Course Project Final Report

Purpose

The purpose of the final report is to present the findings and insights gained from the analysis conducted to address the question posed by the customer. The report's audience is the team responsible for building and maintaining the application that the marketing department will use based on the findings. The final report serves as comprehensive documentation of the analysis conducted and the insights derived. Learners must communicate the findings in a clear and structured manner, making it easy for the development team to understand and implement the recommendations. Ultimately, this key deliverable not only summarizes the analysis conducted but also guides the implementation of actionable insights to support customer's marketing efforts effectively.

Directions

Write a report that describes the work that has been done to answer the question posed by UVW. The audience for your report is the "team" who will be in charge of building and maintaining the application that the marketing department will use based on your findings. Your Python code will be included in a separate PDF.

Note: Tasks such as building a prediction model, suggesting the marketing choices or decisions, or evaluating feasibility are **not** included in the grading criteria.

Your final report must follow these guidelines:

- **Minimum length**: four (4) pages
- **Maximum length**: six (6) pages
- **Format:** one (1) column format (IEEE)
  - Template reference:
    https://www.overleaf.com/latex/templates/one-column-ieee-journal-article/ykctxqgxptrs

Your report must include these sections:

- **Goals and a business objective:**
  - Define the most important goals and the objective.
- **Assumptions:**

- ○ Create a list of technical or business assumptions that you might have.
- **User Stories:**
  - ○ List **at least five (5) user stories** that you prioritized for the project.
  - ○ Stories and visualizations must include a minimum of **eight (8)** out of 14 attributes.
- **Visualizations:**
  - ○ There should be at **least one (1) visualization** for **each** user story.
  - ○ Explain what each visualization demonstrates and why you choose to create it.
  - ○ Describe all of the steps of the design process for each visualization.
  - ○ Write your conclusion about each visualization.
  - ○ Out of the **five (5)** stories and visualizations you select, **no more than two (2)** may be univariate (one attribute vs. income), and **at least three (3)** of the visualizations must be multivariate (at least two variables vs. income).
- **Questions:**
  - ○ Report the questions that arose during the project progression.
  - ○ Describe the solutions you implemented.
- **Not doing:**
  - ○ List the things that you are not doing now but plan on doing in the future. (Such a list will help the developers prioritize features.)

The visualizations that you create should be readable, appropriate, communicate the requested information effectively, and be pleasing to look at:

- **Appropriateness:**
  - ○ Use the right data for the attribute(s).
  - ○ Select the *best* visualization for the attribute(s).
    - ○ Note: Make your selection from the visualization types you have learned about so far.
  - ○ Include visual elements that are appropriate for the visualization (e.g., x-axis, y-axis, legend, etc.).
- **Effective communication:**
  - ○ Demonstrate which factors are related to income, and address the customer's question.
  - ○ Include all necessary visual elements needed to convey the information requested.
  - ○ Prioritize information that the customer will find useful to solve the business problem.
- **Style**:
  - ○ Follow visualization design principles outlined in the course.
  - ○ Ensure that your visual elements are readable (e.g., color, typeface).

Example User Stories:
- *User Story #1*: As a member of the UVW marketing team, I want to know if the age of an individual is a relevant factor in determining their income label.
- *User Story #2:* The marketing director is curious whether Age, Hours Per Week, and Capital Gain have any bearing on income.

Python Code:
- Your project will involve submitting (copy and paste) your Python code as a **separate PDF**.

Submission Directions for Deliverables

You are given a limited number of attempts to submit your best work. The number of attempts is given to anticipate any submission errors you may have in regards to properly submitting your best work within the deadline (e.g., accidentally submitting the wrong paper). It is not meant for you to receive multiple rounds of feedback and then one (1) final submission. Only your most recent submission will be assessed.

You must submit your Course Project Final Report deliverables in the appropriate submission space. Learners may not email or use other means to submit any assignment or project for review, including feedback, and grading.

The Course Project Final Report includes **two (2)** deliverables:
1. **Written Final Report:** Your Course Project Final Report must be a single PDF with the correct naming convention: *Your Name_CSE 578_Course Project Final Report*
2. **Python Code**: Your Course Project Python Code must be a single PDF with the correct naming convention: *Your Name_CSE 578_Course Project Python Code*

Evaluation

Please review the rubric for how your Course Project Final Report will be graded. Submissions will be evaluated based on each criterion and will receive a total score.

Submissions missing any part of the project will be graded based on what was submitted against the rubric criteria. Missing parts submitted after the deadline will **not** be graded.

Review the course syllabus for details regarding late penalties.

Rubric

Rubrics communicate specific criteria for evaluation. Prior to starting any graded coursework, learners are expected to read through the rubric, so they know how they will be assessed. You are encouraged to self-assess your responses and make informed revisions before submitting your final report. Engaging in this learning practice will support you in developing your best work.

Report Part 1: Report Information	Undeveloped or Missing	Developing	Proficient
Does the learner define the most important goals and the business objective?	Provided no submission, or most important goals or the objective are not defined.	Goals and an objective are defined, but they are unclear or not considered the most important.	The most important goals and an objective are defined, and they are clear and specific.
Does the learner provide a list of technical or business assumptions that they might have?	Provided no submission, or a list of technical or business assumptions is not given.	A list of technical or business assumptions is created, but it is unclear or shows minimal reflection.	A list of technical or business assumptions is created, and it is clear and shows reflection.
Does the learner list at least five (5) user stories?	Provided no submission, or there are zero (0) user stories listed or linked.	Between one (1) and four (4) user stories were listed or linked.	Five (5) user stories were listed or linked.
Does the learner include at least eight (8) out of 14 attributes?	Provided no submission, or less than eight (8) attributes are included.	At least eight (8) attributes are included, but their use in the user stories is unclear. No attributes are combined.	At least eight (8) attributes are included, and their use in the user stories is clear. Some attributes are combined.
Does the learner provide the visualization(s) for each user story?	Provided no submission, or there are no visualizations or the visualizations for each user story.	Visualization(s) for each user story are provided, but it is unclear, or only some visualizations are clear.	Visualization(s) for each user story has been created and is clear.
Does the learner explain what each visualization demonstrates and why they choose to create it?	Provided no submission, or what each visualization demonstrates and why it was created is not explained.	What each visualization demonstrates and why it was created is explained, but the explanation is unclear, some visualizations are not relevant, or only some visualizations are explained.	What each visualization demonstrates and why it was created is explained, the explanation is clear, and all visualizations are demonstrated to be relevant.
Does the learner describe all of the steps of the design process for each visualization?	Provided no submission, or the design process is not described for any visualization.	The design process for each visualization is described, but some steps are unclear or lack mastery, or the design process is described for only some visualizations.	The design process for each visualization is described, and the steps are clear and demonstrate mastery of the process.
Does the learner write their conclusion about each visualization?	Provided no submission, or conclusions about each visualization are not included, or are incorrect.	Conclusions for each visualization are included but they are unclear or not entirely reasonable, or conclusions are included for only some visualizations.	Conclusions for each visualization are included and are clear and reasonable.

Does the learner report the questions that arose during the project progression?	Provided no submission, or questions that arose during the project progression are not reported.	Questions that arose during the project progression are reported, but they are unclear or their impact is not fully considered.	Questions that arose during the project progression are reported, and they are clear and their impact is fully considered.
Does the learner describe the solutions they implemented to address the questions that arose?	Provided no submission, or solutions to address questions that arose are not implemented or described.	Solutions to address questions that arose are described, but they are unclear or inadequate to address the issue.	Solutions to address questions that arose are described, and they are clear and adequate to address the issue.
Does the learner list the things that they are not doing now but plan on doing in the future?	Provided no submission, or a list of future items is not included.	A list of future items is included, but it is unclear or leaves too much for later (i.e., demonstrates that not enough was done this time).	A list of future items is included, it is clear and leaves a reasonable number of tasks for later.
Report Part 2: Visualizations	**Undeveloped or Missing**	**Developing**	**Proficient**
Does the learner use the right data for the attribute(s)?	Provided no submission, or there are no visualizations, or the wrong data were used.	Visualizations use the right data, but the data are incomplete or include irrelevant or non-values.	Visualizations use the correct data. The sets are complete and were cleaned beforehand.
Has the learner selected the best visualization for the attribute(s)?	Provided no submission, or there are no visualizations, or visualizations are not an appropriate type for solving the problem, or are not appropriate for the data.	Visualizations are acceptable, but there are other choices that would have been better or more effective.	All visualizations are well selected for the attributes.
Does the learner include visual elements that are appropriate for the visualization?	Provided no submission, or there are no visualizations, or visualizations incorporate elements that are out of place or inappropriate for the choice of visualization.	Visualizations generally incorporate elements that are appropriate, but important elements or valuable information is missing.	Visualizations include elements that are appropriate, and all important elements and valuable information are present.
Does the learner demonstrate which factors are related to income, and address the customer ask?	Provided no submission, or there are no visualizations, or factors related to income are not demonstrated, and the customer ask is not addressed.	Visualizations demonstrate some factors related to income, but they are unclear, or the customer ask is not fully addressed.	Visualizations clearly demonstrate the factors related to income, and address the customer ask fully and effectively.
Does the learner include all necessary visual elements needed to convey the information requested?	Provided no submission, or there are no visualizations, or no visual elements were used to convey the information requested, or inappropriate elements were used.	Visualizations include most of the elements needed to convey the information requested, but valuable information is missing.	Visualizations include all of the elements that are needed to convey the information requested.

Does the learner prioritize information that the customer will find useful to solve the business problem?	Provided no submission, or there are no visualizations, or information is given that the customer will find distracting or is incorrect.	Information that the customer will find useful is given, but valuable information is missing or unclear, or supplemental information is given that is not valuable or does not aid understanding.	Information that the customer will find useful is prioritized, any supplemental information is valuable and aids understanding, and information is clear.
Does the learner follow visualization design principles outlined in the course? Are all elements readable and clear?	Provided no submission, or there are no visualizations, or design choices make the visualizations unreadable.	Visualizations generally follow design principles outlined in the course and are readable, but some visualizations violate design principles without good reason.	Visualizations follow design principles outlined in the course and are clear, readable, and meaningful.
Report Part 3: Professionalism	**Undeveloped or Missing**	**Developing**	**Proficient**
Does the paper follow guidelines? Is the report clear, professional, and free of typographical or grammatical errors?	Provided no submission, or paper does not follow guidelines, or report is consistently unclear, unprofessional, and has numerous typos and grammar errors. Most of the paper is lifted from other sources when reviewing plagiarism detection.	Paper follows guidelines. Report is generally clear and professional. There may be some typos or grammatical errors, but these do not cause meaning to be lost.	Paper follows guidelines. Report is clear and professional. Report has been proofread and has very few typos and grammatical errors.
Python Code	**Undeveloped or Missing**	**Developing**	**Proficient**
Does the learner provide their Python code in a separate PDF?	Provided no submission, or Python code is not provided.	Code is provided, but the code is not representative of the work done, or it is not provided in a separate PDF.	Code is provided in a separate PDF and is representative of the work done.