Case Study #1: Make a Plan

VERSION 2.0

SEPTEMBER, 2023

UNDERSTANDING THE ORIGIN OF DATA

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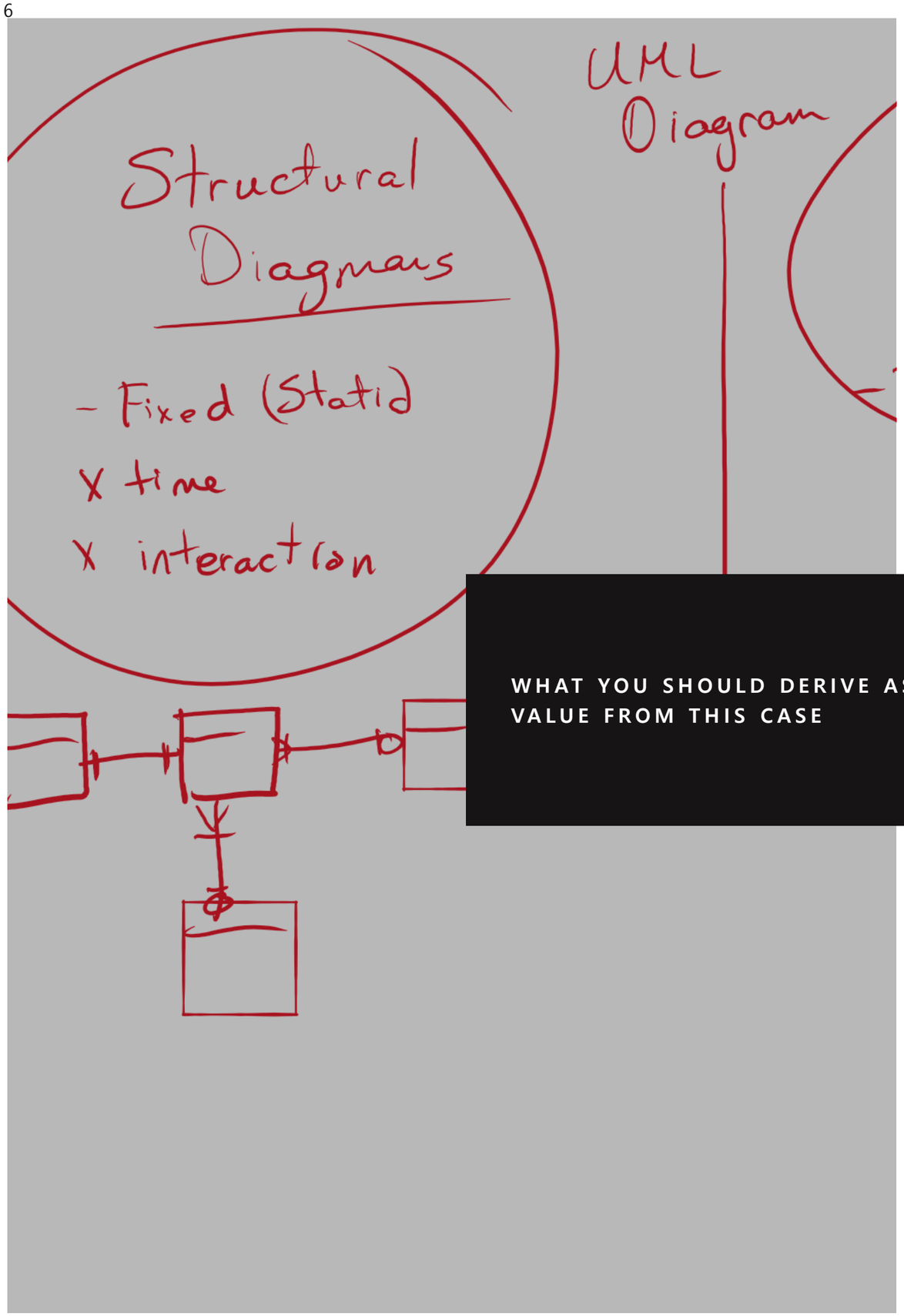
Rules regarding submissions through eConestoga.



WHAT YOU SHOULD DERIVE AS VALUE FROM THIS CASE

ACCOMPLISHMENT

Unit Outcomes

Through this activity, the following outcomes from your course outline will be achieved:

1.1 Review business issues and requirements, primarily focusing on individual accountability and responsibility.

1.2 Import data from rDB tables, databases, different sheets, and workbooks.

1.3 Inspect data sets to identify quality concerns.

1.4 Develop a plan to clean data.

1.5 Execute data cleaning plans using Excel.

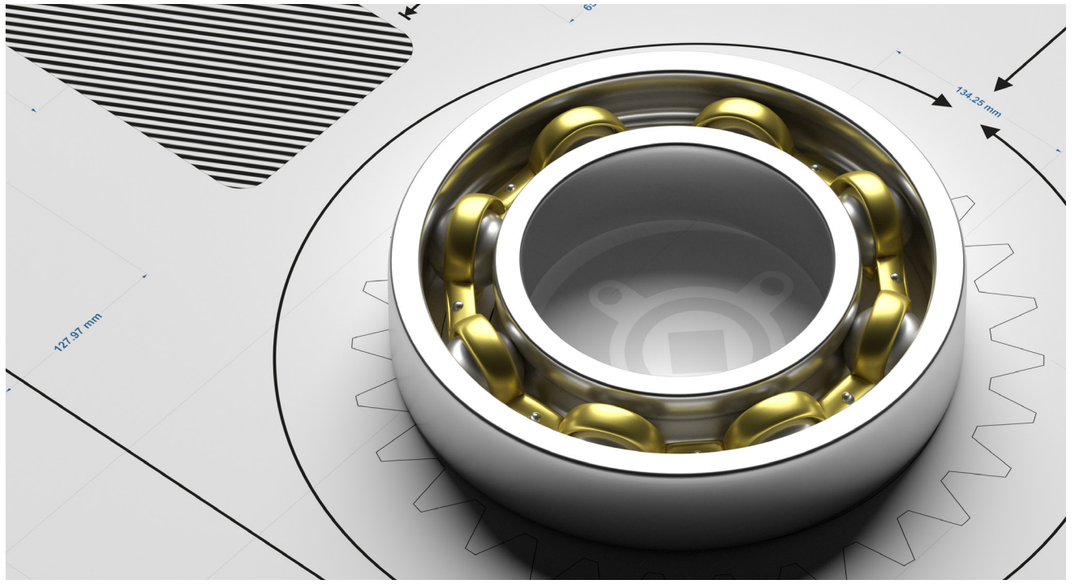
1.6 Develop detailed plans to create knowledge from data to meet requirements.

1.7 Execute a plan creating relevant measures of frequency and central tendency, along with summary statistics.

Case Narrative

Little Panda Quality Analysis (LPQA) is a local parts inspection firm that specializes in the testing and examination of automotive components. Over the past few years LPQA has shifted their focus to supporting only two major automotive companies (The LPQA clients shall henceforth be known as Simpson Automotive and the Fast Cars Company) who ship parts from all over Canada to LPQA for quality inspection. LPQA's success in this field is due to industry recognition for their ability to handle a large product mix of unique parts, meaning that whatever the clients require tested LPQA promises that their specialists will be able to handle the job. This has led LPQA to accept and support a catalogue of 400 unique components.

On any given day LPQA will receive on average 3 to 6 transport trucks full of components. These transport trucks typically hold a large quantity of a few unique parts as these trucks originate from different manufacturing plants within Canada. This means that on a typical day LPQA receives roughly 10 to 20 unique components for which the Quality Inspectors (QI) will need to process.



The QI workers inspect the unique parts daily looking for defects, imperfections or misaligned millings. While the work is straightforward there is an incredible quantity of parts and metrics that workers need to memorize.

Changes to the operational environment have provided employees with a digital tablet device wherein all of their measurements are now recorded. Data is input from the tablet and submitted to a centralized database to a centralized server system. This database serves to record data and create a clear hierarchy of organized information that provides LPQA and their clients the basis for detailed analytics. This case in particular will be focused on the internal operations of LPQA. More specifically you have been hired as an analyst to help LPQA refine and enhance their operational capacity and you must identify sources of information, data or quantifiable events that you could record to help LPQA understand their workforce more appropriately and generate a better output. You may leverage any of the content discussed in-class for this case and you are encouraged to 'think outside the box' in terms of your creativity. While this is an individual assignment, you are encouraged to host discussions within the class and among your classmates as this is a meaningful way through which we discover new knowledge and information.

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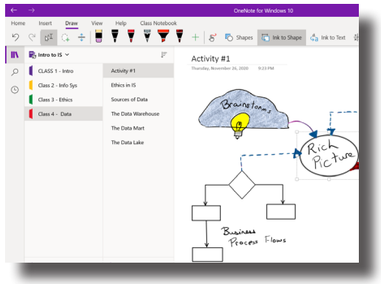
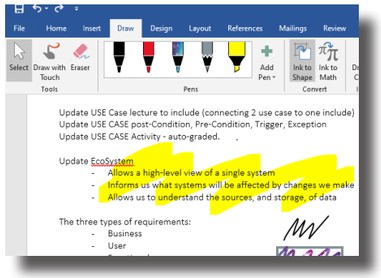
Deliverable Summary



PART 1: DATA IDENTIFICATION

Emulating the in-class practice we held with the client organization, you are to build out a fishbone diagram identifying the primary metrics that could be captured to address the case narrative, along with identifying the scope and parameters for each metric.



PART 2: DATA COLLECTION PLAN

How would you capture the information you identified in your fishbone for Part 1?
What concerns exist regarding how this data is collected?

PART 2: DATA CLEANSING PLAN

What data would you collect from the QA line? What rules would you set and how would you handle or determine what constitutes bad data? There is no single correct answer to this problem, instead, this is about exercising your critical thinking skills to determine one of the approaches that could be taken to recitfy this situation.

PRIMARY

[redacted]

DELIVERABLES

Part 1: Data Identification

Data serves as a potent catalyst for transformation in any professional setting. In our discussions, we explored the potential of utilizing data from a client organization as an external resource, creating opportunities to establish new revenue streams. In this case study, your role is that of an analyst. Through needs-analysis activities, you will identify pivotal metrics that would help support benchmarking or evaluating internal operational efficiency.

Select an 'area of focus' within the client organization which should be benchmarked, this could be on any topic of your choosing (Example: Worker quota or production rates). What metrics would you need to record to measure and evaluate your 'area of focus'.

These metrics will play a crucial role in future projects, providing a framework to assess and enhance the internal operations of the client organization. You may use any content discussed in-class and pre-established sources of data from the in-class delivered narrative. You also have the right to expand upon the scope to include sources of data you create.

For this component of the deliverable you will create a fishbone (brainstorm) diagram to address your 'area of focus' with at least 4 (four) branches, each identifying a value-add internal operation metric. For each metric you must complete the following sub-topics:

- Define the metric scope
- Define the metric parameters
- Provide a data example of the metric

This is where you add clarity and definition to the data you would be harvesting and start to identify how this data would be organized.

You may complete your work using any software, or, as a hand drawn submission uploaded as a photograph. Ensure that your content is legible as you will only receive grades for work that can be read.

METRIC

A quantifiable value that can be repeatedly measured.
Example: Time to weigh one component.

SCOPE

Definiting rules regarding when and how something is measured.
Example: Time recording starts once a product is placed on scale, stopped once removed.

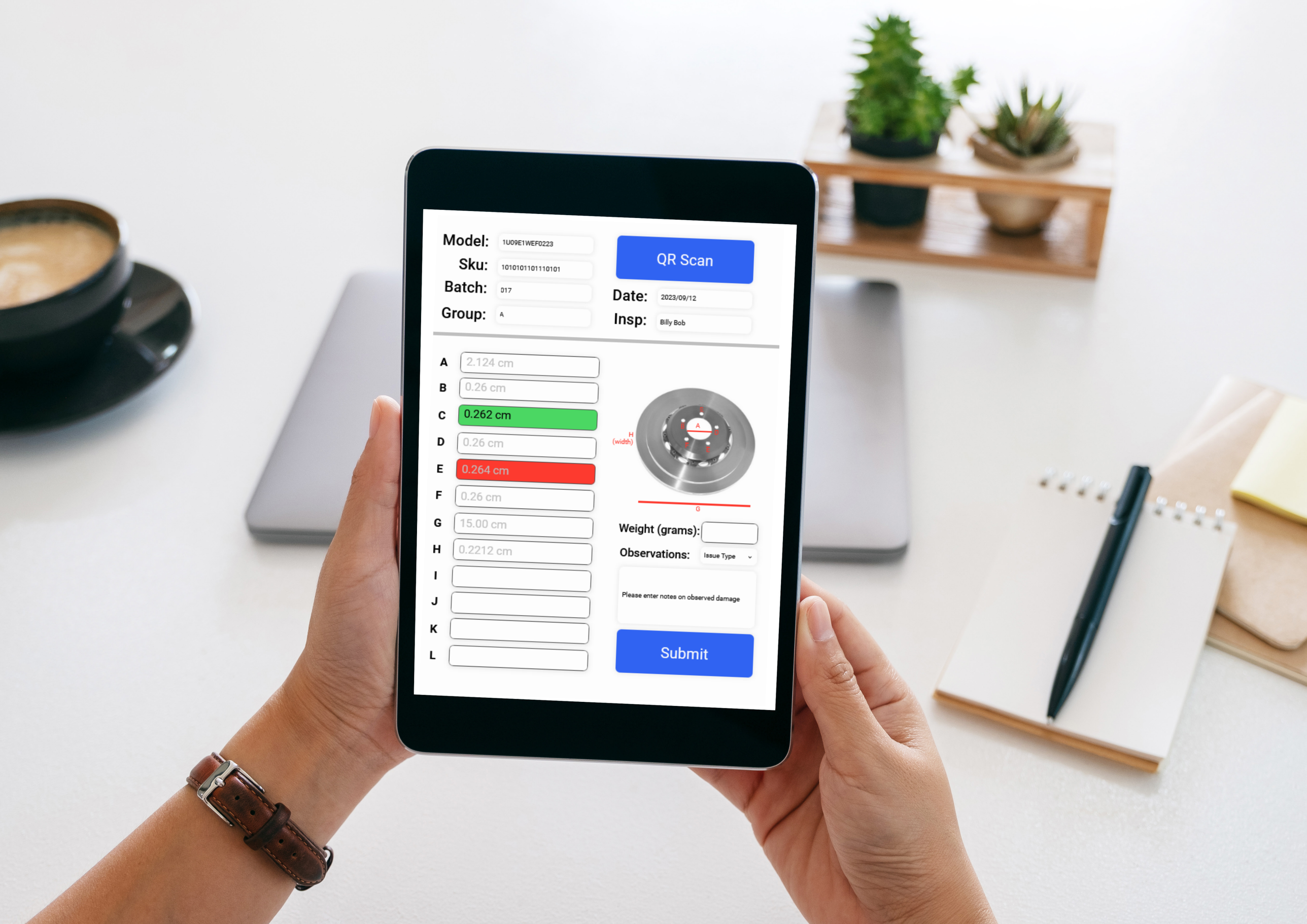
PARAMETER

The rules surrounding how the data is to be recorded.
Example: Recorded in seconds.

DATA POINT

Individual piece of data.

Example: 10 seconds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Batch:
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Group:
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QR Scan
Date:
2023/09/12
Insp:
Billy Bob
A
2.124 cm
B
0.26 cm
C
0.262 cm
D
0.26 cm
E
0.264 cm
F
0.26 cm
G
15.00 cm
H
0.2212 cm
I
J
K
L
H
(width)
G
Weight (grams):
Observations:
Issue Type
Please enter notes on observed damage
Submit

Part 2: Data Collection Plan

As an Analyst, documenting your process is essential. For each metric identified in part 1 of this case study, it is mandatory to provide a clear rationale. Ensure that your process consists of actionable steps, illustrating how you would take the metric, identify real-life data, collect and synthesize the data. For each metric, you will complete the following:

- Write a clear and simple rationale, which should be no more than 50 words in length.

- Craft a detailed step-by-step process for collecting data. Attempt to restrict this to 5 or less steps that demonstrate the executable actions that you would take to facilitate the collection of this critical data.

- Identify potential risks, concerns or sources of error regarding data collection. Explain what could go wrong. There is no specific data length limit for this component, but not all metrics will inherently have risks, you will complete this component only when you feel it necessary.

You are expected to include a short (200 - 400 word) reflection component discussing the following: What data would you collect from the QA line? What rules would you set and how would you handle or determine what constitutes bad data? There is no single correct answer to this problem, instead, this is about exercising your critical thinking skills to determine one of the approaches that could be taken to recitfy this situation.

Evaluation

Your evaluation will be held to the following rules and constraints. These rules are firm and are irrefutable.

- Failure to submit this completed deliverable will result in a grade of zero (0) on this deliverable. See Conestoga College policy for additional information.
  - There will be no opportunity provided to make up for this missed deliverable or raise your grade
- It is the student's responsibility to ensure that their work has been submitted through eConestoga, on-time, to the correct course and in the correct folder
  - If you submit your work to the incorrect folder then you may not receive any grade for your work. This will be completely up to the discretion of your Instructor
  - If you, the student, submit your file to the wrong folder or course on eConestoga then you must resubmit to the correct folder before the deliverable deadline has been reached

GRADING RUBRIC

For further grading details you will need to refer to the rubric associated with this deliverable. Rubrics can be found within the Rubrics submodule of the Evaluations module in your eConestoga course. If a rubric is not available you are to inform your faculty member of this oversight. Only deliverables that are ungraded, or that make use of a marking scheme, will not have a specific rubric associated to them. Evaluations that make use of marking schemes will be restricted to tasks or activities that are evaluated in a binary manner; correct or incorrect, with no room for interpretation or subjectivity.

It is the responsibility of each student to review the content within the rubric and deliver their submission adhering to the requirements inside said document. If you are unsure of the content, meaning or rationale of any component of the rubric then you are to consult with your faculty member, in-class, before the submission deadline.

Submission Deadline(s)