BRN1 — BRN1 TASK 3: IDENTIFICATION OF THE OBJECTIVE FUNCTION AND CONSTRAINTS

OPTIMIZATION — D605

PRFA — BRN1

Preparation   **Task Overview**   Submissions   Evaluation Report

COMPETENCIES

4165.1.3 : Solves an Optimization Problem

The learner solves an optimization problem programmatically.

INTRODUCTION

In this task, you will provide a solution for the problem defined in Task 2 implemented in either Python or R. Your solution will invoke an optimization solver in your code, and you will describe how the code functions. You will analyze the output of your model. Finally, you will reflect on what you expected against the outcome of your approach.

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.

⑦ Help

A. Using the mathematical representations that you developed in Task 2, write a program in either Python or R to solve the optimization problem computationally.
1. Demonstrate that the solver provided a solution to the optimization problem.

Note: You will submit your code through a cloud repository platform. This will need to include the repository itself along with its history of changes.

B. Analyze the output of your model to demonstrate that the solution satisfies the requirements of the problem.
1. Demonstrate that the constraints of the optimization problem are satisfied.
2. Demonstrate that the solution includes decision variables, constraints, and the objective function.
3. Explain why the solution that your code outputs matches your expected output.

C. Provide a reflection on how the development of your approach matched your expectations of the process.

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

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:OPTIMIZATION PROBLEM PROGRAM

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A program to solve the optimization problem computationally has not been written.	The program to solve the optimization problem computationally has been written, but it has been written using a language other than Python or R.	The program to solve the optimization problem computationally has been written in either Python or R.

A1:DEMONSTRATE SOLVER SOLUTION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT