Introduction
This class is “Corporate Finance,” but many of the techniques we study (such as time value of money) are directly applicable to personal finance. This exercise is intended to introduce you to calculating payments and locating consumer financial information. While the information pertains directly to purchasing a vehicle, much of the same type of information is available for other major consumer items. Being informed is the key to receiving the “best deal” available whether you are purchasing a stereo system, an automobile, or a home.

General Vehicle Purchase Process
When planning to purchase a vehicle, first narrow your choices to a preferred set. The vehicle chosen is primarily a function of personal preferences. Some people prefer sports cars while others prefer pickup trucks. I do recommend that you consider the safety and reliability of the vehicle. Regardless, you should be aware of several items before entering a showroom. First, research the dealer’s invoice and other indicators of the price you should pay for the new vehicle. Second, estimate the value of any vehicle you plan to trade. Third, determine the interest rate you should expect to pay if you finance a portion of the vehicle’s cost. Fourth, understand the “games” that salespeople play. Remember, that the job of a salesperson is to sell. They are not there to give the vehicles away. Sometimes their compensation is based on commissions or bonuses that may be tied to the sales price of the vehicle. The “best price” for them is the highest price you will pay. This does not make them “evil.” It is simply a fact that you should understand.

Financial Information Sites in the Project
The sites listed in this project are but a few of the ones available. I cannot guarantee that the information from these sites is the “best” available, but I do believe it is helpful. Keep in mind that the project is more useful if you choose a vehicle that you may actually consider purchasing in the foreseeable future.

Sample Project
A “generic” sample project is included in this document. The sample does not chose a particular vehicle, but instead indicates the information you should include in the project. The sample project does insert values in example calculations to make it easier for you to understand. Keep in mind that you need to update all those values based on your chosen vehicle, current interest rates, and the payments for your vehicle.

Project Instructions
Create a Word document that follows the format of the sample project included in this document. The document name should include your first initial, your last name, and Project 2 (for example, RBest Project 2). The first line should have the title, FINC 3511 – Summer 2022 – Project 2. The second line should include your full name and the date. Each of the following steps should be completed in order with the appropriate information included in the project with headings included for each step.

Step 1
Choose any 2022 or newer vehicle. List the vehicle make, model, and year. Briefly explain why you chose this vehicle.

Step 2
It is important to understand how to negotiate with a salesperson. Several books, magazines, and internet sites give information about the car buying process. I have summarized information from various sources into a short article entitled, “The Car Buying Process.” The “article” is included as the last two pages at the end of this document.

1. Read “The Car Buying Process” and write a four or five sentence summary.

STEP 3
Research the safety characteristics of your chosen vehicle. Useful sites for determining the safety ratings of various vehicles include the Insurance Institute for Highway Safety (https://www.iihs.org/) and the National Highway Traffic Safety Administration (https://www.safercar.gov/).
1. Go to the website for the Insurance Institute for Highway Safety (https://www.iihs.org/).
   a. Click on Vehicle Ratings, select the make and model of your vehicle, or choose the vehicle class to which it belongs, and click on the model of your vehicle.
   b. Record available results for small overlap, moderate overlap, side, roof strength, head restraints and seats, and front crash prevention.
      i. If your vehicle has not been tested, either: (a) report results for an older model of your vehicle; or, (b) report the test results for another vehicle made by the same manufacturer which you believe is closest in construction to your choice.
      ii. You may not have results for all tests.
2. Go to the website for the National Highway Traffic Safety Administration (https://www.safercar.gov/).
   a. Click on “Ratings” and find your vehicle by using the year/make/model search option.
   b. Record the frontal crash, side crash, and rollover ratings for your vehicle.
      i. Note: 5 stars is the best rating.
      ii. If your vehicle is not listed, choose the nearest available model year or the nearest vehicle by the same manufacturer.
3. Summarize in a few sentences the safety characteristics of your vehicle. Indicate whether these ratings would affect your decision if you were really planning to buy.
4. You do not have to include this information in your project, but if you were actually planning to purchase a vehicle, I would also suggest that you consider its reliability record. One source of reliability information is Consumer Reports. Unfortunately, their internet service is fee based, so we will not use it in this course. However, for around $10 per month you can access their reliability database.

STEP 4
Get the dealer’s invoice price (what the vehicle costs the dealer) for the new vehicle and get an estimate of the value of your trade-in. There are numerous sites which give “Dealer Invoice” information. We use Kelley Blue Book’s site since it is free. (Another free site is Edmunds (https://www.edmunds.com).)
   a. Click on “Price New/Used” and choose the make and model for the new vehicle.
   b. Choose “Build and Price” and select options and the click on “See Fair Purchase Price.”
   c. Record the MSRP (manufacturer suggested retail price), the “fair purchase price,” and the dealer invoice.
2. Return to the initial page of the Kelley Blue Book (https://www.kbb.com) website.
   a. Click on “My Car’s Value” and then “Get Kelly Blue-Book Values.”
   b. Select the year, make, and model of your trade-in vehicle. (Your trade-in vehicle is the vehicle you currently drive. If you do not have a vehicle, choose a vehicle driven by a relative or friend.)
   c. Enter relevant information about your vehicle (trim, equipment, condition).
   d. Based on the “Trade In” tab, record the trade-in value for your vehicle for very good, good, and fair conditions.
3. Return to the initial page of the Kelley Blue Book (https://www.kbb.com) website.
   a. Click “Price New/Used Cars” and select year, make, and model of your trade-in vehicle.
   b. Choose “Build and Price” and select information about trade-in vehicle (trim, equipment, condition).
   c. Choose “See Fair Purchase Price,” “Buy From a Dealer,” and then “Get a Used Car Price.”
   d. Record the suggested retail price for your trade-in vehicle (this is the list expected list price).
   e. Note: The Dealer Invoice and Retail prices for the new vehicle and the Trade-In and Retail values for the used vehicle often vary substantially. Usually you will find that the dealer will initially try to get you to pay as close to Retail for the new car as possible, while offering you as little as possible for your vehicle. This is where negotiating skills are valuable.

STEP 5
There are numerous sites where you can purchase a vehicle online and others that give you information about the prices people are actually paying for vehicles. Using information from these sites can help you when you are negotiating.
1. One site with prices for new vehicles is CarsDirect.com (https://carsdirect.com). You can actually purchase a car online at this site, so it gives you a firm price quote for many vehicles. For other vehicles, it gives you a target
price which is the price they will try to negotiate for you. Regardless, the listed prices are good “ballpark estimates” of the price you could get at a dealer.

   i. Click “New Cars,” select the manufacturer of the vehicle, choose the model you want, and click “Find Your Next Car.” Then click on “Price it New.”
   ii. Choose the style of vehicle and then choose options for your vehicle.
   iii. Record the “CarsDirect Price.” It may be called a “Target Price.”
   iv. Note 1: If you were purchasing a vehicle, you should compare the price to Kelley Blue Book’s “Fair Purchase Price.” You may also want to check prices on other sites like TrueCar.com (https://www.truecar.com). Many dealers post internet prices, but be sure to call and ask if there are additional fees that are not included in the listed price.
   v. Note 2: If you use the “CarsDirect” price as your expected price for the new vehicle, the trade-in value of your vehicle is a good estimate of what you should expect the dealer to allow you for your trade-in vehicle. In effect, you are using “wholesale” prices for both vehicles. However, you can sometimes get a better price than the one listed on “CarsDirect.” You should only use this price as an estimate. I paid about $1000 below the CarsDirect price for the last car I purchased.

STEP 6
Now, calculate an estimate of the “drive-out” cost of the vehicle and the amount to be financed. Follow the format in the sample project using the following information.

1. Note the price you expect to pay for the new vehicle (from CarsDirect or another source).
2. Subtract the Trade-in value for the car you currently own.
3. List the Net Difference in the new car price and your current vehicle.
4. Add the Document Preparation and Related Fees (assumed to be $798 for this project).
   a. Most dealers charge numerous purchase fees. The document preparation and associated fees vary across dealers. The registration fee is often around $99. For this project, assume the total of these fees is $798. (Watch these fees carefully. They can have a big impact on your total price.)
5. List the Total Before Tax, Tag, and Title (Net Difference plus Document Preparation and other fees)
6. Calculate Taxes on the vehicle. Assume a 7% tax rate for the project.
   a. Calculate taxes as the Total Before Tax, Tag, and Title times 0.07.
   b. Note: The difference in the price you pay and your trade-in value (plus some fees) is taxable. Cash rebates are generally treated as “down payments,” so they do not lower your tax basis. “Dealer incentives” are usually considered a price discount and do lower your taxes. Keep in mind that the dealer’s pricing information will generally start from the MSRP price, so your trade-in value will often be “inflated” to account for the “discounted” price of the vehicle.
7. List the Tag, Title, and Related Fees. These fees are usually not that large. For this project, assume the total for these fees is $46. (This is what they were for my last car.)
8. List the Drive-Out Price which is the amount you are paying for the new vehicle. The Drive-Out Price equals the “Total Before Tax, Tag, and Title” plus “Taxes” plus “Tag, Title, and Related Fees.”
9. List the Payoff on Trade-in.
   a. I do not want you to list your personal financial information in this project.
   b. For this project, assume that the payoff on your trade-in vehicle is equal to one-half of the trade-in value you listed in part 2 of this section.
   c. Calculate the “Amount to be Financed” as the Drive-Out Price plus the Payoff on Trade-In. We will assume that you will not make any additional cash down payment.

STEP 7
Use Bankrate.com to get an estimate of current auto loan rates.

   a. Scroll down the page and record the 60-month new car and 48-month new car rates.
   b. For this project, assume the rate for 72 months is the 60 month rate plus 0.50%.
2. When you are actually buying a vehicle, always check with your bank or credit union for their car loan rates. Also, check to see if the car manufacturer is offering special financing and/or rebates. Often, the special
manufacturer rates are better than the rates available elsewhere. However, note that if you take special financing offers, you sometimes do not get the cash rebates or dealer incentive discounts.

**STEP 8**

Use the pricing and loan rate information you gathered to estimate the monthly payments you would make if you financed the “Amount to be Financed” for your researched vehicle.

1. Calculate the payments based on financing the balance for 48, 60, and 72 months using the rates you gathered in Step 7 and interest rates that are 1%, 2%, and 3% higher than the original rates. The interest rate you would pay depends both on the length of time you finance the vehicle and your credit worthiness. If your credit is weak, you will pay a rate that may be several percent higher than the “normal quoted rate.”
   a. You should have a total of twelve calculated payments.
      i. There are several sites with loan calculators available that can be used to calculate the payments. One can be found on the website listed in Step 7.
      ii. You can also calculate the payments using a calculator. Set: n=number of monthly payments; \( i = \text{quoted interest rate (in \% form)} / 12; PV = \text{Amount to be Financed}; FV = 0; \) Calculator in End Mode. Calculate \( PMT \).
      iii. You may also calculate the payments in Excel using the “payment” function: \( \text{pmt(rate, nper, pv, fv, type)} \). Here: rate=quoted interest rate (in decimal form) divided by 12; nper=number of monthly payments; pv=Amount to be Financed; fv=0; type=0.
      iv. For example: If my amount to be financed is $22,622, my annual interest rate is 4.48%, and I am financing for 48 months, I would enter the following in the cell in Excel: \( \text{=pmt(0.0448/12,48,22622)} \) and the resulting value would be $515.66.
   b. Answer the following two questions.
      i. How much total additional interest over the life of the loan will the person who finances the vehicle for 72 months pay versus the person who finances the vehicle for 48 months (use current interest rates for this calculation)?
      ii. How much total additional interest over the life of the 48 month loan must a person pay who has weaker credit and is required to pay the +3% rate versus a person who has stronger credit and receives the current interest rate?
         1. Hint: Total int. paid = (monthly payment)(number of payments) – Amount borrowed
STEP 1. Vehicle Make, Model, and Year and Why It Was Chosen (New Vehicle)

STEP 2. Car Buying Process Summary

STEP 3. Vehicle Safety Summary and Discussion

STEP 4. Pricing Information
New Car: List Year, Make, and Complete Model Description
Total Dealer Invoice
Total Dealer Retail (MSRP)
Used Car: List Year, Make, and Model
Trade-In Value: Excellent, Good, Fair and the one that you think fits your car.
Retail Value

STEP 5. CarsDirect.com Price: $21,899

STEP 6. Amount to be Financed Calculation

New car price (from CarsDirect or other source like kbb.com) $21,899
Subtract Trade-in value (this is trade-in value of your current vehicle) - $ 3,000
Equals Net Difference (New car price minus Trade-in value) $18,899
Add Document Preparation and Related Fees (assume $798 for project) + $798
Equals Total Before Tax, Tag, and Title (Net Difference plus Doc Prep) $19,697
Add Taxes (use 7% rate: In this case: 19,697 X 0.07 = $1,379) + $ 1,379
Add Tag, Title, and Related Charges and Fees (assumed to be $46) + $ 46
Equals “Drive-out” Price (not including trade-in payoff) $21,122
Plus Payoff on Trade-in (assume ½ of trade-in value is the payoff) + $ 1,500
Equals Amount to be Financed (assume no cash down payment) $22,622

STEP 7. Interest Rates: 48 months – 4.48%; 60 months – 4.51%; 72 months – 5.01% (Yours may differ.)

STEP 8. Payments, Total Amount Paid, and Total Interest Paid

<table>
<thead>
<tr>
<th></th>
<th>Current rate</th>
<th>+1%</th>
<th>+2%</th>
<th>+3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 months</td>
<td>4.48%</td>
<td>5.48%</td>
<td>6.48%</td>
<td>7.48%</td>
</tr>
<tr>
<td>Payment</td>
<td>515.66</td>
<td>525.90</td>
<td>536.27</td>
<td>546.76</td>
</tr>
<tr>
<td>60 months</td>
<td>4.51%</td>
<td>5.51%</td>
<td>6.51%</td>
<td>7.51%</td>
</tr>
<tr>
<td>Payment</td>
<td>421.85</td>
<td>432.21</td>
<td>442.73</td>
<td>453.41</td>
</tr>
<tr>
<td>72 months</td>
<td>5.01%</td>
<td>6.01%</td>
<td>7.01%</td>
<td>8.01%</td>
</tr>
<tr>
<td>Payment</td>
<td>364.43</td>
<td>375.02</td>
<td>385.79</td>
<td>396.75</td>
</tr>
</tbody>
</table>

Total Interest Paid (48 months at 4.48%) = (515.66)(48) – 22,622 = $2,129.68
Total Interest Paid (72 months at 5.01%) = (364.43)(72) – 22,622 = $3,616.96 ($1,487.28 more)
Total Interest Paid (48 months at 7.48%) = (546.76)(48) – 22,622 = $3,622.48 ($1,492.80 more)
The Car Buying Process

Introduction
Various “methods” are used by car salespeople. A general description of the process can be condensed into a simple set of steps (which are actually taught to many salespeople during their training sessions). The number of steps varies according to the source, but the basics are virtually the same. Remember, car salespeople are not “evil.” They are simply doing their job. To get the “best deal,” you must also work.

Step One: Establishment
People are more likely to buy if they feel comfortable with the salesperson. For that reason the salesperson is urged to quickly establish a “relationship” with you. A firm handshake, name exchange (usually including the repeating of your name), and an introduction to any other parties with you is compulsory. A good salesperson will pay equal attention to spouses (or significant others), but often will pay less attention to someone brought along to “help you” (unless the other person is a party to the deal such as a co-signer).

Step Two: Investigation
Here the salesperson will try to determine your interests. A good salesperson will ask questions to assess your tastes, financial characteristics, and intentions regarding time of purchase. Beyond an assessment of your tastes, questions may include some of the following. How much do you want your payments to be? How much do you want to pay? How much do you want for your trade-in? How much do you plan to pay down? (Usually the less information you give at this stage, the better off you will be.)

Step Three: Presentation and Demonstration
This step usually starts with the isolation of the vehicle. This is done to focus your interests. The salesperson will often lead you around the vehicle pointing out its styling, safety, and convenience features. This is to let you know as much about the vehicle as possible before you drive it.

The demonstration phase consists of your driving the vehicle. Usually, the salesperson will go with you, but many dealers will let you drive the vehicle alone. Driving the vehicle without the salesperson allows you and any others in your party to talk openly about what you like about the vehicle without fear that it will later be used against you in negotiations. During this phase, carefully check the sticker price and look for any “dealer add-ons.” Common add-ons include fabric protection, paint sealant, dealer prep, etc. Many of these items can be negotiated down to near zero if the vehicle is in sufficient supply.

Step Four: “If I, Would You?” (Negotiation and Write-up)
If you indicate that you want to think about the purchase or leave to drive a competitor’s vehicle, the salesperson will usually try to move negotiations forward by asking if you are willing to buy the car today if you are offered a great deal. This is the true start of the negotiation phase. If you are really interested, tell them that you will buy if the deal is good enough. Otherwise, you usually will not be offered the “best deal possible” because the dealer is afraid you will take the offer elsewhere to use as a bargaining chip.

Often at this point the salesperson will ask for the keys to a potential trade-in vehicle. Be smart regarding what you leave in a vehicle. Most dealers will not allow employees to search through your belongings, but they are trained to notice all that is “in plain view.” Don’t be surprised if after the test drive the salesperson begins to talk about fishing or camping if you leave a copy of Field and Stream in your seat. (Sometimes copies of flyers or printouts with information for competing vehicles may be strategically left in view to let the dealer know that you are not “locked-in” on their vehicle.) Often, you will not see your keys again for a while. Dealers know that holding your keys slows your leaving. It also gives them time to send the manager to ask what they can do to restart negotiations if you start to leave. If this bothers you, remember that the keys are yours and you have every right to ask for them. If the salesperson returns and says something about the value of your car, the test drive is over. You can ask for the return of your keys and negotiate only when they are returned.
In most instances, expect that the salesperson will constantly go back and forth to the “sales manager” for approval in the negotiation stage. Although some of this is necessary, much of it is grandstanding. Again, this makes it appear that the salesperson is “on your side” since they are battling so hard with the sales manager to get you a great deal. Also, it is common during negotiations for the “sales manager” to make an appearance and tell you how tough a negotiator you are. Do not fall prey to this form of flattery. Stick to your guns. One strategy often used by customers is getting up to leave because they are tired of negotiating. Remember, this only works if you are willing to walk away. If your bluff is called and you stick around, the salesperson knows that you are interested and probably will pay a price close to that currently “on the table.”

One method of negotiation is to deal only on the basis of the “bottom-line” or “drive-out” price. Dealing in this manner requires that all fees are included. Always be wary of any “add-in” fees that “appear” when the pricing documents are created. Make it clear that you want all fees included in the quoted “drive-out” price.

Finally, never sign anything until the deal has been clearly defined. When the written deal is placed in front of you, ask questions about anything that appears different from what you negotiated. Sign the documents only if you are completely satisfied that the numbers reflect your negotiations. (Often I sign only after adding a line that the deal is contingent upon my receiving financing terms which I deem acceptable. In effect, you can always still walk by indicating that you are unhappy with the financing terms offered. This also makes the dealer more inclined to offer you the best interest rate possible.)

**Step Five: Closing**

At this point you are usually escorted to the Business Office (or finance manager). Often the first loan rate you are offered is not the best available. If you have done your homework and checked rates from other sources, you will know. If you are offered a rate you deem too high, simply tell the finance representative that you can do better elsewhere. Usually, they will try to at least match the rate you quoted.

During this time you are often offered numerous additional items like insurance, extended warranties, tire warranties, service contracts, etc. The rates for such products are often high. In the case of credit life, health, accident, and disability insurance, you can often get better rates (or higher coverage limits) by visiting your insurance agent. You may also already be covered by other policies. Extended warranty contracts are a personal choice. Do keep in mind that the price of these contracts is negotiable. On a recent purchase, the initial quoted price was $2,100. The final agreed upon price was $895. In general, the “true value” of many “add-ons” is open to debate. Do not allow yourself to be pressured into buying something you do not want. A quick internet search can provide much information.

At the end of the process, “final” documents are presented and you are asked to sign. Read everything carefully and be sure that the documents reflect exactly what you expected. If there are questions, clear them up before you sign.

**Note**

Never change from a plan to purchase to a leasing arrangement simply to have lower monthly payments. A lease may make sense, but you should carefully consider this alternative based on all its characteristics.