**Case Study**

# Instructions

1. This document has detailed instructions for the case study**.** You should use **latest version of Power BI Desktop** for developing the reports / dashboards
2. The data for the case study is provided separately in the Excel file

1. **Take assumptions** wherever necessary, but **highlight those assumptions** (in a separate word doc) along with your final deliverables

1. You can **be creative with respect to the color scheme/ creative icons/ etc**. However, please maintain professional standards

1. **Timelines:** It should take you **~3 hours** to complete the case study and you should submit the case study **within 2 days (48 hours)** of receiving this document

1. If you do not have Power BI installed on your computer, you **can download FREE version from Microsoft Power BI official website. Do not use your corporate Power BI license to complete the case study**

# Case Study

XYZ co. conducted a survey on 500 respondents and asked six questions in the survey (survey questionnaire and details from page 6 in appendix). The company needs to identify the % of respondents who answered 4 or 5 in each “Domain area” (Question 6).

Use the power query editor to **perform any data manipulations, transformations, etc** and use the output to **create the reports/dashboards.**

You need to create the following dashboards as per below requirements

1. **Dual Axis Chart:**

* **Primary axis:** Create a bar chart of percentage of respondents who answered 4 or 5 in Domain area (Q6)
* **Secondary axis**: Create a line chart showing split by countries on the same chart.
* **Tooltip** 
  + **Bar chart:** Area, # of respondents, % of respondents who answered 4 or 5
  + **Line chart:** Country, Area, # of respondents, % of respondents who answered 4 or 5
* **Filters:** Add the following filters in dashboard:
* **Country Slicer:** UK, USA, India
* **Job Type:** IT/Software, Analytics, Core, Education
* **Job Specialization:** Electrical/Electronics, Mechanical, Civil, Industrial, Infrastructure
  + Filter should show “NA” for all the Job Types except Core
* **Monthly Salary:** Slider filter
* **Activity:** Office work, Music/Painting/Dancing, Sleep, School/College, Homework, Sports, Others
* **Domain Area:** Area A-Q

1. **Stacked Bar Chart:**

* **Primary Chart:** Create a 100% stacked bar chart (stack by response option) for each Domain Area
* **Data Table:** Create a data table showing Net Significance Score by Domain Area
* **Net Significance Score:** (Count of 4,5 – Count of 1,2) / (Relevant responses)

* **Tooltip** 
  + **Stacked Bar chart:** Area, # of respondents, Net Significance Score.
* **Filters:** Add the following filters in dashboard:
* **Country Slicer:** UK, USA, India
* **Job Type:** IT/Software, Analytics, Core, Education
* **Job Specialization:** Electrical/Electronics, Mechanical, Civil, Industrial, Infrastructure
  + Filter should show “NA” for all the Job Types except Core
* **Monthly Salary:** Slider filter
* **Activity:** Office work, Music/Painting/Dancing, Sleep, School/College, Homework, Sports, Others
* **Domain Area:** Area A-Q

1. **Average significance score:**

We want to **compare the significance of domain areas** **across job types for each country**. Create a dashboard representing average significance score *(see definition below)* for each possible combination of country, job type and domain area **in a single view**. Use an appropriate chart/visualization to easily compare values without much actions required by the user on the dashboard.

**Avg. significance score =** *Average score of respondents (exclude value 6 "I am unfamiliar with this business area")*

*For instance, average significance score for respondents choosing* ***India, Analytics and Area*** *A is* ***4.26***

**Expected Output:**

1. Power BI file with 3 pages for each question with all the queries implemented to slice and dice the data along with the visuals as described in the above section
2. In case you can come up with **other enhanced visuals** to represent first two exercises, feel free to implement them instead

**Key Pointers:**

1. There should be a legend of countries
2. Add Note and Source text at bottom
3. Font should be ‘Arial’
4. Refer ‘Appendix 1’ and ‘Appendix 2’ for ‘Survey questionnaire’ and ‘Data Dictionary’ respectively

# Appendix (Annexure 1 of 2)

**Survey Questionnaire**

1. **In which country are you located?** 
   1. UK
   2. USA
   3. India
2. **Which best describes the job you work for?** 
   1. Software Developer [TAG: IT/Software]
   2. DBA [TAG: IT/Software]
   3. Data Scientist [TAG: Analytics]
   4. Data Analyst [TAG: Analytics]
   5. Faculty/Teacher [TAG: Education]
   6. Core Engineering Job [TAG: Core]

**[Q3** **logic: Show only if "Core Engineering Job" is selected in previous question]**

1. **Which of the following best describes your job specialization?** 
   1. Electrical/Electronics
   2. Mechanical
   3. Civil
   4. Industrial
   5. Infrastructure
2. **What is your monthly salary?** *Input number*
3. **Approximately what is your split of your time in your day to day life in %?**

*Allocation | Total: 100*

* 1. Office work
  2. Music/Painting/Dancing
  3. School/College
  4. Home work
  5. Sports
  6. Others

1. **In which area there is an opportunity to improve the productivity in your job, through the adoption of software-based solutions? Please rank each business area you are familiar with.** 
   1. Least significant
   2. 2 3) 3
   3. Significant
   4. Very significant
   5. I am not familiar with this area of the business

# Appendix (Annexure 2 of 2)

**Data Dictionary (For case study 1)**

|  |  |  |
| --- | --- | --- |
| **Question** | **Code** | **Value** |
| Q1: In which country are you located? | 1 | UK |
| 2 | USA |
| 3 | India |
| Q2: Which best describes the job you work for? | 1 | Software Developer (Job type: IT/Software) |
| 2 | DBA (Job type: IT/Software) |
| 3 | Data Scientist (Job type: Analytics) |
| 4 | Data Analyst (Job type: Analytics) |
| 5 | Faculty/Teacher (Job type: Education) |
| 6 | Core Engineering Job (Job type: Core) |
| Q3: Which of the following best describes your job specialization?  (Only if Q2=6) | 1 | Electrical/Electronics |
| 2 | Mechanical |
| 3 | Civil |
| 4 | Industrial |
| 5 | Infrastructure |
| Q4: What is your monthly salary? |  | Number input from user |
| Q5: Approximately what is your split of your time in your day to day life in %?    For each respondent percentage sums up to 100% | 1 | Office work |
| 2 | Music/Painting/Dancing |
| 3 | Sleep |
| 4 | School/College |
| 5 | Home work |
| 6 | Sports |
| 7 | Others |
| Q6: In which area there is an opportunity to improve the productivity in your job, through the adoption of software-based solutions?  Each respondent gives answer for Area A-Q | 1 | Least significant |
| 2 | 2 |
| 3 | 3 |
| 4 | Significant |
| 5 | Very significant |
| 6 | I am not familiar with this area of the business |