Excel – HW 1A

Using the class lecture from 8/30 build a spreadsheet that will compute some statistics about your created stock portfolio. Your spreadsheet should have the following columns:

- Name of the Stock (e.g. Microsoft)
- Stock symbol
- Number of shares owned (e.g. 500)
- Price, per share, paid for the stock (e.g. I bought 500 shares of Microsoft at $55.05)
- Current per share price (e.g. $62.30)
- Dividend per share per year (e.g. $1.47)

Your portfolio should consist of four different stocks. You may have as many shares of each stock as you'd like. Assume you purchased the shares of these companies on the day you turned 16 at the Open. Look up the current price, the price on your 16th birthday and the dividend. Note that some companies do not pay a dividend. Use Yahoo Finance, as I did in class.

For each stock compute the following:

1. Current profit/loss per share (current price per share minus price per share paid)
2. Current total value of the stock (current price times number of shares owned)
3. Current profit/loss percentage (profit/loss per share divided by the price paid per share)
4. Yield (dividend divided by price paid per share)

Compute the Portfolio value as shown in class.

Formatting:

All numbers that deal with dollar amounts should be formatted as currency.

Per share amounts should be 2 decimal places. Totals should be 2 decimal places.

Numbers that are a percentage should be formatted as a percent to 1 decimal place.

Submit an Excel file with your answers.

Excel - HW 1B

Make sure to download the Milligan file provided if you choose this assignment option.

Mr. Milligan asks you to determine the cost of average inventory, annual sales, cost of goods sold, annual gross profit, gross margin ratio and markup percentage for each inventory item. The determination of these values requires you to add columns to the Inventory Analysis worksheet. Download the attached file Milligan to complete this assignment. The formulas you should use for these calculations are the following:

1. Cost of Average Inventory : Unit Cost * Average on Hand
2. Annual Sales : Unit Sales Price * Average Unit Sales Per Year
3. Cost of Goods Sold : Unit Cost * Average Unit Sales Per Year
4. Annual Gross Profit : Annual Sales – Cost of Goods Sold
5. Gross Margin Ratio :   <u>Gross Profit</u>
                                  Annual Sales Per Unit

6. Markup Based on Cost :   Unit Sales Price – Unit Cost
                                    Unit Cost
7. For each inventory item, calculate the percentage of the company's total annual sales the item generated.
8. For 1 through 5 above, Mr. Milligan wants to know the average, minimum and maximum value for each.
9. He also wants to know the maximum unit cost and sales price as well as the minimum unit cost and sales price.
10. He also wants to know the total cost of average inventory, the total annual gross profit, total cost of goods sold, and the total annual sales.
11. Mr. Milligan wants to be able to see what will happen to Total Company Annual Sales and Total Company Annual Gross Profit if there are changes to Unit Cost, Unit Sales Price and Average Unit Sales/Year. He wants you to enter in 3 cells the percent change of Unit Cost, of Unit Sales Price and of Average Unit Sales/Year and then have the spreadsheet display what the new Total Company Annual Sales and new Total Company Annual Gross Profit will be. For example, he wants to be able to put in some cells that Unit Cost will increase 5%, Unit Sales Price will increase 3% and Average Unit Sales/Year will decrease 1 % and then calculate the Total Company Annual Sales and Total Company Annual Gross Profit.

As you are constructing the worksheet, do the following formatting:

1. use the currency format for all columns containing dollar values
2. all percentages should be to 2 decimal places

Submit an Excel file with your answers.

Excel - Homework 2A

Build a spreadsheet that will allow a person to evaluate whether a restaurant is worth going to. You will download the Restaurant file which has survey data from 10 people who have dined at 3 different restaurants. Based upon their ratings of the food, the service and the atmosphere, you will calculate whether the restaurant is worth going to.

The rule for making a restaurant a Go To or Do Not Go To is based upon the average of the survey data for food, service and atmosphere. Your spreadsheet will take the average of each of the 3 measures and calculate a weighted average of food, service and atmosphere. The weights are:

Food – 60%
Service – 30%
Atmosphere – 10%

If a restaurant's weighted average is 7 and above it is a Go to. If below 7 it is a Do Not Go To.
Your spreadsheet should have a row for each restaurant. In that row display:

a. the survey average for food
b. the survey average for service
c. the survey average for atmosphere
d. the words Go To or Do Not Go To depending on whether the restaurant's weighted average is above the 7 threshold

Make sure you have an Assumptions section that will hold the weights (60%, 30% and 10%) for food, service and atmosphere. In addition it will have the threshold value (7) that determines whether the restaurant is a Go To or Do Not Go To.

Be sure to use absolute ($) cell addresses where needed.

Calculate whether the restaurant is Superior. The rule for being Superior is that the survey average for all three measures (food, service, atmosphere) are all above 7. That is, food is greater than equal to 7 and service is greater than or equal to 7 and atmosphere is greater than or equal to 7. (Do not use the AND function).

Make sure to use conditional formatting for your assumptions.

Submit an Excel file with your answers.

Excel HW 2B - Auto Purchase

Build a spread sheet that will help you determine which new car to buy. You are specifically interested in determining the <u>annual</u> cost of the car. The factors in determining the cost are:

       a. car payments
       b. fuel costs
       c. maintenance costs
       d. insurance

Your spreadsheet should allow for playing "what if" with the following factors:

       a. years to payoff an interest free loan
       b. number of miles driven per year
       c. cost of regular gasoline

You will allow the following input for each car (see data below):

       a. car name/model
       b. purchase price
       c. MPG of the car

Below are the rules for computing the cost factors.

1) A car whose selling price is above $30,000 uses premium gasoline while all other cars use regular. (Assume that the cost of premium gasoline is $0.15 more than regular.)

2) The cost of maintenance is .0375 cents per mile for the first 10,000 miles driven per year, .045 cents per mile for each mile driven after 10,000. The minimum maintenance cost per year is $300. That is, if the car was not driven at all there would still be a $300 maintenance cost.

3) Insurance costs per year are based on the following table:

Purchase Price	Annual Insurance
$0 – 14,999	$950
$15,000 – 21,999	$1,100
$22,000 – 34,999	$2,300
$35,000 and above	$3,200

4) Assume you will make one payment per year to pay for the purchase of the car. There will be no interest.

Construct a spreadsheet which will compute the four cost factors described (car payments, fuel costs, maintenance costs, insurance) and also display

- the total annual cost for each of the cars under consideration
- the average annual cost for all vehicles.

Assume that your friend will evaluate these 3 vehicles:

Car	Price	MPG
Camry	$25,000	30.1
Audi	$50,000	18.6
Porche	$100,000	10.5

Assume

       a. You will drive 12,000 miles per year.
       b. Regular gas costs $1.95 per gallon.
       c. You will pay the car off in 3 years.

In addition I should be able to change any constant (e.g. $30,000 in question 1) in any question, and your formulas should still work.

In addition be sure:

a) you have an **assumptions** section of the spreadsheet that isolates the constants of the problem.

b) you use absolute addressing (using the $ when referencing a cell) when appropriate.

c) I should be able to change the data for any car or any assumption and your spreadsheet will still give the correct answer based on the rules I have given for the 4 costs.

c) formatting

1) Round all large amounts (greater than $100) to whole dollars. That is, do not display cents for these values. Also do not display amounts with a $.

2) Make sure the spreadsheet is laid out in an organized, logical manner.

3) Use text wrapping for column headings that are too wide.

4) The spreadsheet should have a title in 20 point font and a blue background that is centered across all the columns that have data.

5) Put a box (borders) around the assumption section.

Be sure to submit your Excel file.

Excel 3A - Make or Buy Analysis

You have decided to get into the business of selling gourmet brownies. The brownies you will sell can either be made for you, by contracting with a commercial bakery (the buy alternative) OR you can make them yourself (the make alternative). You decide to build a spreadsheet that will allow you to enter the all the relevant data to help you analyze which is the better option.

Make Cost Components – with this alternative, you will buy the ingredients to make the brownies, hire workers to perform the baking tasks and purchase baking equipment. What follows are how to compute these 3 cost components:

a) *Ingredients* – it takes 10 oz. of ingredients to make one brownie. The following table shows the cost of the ingredients that are used to make the brownies:

Quantity in oz.	Cost per oz.
1 – 100,000	.0135
100,001 – 150,000	.0129
150,001 – 200,000	.0125
200,001 – 300,000	.0117
300,001+	.0110

b) *Labor* – it takes 30 seconds of labor to make 1 brownie. Assume labor costs are $12.50/hr.

c) *Equipment* – you determine that you need to purchase an oven and a mixer. An oven costs $13,000 and the mixer costs $17,000. You will take out a loan to pay for both pieces of equipment and pay it off in one year at an interest rate of 8.5%. You will make monthly payments (=12 payments). Regardless of how many brownies you are making, add the cost of one month of loan payments.

Buy Cost Components – with this alternative you will contract a commercial bakery to make the brownies for you. There are two cost components.

d) *Purchase* – the bakery will charge you

- $0.25 per brownie for the first 10,000 brownies you purchase
- $0.21 per brownie for each brownie over 10,000 purchased

For example, if you purchased 13,000 brownies you would pay
        (.25 * 10,000) + (.21 * 3,000)

e) *Administration* - $.0.03 per brownie but a minimum of $1,000. That is, the smallest amount of money you will spend on administration is $1,000.

f) *Warehousing/Shipping* – you will have to pay for storing the brownies after they are made by the commercial bakery. The rate is $.015 per brownie if you are purchasing over 20,000 brownies. Otherwise the rate is $.025 per brownie.

You are unsure as to how many brownies you think you will be selling. In order to see what the costs will be for different amounts, display the costs for the following quantities: 5,000, 15,000, 25,000, and 50,000. (Hint: your spreadsheet should have a row for each of the 4 quantities).

For each quantity, create formulas that calculate each component cost and display each component cost.

a. Be sure to display the *total cost* for the **Make** and the **Buy** alternatives.
b. The last column should say either *Make or Buy* depending on which alternative is lower in cost for that quantity of brownies.
c. Also, at the bottom of the total Make and the total Buy costs, display the *averages* of the 4 quantities.

In addition be sure:

a. that you have an assumption section of the spreadsheet that isolates the constants of the problem. For example the labor time it takes to make a brownie.
b. use absolute addressing (using the $ when referencing a cell) when appropriate.

    c. format cells. All costs should be in currency format (US dollars) with two decimals places.

    d. the headings for the columns should be text wrapped in order to save space

    e. there is a heading on top of all the columns that

       1. is entitled Brownie Analysis
       2. is centered across all the columns
       3. 20 point font
       4. has a yellow background

Be sure to submit your Excel file.
Excel HW 3B - Apartment Project

Use the Apartment file provided.

You have been asked to develop a spreadsheet that will allow a builder to analyze what types of apartment buildings to build. Specifically, the builder needs to compare the income that comes in from the rent of apartments to the cost of building and running the apartments.

The apartment buildings being considered will each have either all one-bedroom, all two-bedroom or all three-bedroom apartments. For each type, the builder will enter the following values:

a) number of rooms in the apartment

b) square footage of the apartment

c) number of units of that type that will be in each building. In the example below, the three possible apartment buildings will have either 25 one-bedroom apartments, 20 two-bedroom apartments or 12 three-bedroom apartments.

d) whether the building has an exercise room.

For your spreadsheet, use the following data. Remember that your spreadsheet should work for any data that is entered. Feel free to have as many columns as you like.

Type of Apartment	Number of rooms	Apartment square footage	Number of Units	Exercise Room
One-bedroom	2	575	25	No
Two-bedroom	3	1000	20	Yes
Three-bedroom	5	1300	12	Yes

Income – there are 3 sources of income:

- Apartment rent
- State rebate
- Fees from the Exercise Room usage

1) Rent - The monthly rent for each apartment is computed by the following formula:

rent = ((per-room-fee * number of rooms) + (square-foot-fee * square footage))

where the per-room-fee and the square-foot-fee is set by the builder. The 2 fees are the same for all 3 of the apartment types.

For your spreadsheet, use a per-room-fee of $10 and square-foot-fee of $4. Remember that your spreadsheet should work for any data that is entered.

_____

2) State rebate – this monthly rebate is based upon the total number of rooms and the total size, in square feet (sq. ft.), of all apartments in each building. If the total size is greater than 16,000 sq. ft. or the number of rooms is greater than 55, then the rebate is $50 per apartment; otherwise it is $60 per apartment.

3) Exercise room – Buildings that have an exercise room charge $100 per unit (apartment) per month.

Costs – there are 3 costs the builder will incur monthly:

- loan to pay for construction
- taxes
- maintenance

1) The cost of construction will be paid with a loan that will be paid off monthly in 20 years at an interest rate of 7.5%.

The cost to build each apartment in the building is a function of the following table:

Square foot of the apartment	Cost per square foot
0 – 500	$300
501 – 700	$265
701 – 999	$240
1000+	$200

Remember that the loan is calculated on the total construction cost of each building.

2) Taxes – the formula for the monthly real estate tax for each building is based on the total monthly rent for that apartment building. The tax rate is 5% for the first $65,000 of rent and 5.75% for any rent over $65,000.

3) Maintenance – if the total square footage of the building exceeds 15,000 sq. ft. and the total income is greater than $68,000 per month, the maintenance cost incurred by the builder is $2 per square foot of space. If not, the maintenance cost is $2.25 per square foot of space. The minimum cost of maintenance is $35,000 per month. That is, the smallest amount paid per month for maintenance is $35,000.

Be sure to display the following values for each building type:

1. Monthly Rent
2. Monthly State Rebate
3. Monthly Exercise Room Fees
4. Monthly Income
5. Monthly Loan Payment to Pay for Construction
6. Monthly Taxes
7. Monthly Maintenance
8. Monthly Cost
9. Monthly Profit (income – cost)
10. Display the word BUILD if income exceeds cost or DO-NOT-BUILD if income does not exceed cost.

Additional values to compute are:

11. Largest Monthly Profit
12. Average Monthly Profit

Notes.

1. The analysis should produce monthly numbers.
2. All values, except interest rate, should be displayed with zero decimal places. The interest rate should be displayed as a percentage to 2 decimal places.
3. Be sure to have an assumptions/constants section.
4. Use absolute addresses where appropriate.
5. Make sure the spreadsheet is laid out in an organized, logical manner.
6. Use text wrapping for column headings that are too wide.
7. Include a one row title at the top of the spreadsheet that says "Apartment Project" and that is 18 point Times New Roman font, with red letters on a yellow background. The title should be centered across all the columns that have values.

Be sure to submit your Excel file.

Excel HW 4A - Inventory

Use the Inventory file provided.

The Inventory spreadsheet has data on the products our company sells. The columns have the following meanings

Column	Description of Data
A	The Product # of the product
B	Product Division Code
C	The number of units of that product that is in inventory (On Hand)
D	The unit cost to buy from our supplier (List Price)
E	How many units we sell everyday (Daily Sales)

This table lists the number of weeks of supply that should be on hand for all products in each product division code.

Product Division Code	Weeks of Supply
DRY	1
MET	2
CAN	4
BAK	1
CLN	5

PAP	3

Values to calculate:

a. ORDER QUANITY: The information in the spreadsheet specifies how many units of each product are on hand and how many are sold daily. Assume we are open 7 days a week. The table above shows how many weeks of supply should always be on hand. Based on these numbers, calculate how many units of each product need to be ordered.   For example, in Row 2 of the table (PAP563G), there are 40 units on hand, 2 units are sold daily, and the table shows that there should be 3 weeks of units available on hand. Given that information, 2 units need to be ordered. Of course if there is sufficient inventory to meet the weeks of supply, this value should be zero.

b. NET PRICE PER UNIT: The Net Price is the List Price (column C) less a discount percentage where the discount is based on the Total Order Quantity for all Products. The table below shows the Discount percentages for the different amounts of Total Order Quantity. Total Order Quantity is the total of all products ordered. The same discount percentage will be used for each product that is ordered.

Total Order Quantity	Discount
0 – 200	0
201 - 500	2%
501 - 900	4%
901 - 1400	5%
1401 - 1600	6%
1601 - 2500	7%

Feel free to create as many columns as you like for your calculations. All prices should be displayed with 2 decimal places.
Be sure to submit your Excel file.

Excel HW 4B - Inventory

Use the Inventory Strings file provided.

The Inventory worksheet (tab) has data on the products our company sells. The columns have the following meanings

Column	Description of Data
A	The Product # of the product
B	The number of units of that product that is in inventory
C	The unit cost to buy from our supplier
D	How many units we sell everyday

The Product #, which is 7 characters, consists of 3 parts:

1. Product Division – this is represented by the first 3 characters. There are 6 Product Divisions listed below:

This table lists the Description for each Division.

Division Code	Description
DRY	Dairy
MET	Meat
CAN	CannedGoods
BAK	Bakery
CLN	Cleaners
PAP	Paper

This table lists the number of weeks of supply that should be on hand for all products in each division.

Division Code	Weeks of Supply
DRY	1
MET	2
CAN	4
BAK	1
CLN	5
PAP	3

2. Product Code – the next 3 characters.
3. Product Color – this is the last character. There are 4 possible Colors:

Code	Color
G	Grey
W	White
B	Black
R	Red

Create a column that displays the full description for each product. The full description consists of its

1. division description
2. a dash
3. the product number
4. a dash
5. the color description

Example: PAP563G should be Paper- 563-Grey

Feel free to create as many columns as you like for your calculations. ==

4. The StringData spreadsheet has baseball scores in column A. The format is 3 letter abbreviation of a team, the number of runs they scored formatted as 2 digits, the 3 letter abbreviation of the other team and the number of runs they scored formatted as 2 digits. Display the following:
   1. The full name of the team that won each game where TOR=Toronto, BOS = Boston, NYY=New York, TAM=Tampa Bay and BAL=Baltimore.
   2. The total number of runs scored by the winning teams
   3. Extra Credit: How many games did New York win?

Be sure to submit your Excel file.

Homework Assignment 5
Download the Basketball file to complete.
Create queries that do the following:

1. Find games where team #3 was the winning team. Display the game_Id. Name the query HW5-1.
2. Find games where team #3 was the winning team and team #3 was the home team. Display the game_Id. Name the query HW5-2.
3. Find games where team #3 was the home team or team #3 was the winning team. Display the game_Id. Name the query HW5-3.
4. Find players who either scored more than 15 points or had more than 3 assists or had more than 10 rebounds. Display the player_Id, points, assists and rebounds. Name the query HW5-4.
5. Find players who scored more than 15 points and either had more than 3 assists or had more than 10 rebounds. Display the player_Id, points, assists and rebounds. Name the query HW5-5.
6. Find players whose home state is NY or NJ and whose weight is over 175 pounds. Display their first name, last name, home state and weight. Sort by weight in descending order. Name the query HW5-6.

Be sure to submit your Access file.

Homework 6A
Download the Basketball file.

1. List players whose weight-to-height ratio is greater than 2.6. Display their first name, last name, height, weight and weight-to-height ratio. Display the weight-to-height ratio to one decimal place and with a caption of ratio. Sort by height (descending order) and then for players of the same height, by weight (ascending order). Name the query hw6A-1.
2. List all game ids, playerids, minutes and assists where a player played more than 20 minutes and had the same number of assists as fouls. Sort by playerId (ascending order). Name the query hw6A-2.
3. List all game ids, playerids, minutes and points where the player played 30 to 40 minutes and scored more than 20 points. Name the query HW6A-3.
4. List all players whose home state is either NJ, NY, PA or MA and whose weight is between 180 and 200 pounds. For each player, display their last name, weight and home state. Sort by home state and then for players from the same home state, by weight (descending order). Name the query HW6A-4

Be sure to submit your Access file.
Access Homework 6B
Download Basketball file.

1. Display the game ID, the player ID and the last name of the player for each player in each game (see the Participations table). (Name the query HW6B-1)
2. Same as #1 but also display the name of the player's team. Sort in ascending order by team name. (Name the query HW6B-2)
3. Show all players who played in games where the total number of points was greater than 190. Display the game ID, the player ID, the last name of the player, the name of the player's team, and the total number of points scored. Sort the data by total number of points in descending order. (Name the query HW6B-3)
4. For each game that coach Murphy (last name) won, display the game ID, the winning team name, the winning team's score and the losing team's score. (Name the query HW6B-4)
5. For each game where the winning margin (difference between the winning team's score and the losing team's score) was more than 20 points, display game ID, the winning team name, the losing team ID, the winning team's score, losing team's score and the winning margin. Sort the data in descending order by winning margin. (Call the query HW6B-5)

Be sure to submit your Access file.

Access Assignment 7A
For this assignment use the Sports Apparel database.

1. Create one query that will display the total sales of all companies located in Hawaii and the total sales of all companies located Oregon. In addition to total sales show the smallest and largest sale in each state. (Call the query HW7A-1).
2. Create a query that will display the number of companies located in each zip code. Display the zip code and the number of companies. Sort by zip code. (Call the query HW7A-2).
3. Create a query that will display the average number of orders for each city within each state. Display the State, City and average number of orders. (Call the query HW7A-3).
4. Create a query that will display the total number of orders for the all companies. (Call the query HW7A-4).

Be sure to submit your Access file.
Access HW 7B
Download Basketball file

1. What are the total number of points scored by each player? (Call the query HW7B-1)
2. What are the total number of points scored by each team? Hint – do not use the games table for this. (Call the query HW7B-2).
3. For each player, display the player id, player last name and the total points scored by the player's team. (Call the query HW7B-3)
4. For each player, display the player id, player last name, total points scored by the player, total points scored by the player's team and the % of points scored by the player for his team. (Call the query HW7B-4)

5. Create a query that will display, for each team, the team name, number of wins, number of losses and winning percentage. (Call the query HW7B-6)

Be sure to submit your Access file.
Access HW Assignment 8
A University wants you to build a database to keep track of information about books in their libraries. The University has several libraries on campus. In each library the following information is keep for each book: a unique call number (an integer), which library on campus the book is kept, the book title, what type of book it is, the number of copies the library owns, the cost of the book and whether or not it is for reference.
The University currently has 2 library locations (see below). However, they might add others in the future. Each location has a name, a size in square feet and a yearly budget.
The University also wants to track students who borrow books. Each student has a unique student id (integer), last name, first name, birth date, and borrowing limit (integer).
Specifics:

1. There are only 3 book types: science, arts, business. When a new book is entered (or when a change is made to an existing one), only one of these three can be selected.
2. You must ensure the user enters all the different pieces of information the University wants to keep for books, libraries and users.
3. For each book:
   a. ensure that the number of copies is a positive number less than 20
   b. You must ensure that the cost of a book is under $500
4. Assume the University has the following 3 libraries:

Name	Location	Size	Budget
Business	Quad	50,000	$1,000,000
A&S	NewArea	125,000	$2,500,000

Create tables required.
For each table enter 2 records.
Be sure to submit your Access file.

Assignment 8

Download the GoalSeek file and complete the four assignments (each in their own worksheet) using Goal Seek.
Submit your Excel file with your answers.

Assignment 9

Excel Assignment 10

Download the Pivot file

1. Create PivotTables for the Data worksheet that will display the answer for each of these questions. Each PivotTable should be on its own spreadsheet.
    1. What were the revenues for each city in 2002? (Name the Worksheet PartA)
    2. What were the revenues for each city in 2002 for Store, Catalog and Web sales (the How column)? (Name the Worksheet PartB)
    3. In each city, what were the revenue of each product for Store, Catalog and Web sales (the How column) in 2002? ((Name the Worksheet PartC)
    4. What was the total quantity of compasses sold in London over the web? (Name the Worksheet PartD)
    5. What was the average quantity of hammocks sold in each city in 2002? (Name the Worksheet PartE)
    6. What were the revenues for each month in 2002? (Name the Worksheet PartF)
2. Copy the data from the Data worksheet to a spreadsheet named DateSort. Display data sorted by date.
3. Copy the data from the Data worksheet to a spreadsheet named Paris. Display rows for Paris only.
4. Copy the data from the Data worksheet to a spreadsheet named Top10. Display values for top 10% in revenue only.
5. On the worksheet Dates there are 27 sales. Calculate the average number of days between sales. Put the answer in cell G31.

Be sure to submit your Excel file.