

QBN1 – QBN1 TASK 1: BUSINESS CASE ANALYSIS

DEPLOYMENT – D602

PRFA – QBN1

Preparation

Task Overview

Submissions

Evaluation Report

COMPETENCIES

4162.1.1: Analyzes a Business Case

The learner analyzes a business case to determine the requirements necessary for deployment.

INTRODUCTION

As a data analyst, you may be required to analyze a business case for stakeholders to determine the appropriateness of implementing machine learning solutions.

In this task, you will provide a business case summary for stakeholders that describes the objectives of an MLOps deployment architecture and identifies the constraints and requirements for implementing an MLOps deployment.

SCENARIO

You work as a data scientist for a regional supermarket chain, Kronkers, that is exploring how to leverage machine learning models to optimize various aspects of its operations, including personalized product recommendations, demand forecasting, and customer segmentation.

Currently, data analysts at Kronkers are working on each application of machine learning separately and are spread across teams at the company. Product recommendations and customer segmentation, for instance, are analyzed by the marketing team, while demand forecasting is analyzed within the procurement department. The company's analysts principally work in Python, but there is no programming language that is standard within the organization; some analyses have been written in R and some in Julia, depending on the particular needs of the project. Analyses are stored in a shared OneDrive space accessible to all analysts.

Use of completed machine learning models is not widespread, and deployment varies by model. One model is run using an internal API hosted on a company server, while others are run on a user's individual company laptop on an as-needed basis, often quarterly, to prepare business reports. Shifts in customer demand or other parameters that are used to run models are entered manually in the code or imported as text files. Datasets that serve as inputs and outputs from each model are stored with the model within the same OneDrive folder.

While there has been discussion of integrating multiple models together into one internal company application, this has not been pursued because of the complexity involved in integrating models developed in multiple languages with multiple different sets of parameters.

While there are a few experienced programmers and data scientists at Kronkers, to date, there has been no role dedicated to maintenance of code, machine learning models, or deployment. However, there is a budget allocated in the current fiscal year for machine learning model maintenance, tracking, and quality control.

While some within the company recognize the importance of machine learning operations (MLOps), there are several senior leaders who question the utility of MLOps. Your manager has asked you to analyze the business case for implementing MLOps and to write a summary detailing objectives, constraints, and requirements for MLOps deployment.

REQUIREMENTS

Your submission must represent your original work and understanding of the course material. Most performance assessment submissions are automatically scanned through the WGU similarity checker. Students are strongly encouraged to wait for the similarity report to generate after uploading their work and then review it to ensure Academic Authenticity guidelines are met before submitting the file for evaluation. See [Understanding Similarity Reports](#) for more information.

Grammarly Note:

Professional Communication will be automatically assessed through Grammarly for Education in most performance assessments before a student submits work for evaluation. Students are strongly encouraged to review the Grammarly for Education feedback prior to submitting work for evaluation, as the overall submission will not pass without this aspect passing. See [Use Grammarly for Education Effectively](#) for more information.

Microsoft Files Note:

Write your paper in Microsoft Word (.doc or .docx) unless another Microsoft product, or pdf, is specified in the task directions. Tasks may not be submitted as cloud links, such as links to Google Docs, Google Slides, OneDrive, etc. All supporting documentation, such as screenshots and proof of experience, should be collected in a pdf file and submitted separately from the main file. For more information, please see [Computer System and Technology Requirements](#).

You must use the rubric to direct the creation of your submission because it provides detailed criteria that will be used to evaluate your work. Each requirement below may be evaluated by more than one rubric aspect. The rubric aspect titles may contain hyperlinks to relevant portions of the course.

Create your business case summary by doing the following:

- A. Describe the objectives of an MLOps deployment architecture.
- B. Identify constraints to implementing an MLOps solution.
- C. Identify *all* functional and non-functional requirements for the MLOps solution you propose.
- D. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.
- E. Demonstrate professional communication in the content and presentation of your submission.

File Restrictions