

Flex BSBA: Example Assessment Level Competencies and How They are Assessed

Program Level Competency 4 (PLC4): Apply information technology and research methods to improve organizational decision-making.

Example Assessment Level Competency for PLC 4: IS5 - Develop and communicate a plan for an E-Commerce system.

Outcomes: (1) Translate business requirements into functional requirements of the system
(2) List non-functional requirements of the system
(3) Construct prototype web pages using technology tools
(4) Articulate how the user can navigate between different webpages of the system

Examples Assessment: Volunteer Center of Utopia Project Scenario

Jeff McCoy is the project lead of a six-member team documenting requirements and project status documentation for an information system project at the Volunteer Center of Utopia (VCU). Jeff, the information systems team, and the client needed to make some important decisions concerning the future of the project. Jeff needed to formulate his own opinion, but it was getting late. He promised his fiancé that they would see a movie at the new cinema tonight. Recently, his promises have gone unfulfilled.

Up to this point, the VCU project had progressed smoothly. The focus of the project was the development of an application that helped the VCU place and track volunteers at various volunteer opportunities. The development team used the activity diagrams and use cases to document the requirements of the system. A Gantt chart and a standardized project status report were used to record progress. The project status report contained fields to record the time, budget, people, process, and technology status of the project.

Jeff and the other development team members are consultants hired by the VCU staff. Jeff wondered if they had captured all of the key requirements and had accounted for these requirements in the project plan. One of the key requirements was to track the volunteers, their demographics, their hours, and the places where they are assigned to volunteer by VCU.

Volunteer placement and tracking was not the only need of the VCU. Marilyn Freeman, the Executive Director and the primary contact at the VCU, also needed a system to track donors and expenses. One of the key requirements is that the system should be web based. The web-based system should enable VCU staff to enter volunteer information, place them at different clients for volunteering based on their interests, track their hours, enable donors to donate using the web-based system, and automatically send donation letters to the donors. All these features were part of the original project scope.

The options in front of the project team were to: (i) invest in a custom-developed solution where the system will be developed by Jeff and the project team; (ii) purchase an off-the-shelf package where no customization is required; or (iii) purchase an off-the-shelf package where some customization is required. Jeff and the project team needed to recommend a particular approach. Finally, a problem emerged recently regarding the ability of the computer infrastructure at VCU to support the new web-based system. This problem must be solved before any solution is implemented—perhaps by upgrading the infrastructure.

Client Mission and Organization

The Volunteer Center of Utopia (VCU) is a not-for-profit organization located in Utopia, Wisconsin, a city with a population of 125,000. VCU grew rapidly to list and coordinate thousands of volunteers. It currently has 7,000 active volunteers. An active volunteer is one who has volunteered with VCU in the past 12 months. VCU finds volunteers and places these volunteers at various community events. The community events range from blood donation drives at hospitals to fundraising ceremonies for causes such as leukemia research. Programs and services offered by VCU include the following:

1. **Retired & Senior Volunteer Program (RSVP).** This program involves adults 55 and over. Volunteers use their life experiences and skills to help make the community stronger. These volunteers commonly work with children and adults.
2. **Youth with a Mission.** This program serves several local organizations, such as community centers, medical facilities, faith-based organizations, and schools. Volunteers who work in such programs are primarily from the youth population. The program strives to show how the power of community service can make a profound difference in the lives of community members and volunteers alike.

3. **Special Projects.** This program provides one-time volunteer opportunities for individuals, co-workers, families, or youth. Example projects include Earth Day, Make a Difference Day, and walks to collect food to feed the poor and the hungry.
4. **Volunteer Recruitment.** VCU recruits volunteers and matches their interests, skills, and availabilities to a list of volunteer opportunities from local not-for-profit agencies, organizations, and schools in need of support.
5. **Volunteer Training.** VCU provides quarterly training meetings for volunteer coordinators of not-for-profit groups and organizations.

VCU receives its funding primarily from federal/state grants, private companies, and individual donors. Its annual budget is approximately \$878,000. Federal and state grants account for 55% of the budget. Corporate and private donations account for 27% and 18% of the budget, respectively. The \$878,000 annual budget is allocated to current employees, facilities, and programs. Additional expenditures, including funding for IT, can only be funded through new grants and donations. For the proposed web-based system, VCU already obtained funding through a combination of donations from corporations and private donors.

VCU's staff includes Executive Director Marilyn Freeman. Reporting to Marilyn are Cheryl Anderson, Volunteer Coordinator; Martin Johansen, Special Events Coordinator; and Rajesh Mulani, Marketing Coordinator. In addition, three support staff report to Rajesh. Marilyn reports to a board of directors that consists of seven community members with staggered three-year terms. The current board chairperson, George Morrison, has been on the board for two years but just started his role as chair.

VCU is eager to improve its operations. VCU staff regularly met with Jeff and the project team to provide the needed information for the project. The board has approved of the project and its funding, which has been secured for the purposes of developing a web-based solution to place and track volunteers as well as to track donors, donations, and expenses. However, they are not well versed in the details of the project.

Project Team

The IS project team is comprised of Jeff McCoy, Lyndsay Nash, Rick Harrington, Judy Taft, Bob Ferguson, and Zoya Rehman. The project team has an extensive amount of experience in building web-based e-commerce systems. In terms of capabilities, Jeff is skilled in project management, system analysis, system design, database development, and client-server programming. Lyndsay is skilled in project management, system analysis, and systems documentation. Rick is very comfortable with database development and e-commerce programming. Bob has expertise in implementation, troubleshooting, and network design. Zoya has expertise in project documentation, database design, and both client-server and web programming. Judy is skilled at system analysis and design.

The project team from VCU is primarily comprised of Marilyn Freeman and Cheryl Anderson. Marilyn understands the high-level overview of the VCU operations, while Cheryl knows in detail the inner-workings of the current systems and paper-based processes at VCU.

Project Initiation

Early in the project cycle, Jeff and his project team met with Marilyn and others from VCU to initiate the project. The project team documented the following high-level requirements for the VCU information system.

- **(R1)** Maintain volunteers and their information.
- **(R2)** Maintain stations (places) at which volunteers volunteer their time and the activities of the volunteers.
- **(R3)** Maintain information on the donors to the VCU and their donations.
- **(R4)** Generate reports for volunteer center management and donors, which may include government agencies and private foundations.
- **(R5)** Maintain and track expenses and budget.
- **(R6)** Need to convert/transform current data into the new system once the new system is built.

Overview

For this assessment, you will want to be able to:

1. Develop a detailed document of the requirements of the e-commerce website.
2. Design an e-commerce website for a given project scenario.

- **Point Value:** 100 points
- **Min. Required Score:** 80%
- **Allowed Attempts:** 2
- **Grading Time:** 3 days

Directions

The folks at VCU helped develop high-level requirements for their web-based system, and they are eager to see that system put into action. You have been assigned the task of turning their high-level requirements into a basic prototype.

However, this is a challenge. Their high-level requirements are simply general statements about what the system should be able to do. As such, their requirements aren't detailed enough to spell out exactly *how* the system should look or behave. The high-level requirements will need to be broken down into more specific and detailed functional and non-functional requirements.

In this assessment, you will need to accomplish the following three complimentary tasks:

1. Expand on the high-level requirements (R1) through (R6).
2. Develop a basic prototype of the website.
3. Clearly indicate the navigation of the system.

The three tasks are described in more detail below. Each task lists a sequence of steps to complete it.

Here's a hint: the three tasks are related, and work you do in one task might inform work you do for another task. For that reason, you may find it easier to work on all three tasks in parallel.

Expand on Requirements

A requirement is simply a statement of what the system must do or what characteristics it must have. Expanding on the high-level requirements means breaking them down into specific and testable functional and non-functional requirements.

Step 1: Download the [Requirements Template](#) .

Step 2: Review the high-level requirements (R1) through (R6). It might be helpful to also review the VCU project scenario.

Step 3: Break down the high-level requirements into specific and testable functional and non-functional requirements. By the time you finish documenting the requirements, it is anticipated that you will have a minimum of 25 specific functional and non-functional requirements. Specific requirements avoid ambiguity. For example, a requirement such as "The website will enable users to search the company's products in multiple ways" is not a specific requirement. Instead, rewriting it as follows would yield a specific requirement: "The website will enable users to search the company's products by text description, keywords, price range, and product type."

For additional guidance on writing requirements, see the practice activity in this module.

Develop a prototype of the website

Your prototype should focus on the functionality of the website (e.g., required elements and navigation) and not on aesthetics (images or color schemes). For that reason, you might consider using a wireframe approach to building your prototype.

We are not looking for an exact or precise technical solution, and your prototype does not need to strictly adhere to any prototyping standards. Instead, we are looking for your thought process as demonstrated in the prototype.

Step 1: Review learning resources on how to create a prototype.

Step 2: Choose which software tool you will use to develop the prototype. You have the choice of using Microsoft PowerPoint,

[Lucidchart \(Links to an external site.\)](#) , or [WordPress.com \(Links to an external site.\)](#).

Step 3: Use the system requirements to design a user interface for the VCU web-based system. Make sure your prototype accounts for all requirements listed. Clearly indicate the navigation of the system

Once your prototype is built, use it to indicate the navigation of the system. When the user selects a menu item or clicks on a button or link on the webpage, how does the navigation work? What page will the user visit as a result of their interaction with the webpage? If the prototype automatically leads to another page as a result of clicking on a button or link, you do not have to describe the clickable element. For items where the prototype is not completely built, but indicates that the click leads to another page, be sure to describe such clickable elements and the landing pages where users will be taken to.

Format

Task 1: Expand on the high-level requirements (R1) through (R6)

- Submit this portion of your assessment as a .doc or .docx (Microsoft Word) file.
- Use 12-point font.
- Include a minimum of 25 specific functional and non-functional requirements.

Task 2: Develop a basic prototype of the website

- Submit this portion of your assessment in one of the following formats:
 - If using Microsoft PowerPoint, submit a .ppt or .pptx file.
 - If using Lucidchart, publish the “Full Document (PDF)” and submit that PDF to the Dropbox. [See instructions here \(Links to an external site.\)](#).
 - If using WordPress.com, export your course to a zipped folder ([see instructions here \(Links to an external site.\)](#)), then submit that zipped folder. You may include the URL (i.e., web address) of your WordPress.com webpage in the comments field of the submission or along with the requirements document (or, for good measure, you can include the URL in both places). Be sure to submit the URL of your *published* WordPress webpage.

Task 3: Clearly indicate the navigation of the system

- This task may be accomplished by including working hyperlinks in your prototype or by providing text descriptions of clickable elements. If you have text descriptions, you may include them in the prototype or along with your requirements document.

Evaluation

A rubric for this assignment is located below the instructions. As a final step in this assessment, check your work against the rubric to ensure you have met all the requirements to successfully demonstrate mastery.

Submission

You are encouraged to submit assessments as you complete them. Feedback provided by your instructor is often helpful as you complete future assessments. Please know, if you choose to submit multiple assessments at the same time, you may experience a delay in grading turnaround time.

Develop System Requirements & Prototype Rubric

Develop System Requirements & Prototype Rubric				
Criteria	Ratings			Pts
This criterion is linked to a Learning Outcome Expand on Requirements	45.0 pts Completely Meets Expectations	36.0 pts Meets Expectations Uncovers at least 25 functional and non-functional requirements	11.0 pts Does Not Meet Expectations Uncovers fewer than 25 functional and non-functional	45.0 pts

Develop System Requirements & Prototype Rubric

Criteria	Ratings			Pts
This criterion is linked to a Learning Outcome Develop a Basic Prototype	Uncovers more than 25 functional and non-functional requirements (in addition to the 6 high-level requirements). Each requirement is succinct, clearly written, specific, and supports its parent requirement. (41–45 points)	(in addition to the 6 high-level requirements). Requirements are, for the most part, succinct, clearly written, specific, and support parent requirements. (36–40 points)	requirements (in addition to the 6 high-level requirements). Requirements lack clarity, are too vague to be useful, and/or do not support parent requirements. (0–35 points)	45.0 pts
	45.0 pts Completely Meets Expectations All requirements are accounted for in the prototype. The prototype is a visual representation of the systems user interface that allows stakeholders to see how the system works. (41–45 points)	36.0 pts Meets Expectations At least 90% of requirements are accounted for in the prototype. The prototype is, for the most part, a visual representation of the systems user interface that allows stakeholders to see how the system works. (36–40 points)	11.0 pts Does Not Meet Expectations Less than 90% of requirements are accounted for in the prototype. The prototype fails to visually represent the systems user interface. It is unclear how the system will work. (0–35 points)	
This criterion is linked to a Learning Outcome Navigation is Clearly Indicated	10.0 pts Completely Meets Expectations The prototype has clearly marked navigation that leads the user from page to page or, where the prototype is not completely built in terms of clickable links, an accompanying Word document describes the navigation aspects. (9–10 points)	8.0 pts Meets Expectations At least 90% of the prototypes navigation is clearly marked and leads the user from page to page or, where the prototype is not completely built in terms of clickable links, an accompanying Word document describes at least 90% of the navigation aspects. (8 points)	3.0 pts Does Not Meet Expectations Less than 90% of the prototypes navigation is clearly marked and leads the user from page to page or, where the prototype is not completely built in terms of clickable links, an accompanying Word document describes less than 90% of the navigation aspects. (0–7 points)	10.0 pts
	5.0 pts Mastery with Distinction	3.0 pts Mastery	0.0 pts Not Yet Mastered	
This criterion is linked to a Learning Outcome IS_05 view longer description threshold: 3.0 pts				--

Example Assessment Level Competency for PLC 4: IS2 - Develop and communicate a plan for an E-Commerce system.

- Outcomes: (1) Design a database for a given business scenario
 (2) Implement database tables and relationships
 (3) Develop database queries to retrieve data relevant for business questions
 (4) Construct reports in the database
 (5) Utilize database to help address questions/answers to guide business decisions.

Simply Credit Card Project Scenario

You have recently been hired as an IT manager at Simply Credit Card Company. This company issues credit cards for customers, and customers use the credit cards at various stores. Simply Credit Card Company already has a database system; however, the database was designed about 20 years ago and has multiple issues. One of the issues is that the data is not normalized, and parts of the data have been replicated in multiple tables. One of your initial assignments, a high priority one, is to redesign the database and eliminate the issue of replication. The company’s CIO, Jim Miller, has personally entrusted you with this project. In order to

establish a new database, you came up with a preliminary database design. You want to construct a prototype of your database design using either Microsoft Access or LibreOffice Base before you present the design to your team members.

Your database needs to keep track of customers, credit card details, sales that were made using the credit cards, and the merchants with whom the sales were placed. You arrived at the tables listed below for this scenario. You have also indicated the primary key and foreign key (where applicable) in each table.

Part I: Working with Data

In this assessment, you will fill database tables with sample data. You will be given a Database Table Template with which to work, and you will submit your assessment as a Microsoft Word document.

Step 1: Download the [Database Table Template](#).

Step 2: In the same Word document, indicate the data type that you will use for each column (i.e., field or attribute) in the table. Check the Learning Resources page associated with this assessment for more information about data types.

Step 3: Fill out the tables in the template with sample data. You need to make up sample data for each table. Indicate the sample data for each table beginning in row 2. Add sample data of four rows for the CUSTOMER table, six rows for the CREDIT_CARD_ACCOUNT table, three rows for the MERCHANT table, and ten rows for the SALE table.

Part II: Building Tables

In this assessment, you will construct database tables and relationships, and you will populate that database with data.

Step 1: If you have not already done so, you will need to acquire the database management software that is required for this project. Microsoft Access and LibreOffice Base are both approved for this IS 305 project. Check the Technical Requirements page of the Orientation module to learn more about acquiring the required software.

Step 2: Open your database management software. Save a new database, and give it a title (e.g., infosys305).

Step 3: Using your database management software, create the following tables: CUSTOMER table, CREDIT_CARD_ACCOUNT table, MERCHANT table, and SALE table **in that order**. Use the data types from Phase I to define each field in each table.

Step 4: Create the Primary Key - Foreign Key (PK-FK) relationships among tables.

Step 5: Enter data into the four tables. Add sample data of 20 rows for the CUSTOMER table, 30 rows for the CREDIT_CARD_ACCOUNT table, 15 rows for the MERCHANT table, and 60 rows for the SALE table.

Criteria	Ratings			Pts
This criterion is linked to a Learning Outcome Database Tables Created	33.3 pts	27.0 pts	8.0 pts	33.3 pts
	Completely Meets Expectations	Meets Expectations	Does Not Meet Expectations	
This criterion is linked to a Learning Outcome	All 4 tables are created in the database software. Data types are correctly defined for each field/column.	All 4 tables are created in the database software. At least 90% of data types are correctly defined for each field/column.	All 4 tables are not created in the database software. Less than 90% of data types are correctly defined for each field/column.	33.3 pts
	33.3 pts	27.0 pts	8.0 pts	
		Meets Expectations	Does Not Meet Expectations	

Criteria		Ratings		Pts
Primary & Foreign Key Relationships Present	Completely Meets Expectations	Primary keys (PK) are correctly created in at least 90% of the tables. Foreign keys (FK) are correctly created in at least 90% of the tables. PK-FK relationships are correctly constructed among at least 90% of the tables.	Primary keys (PK) are correctly created in less than 90% of the tables. Foreign keys (FK) are correctly created in less than 90% of the tables. PK-FK relationships are correctly constructed among less than 90% of the tables.	
	33.4 pts	27.0 pts	8.0 pts	
This criterion is linked to a Learning Outcome Tables Populated with Data	Completely Meets Expectations	Meets Expectations	Does Not Meet Expectations	33.4 pts
	All data required by the assessment is present.	At least 90% of data required by the assessment is present.	Less than 90% of data required by the assessment is present.	

Part III: Constructing Queries

In this assessment, you will create queries and retrieve data in Microsoft Access. Create queries that work so that the results are displayed as described in steps 1 through 10 below. Make sure that you save each query using the suggested name. Don't include columns that are not necessary, and don't include a table in the query unless it is needed (e.g., if you need one or more columns from that table in the results or the table is needed to complete a relationship).

- Show SaleID, MName, CreditCardNumber, SaleDate, and TotalSaleAmount. The results should be sorted by MName (ascending). Name the query *MName-Ascending*.
- Show SaleID, MName, CreditCardNumber, CName, SaleDate, and TotalSaleAmount. The results should be sorted by CName (ascending). Name the query *CName-Ascending*.
- Show SaleID, MName, MType, CreditCardNumber, CName, CZip, SaleDate, and TotalSaleAmount, and sort them by the TotalSaleAmount in descending order. Name the query *TotalSaleAmount-Descending*.
- Show the sales, and sort them by the customer's zip code (CZip) in ascending order. Your query should show the following fields: SaleID, MName, MType, CreditCardNumber, CName, CZip, SaleDate, and TotalSaleAmount. Name the query *Sales-CZip*.
- Show the total sales amounts (TotalSaleAmount) by customer, and order them by the customer name (CName). Your query should show the customer name and the total amount of sales for each customer. You will need to use the Group By and Sum features in constructing the query. To find the Group By and Sum features, click the Design tab and then Totals.
Include all tables in your query that are needed for the relationship connection. If your query is running correctly, the number of results will be the number of distinct customers that are present in the SALE table. Name the query *TotalSalesByCustomer-CName*.
- Show the total sales by merchant, and order them by the merchant name (MName). Your query should show the merchant name and the total amount of sales for each merchant. You need to use the Group By and Sum features in constructing the query. If your query is running correctly, the number of results will be the number of distinct merchants that are present in the SALE table. Name the query *TotalSalesByMerchant-MName*.
- Show the total sales by credit card number, and order them by the credit card number (CreditCardNumber). Your query should show the credit card number and the total amount of sales for each credit card number. You need to use the Group By and Sum features in constructing the query. If your query is running correctly, the number of results will be the number of distinct credit card numbers that are present in the SALE table. Name the query *TotalSalesByCreditCardNumber-CreditCardNumber*.

To construct queries for steps 8 through 10, you must setup the query to limit the number of returns. To do that, click the Design tab, then specify the number of desired returns in the Query Setup area.

- Retrieve the top three sales by customer name. This query is similar to query 5 above except that you only need to get the customers with the top three total sale amounts. Name this query *SalesByCustomerName-Top3*.

9. Retrieve the top three sales by merchant name. This query is similar to query 6 above except that you only need to get the merchants with the top three total sale amounts. Name this query *SalesByMerchantName-Top3*.
10. Retrieve the top three sales by credit card number. This query is similar to query 7 above except that you only need to get the credit card numbers with three top three total sale amounts. Name the query *SalesByCreditCardNumber-Top3*.

Criteria	20.0 pts	16.0 pts	5.0 pts	Pts
This criterion is linked to a Learning Outcome Queries Retrieve Desired Data	Completely Meets Expectations Queries retrieve all of the desired data. (20–18 points)	Meets Expectations Queries retrieve at least 90% of the desired data. (17–16 points)	Does Not Meet Expectations Queries retrieve less than 90% of the desired data.	20.0 pts
This criterion is linked to a Learning Outcome Queries retrieve data in the desired order	Completely Meets Expectations Queries retrieve all data in the desired order. (20–18 points)	Meets Expectations Queries retrieve at least 90% of data in the desired order. (17–16 points)	Does Not Meet Expectations Queries retrieve less than 90% of data in the desired order.	20.0 pts
This criterion is linked to a Learning Outcome Queries retrieve data sorted according to the desired filters	Completely Meets Expectations Queries retrieve all data sorted according to the desired filters. (20–18 points)	Meets Expectations Queries retrieve at least 90% of data sorted according to the desired filters. (17–16 points)	Does Not Meet Expectations Queries retrieve less than 90% of data sorted according to the desired filters.	20.0 pts
This criterion is linked to a Learning Outcome When applicable, queries make appropriate use of the Group By (Summation) feature	Completely Meets Expectations When applicable, queries make appropriate use of the Group By (Summation) feature. (20–18 points)	Meets Expectations When applicable, 90% of queries make appropriate use of the Group By (Summation) feature. (17–16 points)	Does Not Meet Expectations When applicable, less than 90% of queries make appropriate use of the Group By (Summation) feature.	20.0 pts
This criterion is linked to a Learning Outcome When applicable, queries make appropriate use of the “Top Values” property	Completely Meets Expectations When applicable, queries make appropriate use of the Top Values property. (20–18 points)	Meets Expectations When applicable, at least 90% of queries make appropriate use of the Top Values property. (17–16 points)	Does Not Meet Expectations When applicable, less than 90% of queries make appropriate use of the Top Values property.	20.0 pts

Part IV: Constructing Reports

In this assessment, you will define reports in Microsoft Access for the queries you created in the previous Create Database Queries assessment.

Define a report for each of the queries in the Create Database Queries assessment. Give each report a meaningful title to describe in business terms what is shown in the report. Modify the column headers as needed so that there are spaces between words (or abbreviations) used in the column names. By default, the report uses the table’s column names as column headers. These aren’t always stated in business terms, and renaming the columns in this way makes the report more readable. The data should be sorted the same way in the results of the reports and should include all the columns included in the query.

For instructions on how to define reports in Microsoft Access, please check the Learning Resources page in this module.

Criteria		Ratings		Pts
This criterion is linked to a Learning Outcome Reports Display Data Accurately	33.3 pts	27.0 pts	8.0 pts	33.3 pts
	Completely Meets Expectations Reports display the data accurately (correct data/columns, correct sorting, correct summation/group by).	Meets Expectations Reports display the data at least 90% accurately(correct data/columns, correct sorting, correct summation/group by).	Does Not Meet Expectations Reports display the data less than 90% accurately(correct data/columns, correct sorting, correct summation/group by).	
This criterion is linked to a Learning Outcome Reports are Readable	33.3 pts	27.0 pts	8.0 pts	33.3 pts
	Completely Meets Expectations Reports are easily readable. For example, there are appropriate spaces between the words (or abbreviations) used in the column names.	Meets Expectations Reports are mostly readable, but may lack clarity in places.	Does Not Meet Expectations Reports are not easily readable. For example,the reports may lack spaces between the words (or abbreviations) used in the column names.	
This criterion is linked to a Learning Outcome Reports Connect to Queries	33.4 pts	27.0 pts	8.0 pts	33.4 pts
	Completely Meets Expectations Reports make explicit connections to the queries from which they are constructed.	Meets Expectations 90% of reports make explicit connections to the queries from which they are constructed.	Does Not Meet Expectations Less than 90% of reports make explicit connections to the queries from which they are constructed.	

Part V: Questions to Answer Using the Database

The CIO of Simply Credit Card Company wants to use your database to make decisions about the following questions. Some of these are open-ended questions. If you do not find answers through a single query, it is fine to export the results from multiple queries into a spreadsheet and then use the spreadsheet to answer the questions (if using a spreadsheet, please submit it along with your MS Word document and database file).

1. What percentage of our total credit card sales is each merchant responsible for? In other words, how do sales break down percentage-wise among merchants? For example:
Merchant A = 40%
Merchant B = 25%
Merchant C = 25%
Merchant D = 10%
2. What are the total amounts of sales (for our credit cards) for Online Merchants vs Physical Store Merchants? What percentages do they translate to? I want to find out whether we need to focus our efforts on marketing to customers who shop online or those who shop in physical stores.
3. What is the percentage sale amounts by customer zip codes for our credit cards? I would like to know from which zip codes (by customer) we have most sales. This may help us use targeted advertising in those zip codes.
4. If we can look at how much individual customers spend compared to how much they earn, it might help us learn how financially “stressed” our customers are. One way to do this comparison is to compute the difference between the annual incomes of our customers and the total sale amounts of our customers.
5. Which customers used our credit cards the least? Understanding who our least productive customers are will help us make strategic decisions, e.g., whether to drop them or lure them with better rewards to spend more. Review the customer total sales by annual income range (you can define the ranges of income), by state, and by zip code. Discuss whether there is enough evidence to make an executive decision (such as discontinuing customers) in a specific income range, state, or zip code.

In 1,000 words, write a report with detailed answers to these questions, including explanations of how you arrived at the answers using the database you constructed. Your report should use 12-point font with clearly marked sections and 1-inch margins.

Criteria		Ratings		Pts
This criterion is linked to a Learning Outcome Queries are formulated correctly	30.0 pts Completely Meets Expectations All queries are formulated correctly and are reasonable given the project scenario (as determined by the faculty).	24.0 pts Meets Expectations At least 80% of queries are formulated correctly and make sense given the project scenario (as determined by the faculty).	8.0 pts Does Not Meet Expectations Less than 80% of the queries are formulated correctly or make sense given the project scenario (as determined by the faculty).	30.0 pts
This criterion is linked to a Learning Outcome Answers to business questions are correct and/or reasonable	25.0 pts Completely Meets Expectations All answers to business questions are correct and/or reasonable. Query results are correctly interpreted.	20.0 pts Meets Expectations At least 80% of answers to business questions are correct and/or reasonable. Approximately 80% of query results are correctly interpreted.	6.0 pts Does Not Meet Expectations Less than 80% of answers to business questions are correct and/or reasonable. Less than 80% of query results are correctly interpreted.	25.0 pts
This criterion is linked to a Learning Outcome Conclusions are justified	20.0 pts Completely Meets Expectations All business answers are reasonably explained and/or justified by reference to database results.	16.0 pts Meets Expectations Approximately 80% of business answers are reasonably explained and/or justified by reference to database results.	5.0 pts Does Not Meet Expectations Less than 80% of business answers are reasonably explained and/or justified by reference to database results.	20.0 pts
This criterion is linked to a Learning Outcome Assessment requirements are met	15.0 pts Completely Meets Expectations Assessment requirements are met. For example, the essay is at least 1,000 words, addresses all questions, and uses 12-point, double-spaced text.	12.0 pts Meets Expectations Assessment requirements are at least 90% met (as determined by the faculty).	4.0 pts Does Not Meet Expectations Assessment requirements are less than 90% met (as determined by the faculty).	15.0 pts
This criterion is linked to a Learning Outcome Writing conveys professionalism	10.0 pts Completely Meets Expectations Writing conveys professionalism. For example, the writing is free of grammatical errors and is written in professional/non-conversational language.	8.0 pts Meets Expectations Writing mostly conveys professionalism. The writing may have minor grammatical errors, or at times is written in an informal style.	3.0 pts Does Not Meet Expectations Writing does not convey professionalism. For example, the writing may contain serious grammatical errors or it may be written in a style that is too informal.	10.0 pts