies or opportunities for future investments.

The client would like Govini's help to illuminate what the Department actually spent on major GCS programs, specifically, the Abrams tank (e.g., M1A1), Bradley fighting vehicle (e.g., M2A1), and Stryker armored personnel carrier (e.g., M1130). The client wants an analysis of FY16 through FY20 federal contract data for these programs that summarizes prominent vendors, funding/contracting offices, agencies, and outlines of key technologies, products, and services acquired. Additionally, the client would like to understand what future acquisitions for each of these programs may look like given where they are in their life cycles, and what potential risks may be associated with the management of the programs.

Your response should include, but is not limited to, the following elements:

1) Solutions to the following pain points the client has previously encountered in their data, including:

* Vendor name normalization
* Misidentified or unidentified GCS contracts and vendors

2) Assessment of spending trends, key technologies, programs, vendors, and any other elements you found most interesting about the market (e.g., current acquisition life cycle status of the GCS programs and what it means for future investments; or past/future federal budget alignment within each program). This assessment can utilize external sources to supplement findings in the data.\*

3) The assessment should include a conclusion with key takeaways and one or two interesting insights that the client can use to inform their acquisition decisions.

4) Commented-code or a short summary of methodology used to clean/normalize, organize, and/or transform the data.

**The Data:** “ground\_vehicles.csv” is a data extract of DoD contracts for the three ground combat systems (Abrams, Bradley, Stryker). For simplicity, these three programs can be considered the “ground combat systems program portfolio”. Awards should be based on the "Awarded Amount" field. See a full data dictionary below.

**Delivery:** The client seeks a concise 1-3 page written (including visual aids and citations) summary outlining your key findings. Be prepared to have a 10 to 15 minute discussion about your analysis. Please share your Python or R scripts (highly preferred), Excel workbook, Tableau files or other tools used for the analysis. **Please submit your written response in PDF format.**

\*Please cite any additional data or sources of information used in your analysis

## **Data Dictionary**

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| ID | Unique identifier of the transactions |
| Contract Number | External identifier for a contract |
| Award Number | External identifier for an award on a contract |
| Modification Number | An external identifier for a Modification Number, which denotes an action being reported that indicates the specific subsequent change to the initial award |
| Fiscal Year | Fiscal year in which this transaction occurred. |
| Title | Title of the transaction |
| Awarded Amount | Federal Government’s obligation, de-obligation, or liability, in dollars, for an award transaction |
| Contracting Office | Name of the office that contracted this work |
| Contracting Agency | Name of the agency that contracted this work |
| Place of Performance State | Full name of the state for where the contract work is performed |
| Place of Performance City | City for where the contract work is performed |
| Vendor Name | Name of the Vendor awarded this contract |
| Vendor Top Name | Name of the ultimate HQ (headquarters) of the associated organization |
| PSC Name | Name of the PSC (Product and Service Codes, which classifies products, services, and R&D items) industry associated with this transaction |