Assessment:	Project Milestone 5
Subject:	Business Intelligence 381
Total:	50

Project Milestone 5

Introduction

This project will investigate various health and demographic datasets to identify meaningful patterns and trends. The details of the project requirements are described in the **Project Outline** document. The project outline underscores the use of CRISP-DM as a structured approach to guide you through the data science project, emphasizing its importance in the context of real-world data analysis and modelling.

Outline

The project is divided into six (6) milestones, where at each stage some deliverables are to be produced in terms of a series of reports that describe the project plan, the work carried out during the iterative process of data preparation, modelling, evaluation, and deployment.

The CRISP-DM methodology breaks down a data mining project life cycle into six phases with each phase consisting of many secondary tasks. This milestone addresses the *Deployment Phase* of CRISP-DM.

Deployment

Deployment is the sixth and final phase of the CRISP-DM methodology and comes after the evaluation phase. The models created during the modelling phase are not particularly useful unless the results are available for use by the intended audience. The solutions generated in the modelling phase are only valuable if they are put into action. The objective of the deployment phase is to take the solutions generated in the modelling phase and put them in an environment where they can be used to drive business value. This phase is critical to the success of the data mining process because without proper deployment, the business benefits of the project are not realised despite all the efforts that went into the project.

Tasks

This milestone consists of the following tasks that should be submitted as an assignment on given due date. The first two tasks (*Plan Deployment*, and *Plan Monitoring and Maintenance*) should be submitted as Milestone 5, and the last two tasks will constitute Milestone 6.

Plan Deployment

- Evaluate the results and determine a strategy for deployment of the data mining result(s) into the business.
- Summarise the deployment strategy, including necessary steps and how to perform them.
  - Summarize deployable results.
  - Develop and evaluate alternative plans for deployment.
  - Determine how knowledge or information will be propagated to users.
  - Decide how the use of the result will be monitored and its benefits measured (where applicable)
  - Establish how the model result will be deployed within the organisation's systems.

- o Determine how its use will be monitored and its benefits measured.
- Conduct some research on data mining and machine learning deployment tools.
- Evaluate the different deployment tools and motivate your recommend deployment tool.
- Deploy the final model in a user-friendly interface using the preferred deployment tool (e.g. Shiny).

Plan Monitoring and Maintenance

Monitoring and maintenance are important issues if the data mining results are to be incorporated into the day-to-day operations of the business.

- Address considerations such as data input, post-deployment monitoring, and updating the model.
- Summarise the monitoring and maintenance strategy including necessary steps and how to perform them.
  - o Check for dynamic aspects (i.e., what things could change in the environment?)
  - o Decide how accuracy will be monitored.
  - o Determine when the data mining result or model should not be used any more.
  - o Identify criteria (validity, threshold of accuracy, new data, change in the application domain, etc.), and what should happen if the model or result could no longer be used. (update model, set up new data mining project, etc.).
  - o Will the business objectives of the use of the model change over time? Fully document the initial problem the model was attempting to solve.

Produce Final Report

- Summarise the project and your experiences.
- Produce a final report (in PDF format) detailing all project steps, key findings, ethical implications and recommendations for improvement.
- Include all the previous deliverables and summary of the results.
- Consider ethical and privacy implications of deploying the model, as guided by CRISP-DM.
- Prepare a final demo and presentation of the data mining model and results.

Review Project

- Summarise important experiences made during the project (what went well, what could have been better, and what improvements can be made in the future)
- Discuss your overall learning experience (what have you learned, how relevant are the knowledge and skills gained from this project, how can the projects be handled in future)

Deliverables:

- Deployment and Maintenance Plan (in PDF or document format).
- Model deployment demo in a user-friendly interface (e.g. Shiny).

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Grading Criteria:

Criteria	Weight
Deployment Strategy	10
Deployment Tools Evaluation and Recommendations	10
Monitoring and Maintenance Strategy	10
Model Deployment using Chosen Deployment Tool(s)	15
Documentation (usage guide)	5
TOTAL	**50**

Additional Information

- This is a group assignment. Please continue with your project groups. Remember that a group must have at least 2 members but may not exceed four people.
- All work must be original. Copying another group's work will not be tolerated.
- Includes names of all group members on the Cover Page.
- Submit your project electronically on Moodle (BC Connect) before the due date.
- All writing must be correctly cited and referenced.
- **Plagiarism is a serious offence**. Belgium Campus uses software that can scan for plagiarism and a student caught doing this will get 0 for this assignment.
- No mark will be awarded if the assignment is not uploaded via BC Connect.
- Late assignments will not be accepted; missing the deadline is an automatic 0.