BRN1 — BRN1 TASK 2: SOLVE AN OPTIMIZATION PROBLEM

OPTIMIZATION — D605

PRFA — BRN1

COMPETENCIES

4165.1.2 : **Identifies the Objective Function and Constraints**

The learner identifies the objective function and constraints for an optimization problem.

INTRODUCTION

In this task, you will consider the optimization problems identified in the provided scenario and compare approaches to the problem. You will describe how a selected approach is applied to the problem, including tools, methods, and algorithms. Finally, you will assess the risks and limitations involved in your suggested optimization approach.

SCENARIO

Use "Amazon Air Optimization Solution" and "Amazon Distribution" in the Supporting Documents section to complete the task.

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.

⑦ Help

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.

A. Identify the optimization problem in the given scenario.

B. Create mathematical representations of the components of the optimization problem you identified.
    1. Write an expression that represents the objective function.
    2. Write expressions that represent the constraints of the optimization problem.
    3. Identify the decision variables of the optimization problem.

C. Describe the approach you will use to solve the optimization.
    1. Identify the optimization method or algorithm you will use to solve the problem.
    2. Describe the tools and technologies you will use to solve the problem.

D. Assess the risks and limitations involved in your recommended optimization approach.

E. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

F. Demonstrate professional communication in the content and presentation of your submission.

File Restrictions

File name may contain only letters, numbers, spaces, and these symbols: ! - _ . * ' ( )
File size limit: 200 MB
File types allowed: doc, docx, rtf, xls, xlsx, ppt, pptx, odt, pdf, csv, txt, qt, mov, mpg, avi, mp3, wav, mp4, wma, flv, asf, mpeg, wmv, m4v, svg, tif, tiff, jpeg, jpg, gif, png, zip, rar, tar, 7z

RUBRIC

A:IDENTIFY OPTIMIZATION PROBLEM

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
The optimization problem in the scenario has not been identified.	The optimization problem has been completely identified.	The optimization problem has been completely identified.