

**Due Date/Time:** Check Canvas Assignments for the due date/time for your section!

### Objective and Background:

The purpose of this assignment is to give you experience using a range of software productivity tools to address a realistic business task. The task is to create a visual layout for a retail display area. You will use **Microsoft Access** to get sales information for a range of products, **Microsoft Excel** to calculate the profitability of each product, and **Microsoft Visio** to create a layout for the products given a fixed amount of display space. Finally, you will use **Microsoft Word** to bring all the elements of your analysis together into a coherent and professional report.

Any retail business must display goods in order to sell them. The art in developing effective retail management is utilizing the space in the store in order to display items that provide the largest contribution to overall profit. Retailers attempt to draw maximum attention to their most profitable products.

Profitability is a function of the total profit earned on the sale of each item and the number sold. Thus, high-price, high-margin products may be profitable even if they do not account for the largest number of items sold. Conversely, low-price, low-margin products may be profitable if the products achieve high sales volumes. An effective retail manager must not only be good at choosing profitable items, he or she must also be creative in displaying these goods as an understandable theme so that customers want to buy the goods. The most effective retail managers therefore carefully balance profitability and display design.

### Scenario:

You are an associate manager at **Grende**, a large Scandinavian retail store specializing in products for the workplace. Grende is going to put all of the items in the store on sale. You have been given the job of creating a display for a collection of items of your own choosing for the sale. Your job is first to choose which items provided in the inventory you want to sell. Once you have chosen the items, you need to position them so that they fit into the retail display area provided. The dimensions of the display area are provided in **Figure 1**. Some notes about organizing this space are also provided.

### Directions:

Your job is to analyze the gross margin of a collection of goods to maximize potential profit contribution. The trick is that there is a limited space to display the goods, so not all of the goods available can (or should) be chosen. Profit contribution is measured as sales **quantity \* price \* gross margin percent**. There must be exactly **13 different products (including at least one item from each category)** displayed in order to draw the interest of consumers. You are also responsible for developing a **workplace theme** that ties the various goods together into a coherent display (see **Figure 2** for an example).

You should consider three things when making the choice of your items:

- 1) The **contribution** of the item to overall profitability of the space.
- 2) The **size dimensions** of the items.
- 3) The functionality of the space and how the item fits into the **workplace theme**.

***Determining the Historical Sales of Each Product:***

The collection of items is provided in the **MS Access** inventory database (*Grende\_Inventory*) containing two tables: *Products* and *Sales*.

The **Products** table contains information about items available for sale. The **Product\_ID** code reflects the **Category** of the inventory item (**100** = desks & tables, **200** = chairs, **300** = storage & shelves, **400** = boxes, **500** = lamps, **600** = vases, **700** = decoration, **800** = rugs, **900** = beds). The table also includes product's physical dimensions (in centimeters), selling **price**, and **gross margin** (expressed in percent).

The **Sales** table provides the sales quantity (in number of units sold) by date and retail outlet — you should estimate sales volume using this data.

- Use the **query** feature in Access to **join** the tables and **calculate aggregate sales** for each product. Do not worry about the location of the sales—you are interested in **total sales** only.
- You are running the sale in the end of **Summer**. Given the seasonality of some of the products, you should look at sales from the start of **May** to the end of **August** time frame only. Moreover, since customers' preferences change over time, you should consider only the **most recent year's** sales.

***Calculating the Retailing Contribution of Each Product:***

The boss has asked you to select the products for the retail display based on their potential profit contribution. For this purpose, you must create **MS Excel** spreadsheet showing your method for analyzing the profit of each product.

- Export the results of your historical sales query into Excel **table** and **calculate the profit** contribution.
  - Use **sort** feature to rank the list of products in terms of contribution (highest profit at the top).
  - **ONLY** keep the records about the products you want to display in the store – **remove** the rest of the items from the sheet.
  - Use **conditional formatting** to visually highlight the profit amounts.
  - **Summarize** the sales and profits and calculate the projected **gross margin** for all selected products.
- Create an appropriate **chart** in Excel that shows the amount of profit generated by each product.
  - Use **data labels** to highlight the markers on the chart so you know which marker belongs to which product.

An example of how your spreadsheet **might** be organized is provided below:

Item ID	Item	Price	Quantity	Gross Margin	Sale	Profit
Item E	Table	\$ 16.95	80	66%	\$ 1,356.00	\$ 894.96
Item A	Chair	\$ 19.95	45	52%	897.75	466.83
Item B	Rug	\$ 3.50	130	46%	455.00	209.30
Item F	Sofa	\$ 5.00	60	30%	300.00	90.00
Item D	Shelf	\$ 9.95	12	47%	119.40	56.12
Item C	Bowl	\$ 9.95	10	56%	99.50	55.72
<b>Totals</b>					<b>\$ 3,227.65</b>	<b>\$ 1,772.93</b>
<b>Overall GM</b>					<b>54.93%</b>	

**NOTE: DO NOT SIMPLY COPY THE ABOVE EXAMPLE!**

**Creating a Retail Display Diagram:**

Finally, you should use a general-purpose graphics tool like **MS Visio** or **diagrams.net** <https://app.diagrams.net/> to create a retail display diagram.

- Use the selected graphics tool to map out the **layout** of the retail display area. Your diagram should give a precise indication of how the space is used. Make sure to **label** each product.
- You should have no product extending beyond the boundaries of the displayed area as defined in Figure 1.
- In Visio, you can use **Basic Shapes** to draw simple shapes (e.g., circles, squares, etc.) and label them as your items. You can also use predefined **Office Layout** shapes in Visio (e.g., office accessories, equipment, and furniture). If you are using the Diagrams.net, you can use **General** to draw simple shapes and label them as your items or the predefined objects under **Floorplans**.

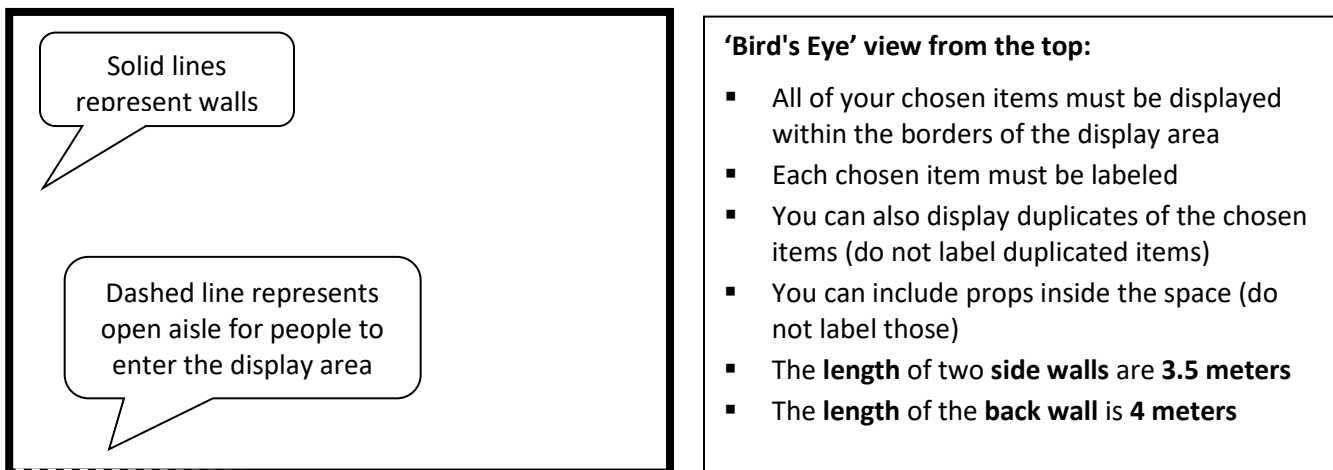


Figure 1: Retail Display Area

**With shapes placed on the Visio canvas:**

- **Set item dimensions** by right-clicking on the shape and selecting **View > Size & Position Window**. Make sure you use proper units (cm = centimeters) for dimensions.

In this window you can specify the exact measures for each item (to match the items measurements stated in the database). Since we are looking at the display from the top, you should use the **Width** and **Depth** dimensions from the **Products** table to set the **Width** and **Height** (the **depth** dimension of the object becomes **height** dimension if you are viewing that object from the top) values in Visio.

- **Label the items** by double-clicking on shape and typing the item's label (e.g., product name)

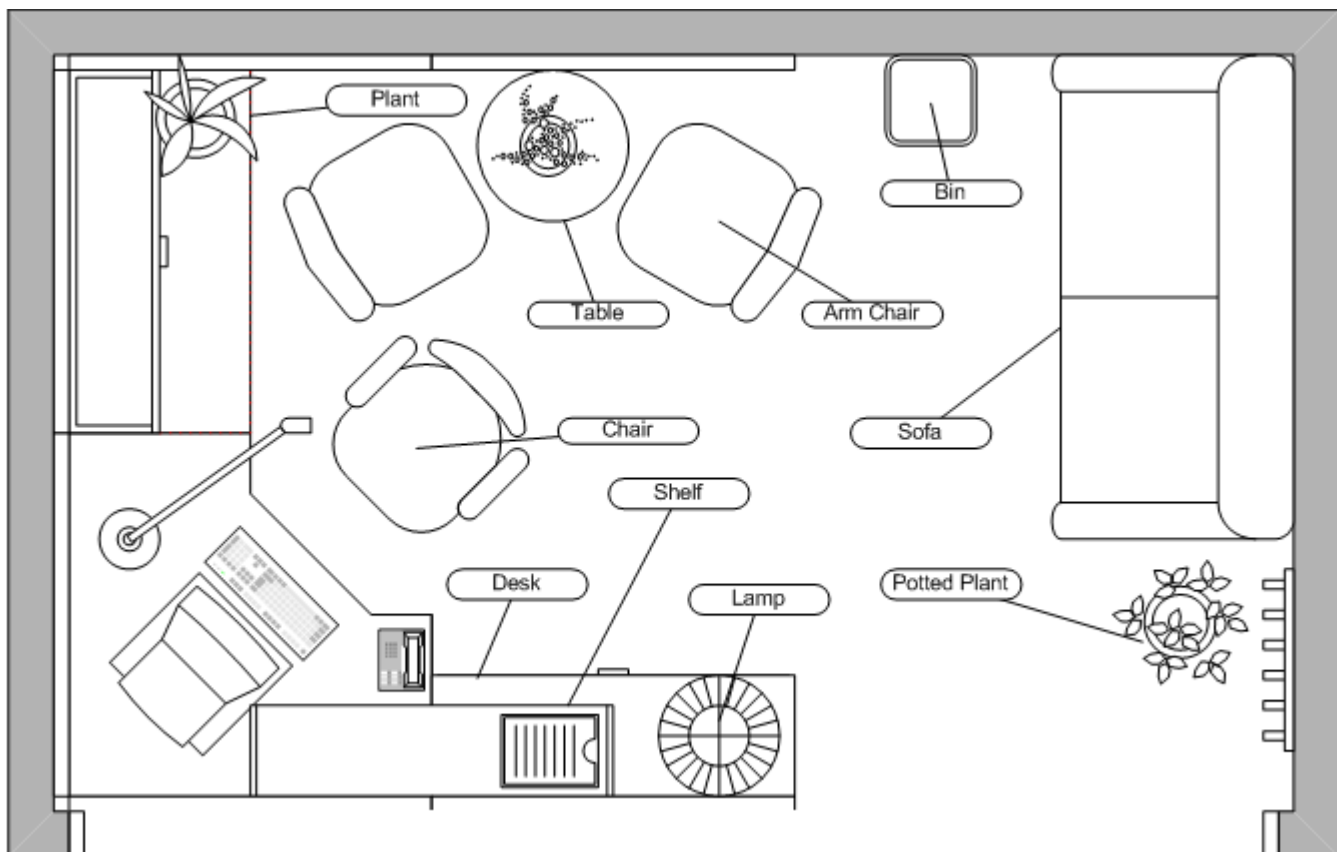
There are other ways to label your items, such as using the color legend, text labels, etc. You can also color the items and use a legend to better display the stacked items. Click on each item and from the main menu select **Format > Fill** then select a **Color** (you can also use a toolbar).

- **You can include props** (e.g., computer, telephone, etc.) These items are not in your inventory, and are not for sale; just use them as decoration that fits within the workplace theme. Do not label the prop items!
- See an example of workplace diagram in Figure 2. This is example only; it does not match assignment requirements.
- If you do not know how to do something in Visio, search for help online or use internal **Help** feature.

***With shapes placed on the diagrams.net canvas:***

- **Label the items** by double-clicking on the item and then edit text. You can also label by double clicking anywhere on the Canvas, select **Text** and typing the item's label (e.g., product name), then move it close to the item being labeled.
- You can also color the items and use a legend to better display the stacked items. Click on each item and from the Style menu select **Fill** then select a **Color**.
- **You can include props** (e.g., computer, telephone, etc.) These items are not in your inventory, and are not for sale; just use them as decoration that fits within the workplace theme. Do not label the prop items!
  - Your items should appear to be proportional.
  - Read this document (<https://canvas.sfu.ca/courses/69973/files/19368650?wrap=1>) to help you get started and this link for more information on floorplans (<https://www.diagrams.net/blog/floorplans>). If you do not know how to do something in Diagrams.net, search for help online or use the internal **Help** feature.

Figure 2 shows an example of the **workplace themed display area** created using the office layout shapes in MS Visio:



**Figure 2: Workplace Display Example**

## Submission Instructions:

Submit via **Canvas Assignments** tool the following **four files**:

### 1. The Report (5 pages)

Create a Word document (in a professional **memo** format) addressed to your boss (in this case, your TA) outlining your analysis and design for the retail display area. Your document should contain the following sections properly labeled/formatted:

- 1) **Cover Page** with assignment info, course info, TA name, your name and student number (*Insert > Cover Page*).
- 2) **Memo** - A brief introduction that outlines your task and methodological approach to product selection. It is important to describe the contribution rationale you used for your selection.
- 3) **Table** (*copy/paste from Excel*) - A list of the products you have selected for display. This list should show the critical elements of your contribution calculations and include **ONLY** the products you selected for display. Your design of the spreadsheet is an important part of the assignment.
- 4) **Chart** (*copy/paste from Excel*) – A chart that compares the contribution from each item in your display.
- 5) **Display Diagram** (*copy/paste from Visio*) – A diagram showing your retail display area.

### 2. Your Access Database

Your database file should contain a single saved **query** named as “**QuerySalesSummer2022**” plus the original two **tables** provided. The query should join the necessary tables and apply criteria to limit the results to those required for subsequent contribution analysis.

### 3. Your Excel Spreadsheet

Your spreadsheet file should contain one sheet showing your **profit contribution calculations**, plus a second sheet showing your **contribution chart**. Each sheet tab should be named appropriately. All other sheets should be removed. The spreadsheet should be well formatted and documented so that your boss can make sense of it.

### 4. Your Floorplan Diagram

Your diagram file should contain a visual representation of the retail display area. The layout of products and their **labels** should be clearly marked. The floorplan should be to scale.

## Marking Criteria:

- See the assignment **Grading Key** on the last page for the evaluation criteria used to grade this assignment.
- **Plagiarism**: Students are expected to work independently on this assignment; therefore, a maximum grade of **zero (0)** will be given to students whose submissions suggest that they collaborated with others on their assignments. This applies to the original author of the work, as well as to those whose submissions resemble it!
- **NO late submissions** will be accepted for this assignment!

**Contact your TA immediately if you are having any problems with the Canvas submission process!**

<b>Criteria</b>	<b>Exemplary (20)</b>	<b>Good (15)</b>	<b>Acceptable (10)</b>	<b>Unacceptable (5)</b>
<b>Formatting &amp; Writing</b>	Follows formatting instructions; Great vocabulary; No spelling or grammar errors	Follows formatting instructions; Good vocabulary; 1-2 spelling or grammar errors	Minor issues with formatting; Inappropriate report elements (cover page, memo, table, chart, display); Reasonable vocabulary; 3-4 spelling or grammar errors	Major issues with formatting; Missing report elements (cover page, memo, table, chart, display); More than 5 spelling or grammar errors; Over the page limit
<b>Choice of Items</b>	Excellent justification; Correct number of items	Appropriate justification; Correct number of items	Weak justification; Correct number of items	Missing justification AND/OR Incorrect number of items
<b>Database Analysis</b>	Appropriate query in Access	Incorrect query/query name OR relationship in Access	Incorrect query/query name AND relationship in Access	Missing query AND/OR relationship in Access <b>Missing MS Access (0 score)</b>
<b>Spreadsheet Analysis</b>	Appropriate formulas, chart type, and formatting in Excel	Appropriate formulas and chart type in Excel; Minor issues with formatting (styles, titles, labels, tabs, numbers)	Incorrect formulas and/or chart type in Excel; Some issues with formatting (styles, titles, labels, tabs, numbers)	Missing formulas and/or chart in Excel; Major issues with formatting (styles, titles, labels, tabs, numbers) <b>Missing MS Excel (0 score)</b>
<b>Display Layout</b>	Creative display layout; Items correctly labeled and sized	Appropriate display layout; Minor issues with items' labeling and/or sizing	Some issues with the display layout; Several issues with items' labeling and/or sizing	Missing labels in the model; Wrong dimensions; Not all items displayed <b>Missing MS Visio or diagrams.net file (0 score)</b>
<b>Total Grade (out of 100) → LATE ONLINE SUBMISSION = 0 GRADE !!!</b>				