# CREATING AN AACSB TECHNOLOGY CLASS FOR FINANCE MAJORS UTILIZING BLOOMBERG, EDGAR, YAHOO FINANCE, AND MICROSOFT EXCEL

**Flanegin, Frank R.**
**Robert Morris University**

**Bailey, Barrie**
**Monmouth University**

**Dennick-Ream, Zane**
**Robert Morris University**

***ABSTRACT***
*Technology utilization and integration has become a common theme across business curriculums. Standard 12 of the eligibility procedures for the AACSB (Association to Advance Collegiate Schools of Business) suggests that Business Schools have the responsibility to continuously improve instructional programs including pedagogy that reflects the ever changing technological landscape of business operations. The purpose of this paper is to present the design and implementation of a technology class specifically geared for finance majors that incorporates Bloomberg, Edgar, Yahoo Finance, and Microsoft Excel.*

**INTRODUCTION**
All AACSB accredited business schools require students to take a core technology course. Unfortunately for many schools, this requirement is fulfilled by a very general course that may have sufficient and consistent breadth for all business students (Stephens and O'Hara, 2001) but very limited depth for any individual major. Some institutions have a management information systems class for management and marketing majors and an accounting information systems class for accounting and possibly finance students, but very few have a technology course specifically designed for finance majors.

This paper reviews the design and implementation of a technology based course for finance majors that incorporates work based pedagogy to meet the needs of students, faculty, administrators and future employers. As Lee Schlenker and Adam Mendelson stated in their 2008 BizEd article Technology at Work**:**

> "Many schools have added technology components to their programs. But we believe these computer-aided programs are valuable only when they link content and software directly to real-world business. We refer to this approach as work based pedagogy that relies on authentic technology. By teaching students to use workplace technologies most effectively, we can better prepare them to work, communicate, and interact in the 21st-century workplace."

To this end, we have designed a Finance Technology course that integrates different sources of financial data (Bloomberg, EDGAR, and Yahoo Finance) with the Excel spreadsheet and modeling skills required in today's marketplace.  As Schlenker and Mendelson stated, "We believe that technology should not be used to make the classroom more virtual, but to make the classroom more corporate."

**TECHNOLOGY PLANNING**
Robert Morris University opened a new School of Business Building in the fall of 2011, and from the initial planning phase it became obvious that the School needed to not only incorporate, but fully embrace technology. After discussions with finance professors at other AACBS accredited schools, it was apparent that Bloomberg was not only on the leading edge of technology, but a truly required technology for all finance professionals.  In addition, as the planning process progressed, plans for the new business building were reviewed with the most important School of Business stakeholders. These stakeholders included students, faculty, administrators, and the department advisory boards believed to represent a good cross section of prospective employers.

Responses from the various constituencies ranged from practical to aesthetic. The student responses seemed to be more associated with the aesthetics and amenities of the building including dedicated meeting space for student group work, better access to technology, and more open classrooms. In fairness to the students it should be noted that up until this point, the majority of School of Business classes were held in a 40 year old building in which half the classrooms had no windows.

Faculty members reflected the same desires as the students. However, a number of the faculty went beyond the student requests to include business related items such as a meeting area or lounge with business publications and a business centric interactive news wall. They also suggested a dedicated area where business students could meet and talk about the business world. The finance department and to a somewhat lesser extent the Accounting department wanted an increase use of business technology which became focused on Bloomberg.

The Advisory board for the Finance Department (representing some of the biggest employers in the region) not only supported the use of Bloomberg, but also requested that EDGAR and Yahoo Finance be integrated into the curriculum. Also as one member of the Finance Department's Advisory board and a 1997 graduate of Robert Morris stated, "Graduating finance majors need more than a simple working knowledge of Excel. To the finance professional, the ability to utilize Excel is as important as the ability to read."

While all stakeholders desired to increase the ability of Robert Morris to provide industry with better prepared employees, the administration did have some more pragmatic goals. The School of Business is the oldest and largest school in the University and yet it had no signature building.

The new business building was to be that building and the "Trading Room" was to be the showcase. While no "trading" actually takes place in a trading room, the 40 foot multi-color raised display ticker and five computer controlled world clocks do increase the administration's ability to attract students.

For those institutions wanting to acquire Bloomberg and/or build a trading room with no plans on the horizon to start a completely new facility, there are other alternatives. Monmouth University's Leon Hess Business School (LHBS) has resided in its current location (Bey Hall) since 1991. Having consulted with stakeholders, including students, faculty, area employers and the School's Business Council, funds were sought and generously received to acquire one Bloomberg terminal in 2005. Unfortunately, with a business student population of approximately 1,100, it was difficult to fully integrate Bloomberg into the business curriculum.  While a multitude of finance courses lend themselves to Bloomberg applications (Coe, 2007), the only dedicated course the University offered was a one-credit Bloomberg certification class (Scott, 2010).

Having discussed and inquired about an actual trading room for many years, the LHBS was able to secure funding in 2011 with the actual room opening for classes in fall 2012.  Rather than build from the ground up, the room combined two former classrooms and cost approximately $350,000 to fully construct and outfit. Three walls consist of glass giving both building occupants and outside onlookers the feeling of exciting activity. As with Robert Morris University, the trading room provides Monmouth University administrators with an excellent marketing tool.

**COURSE DESIGN**
While requiring finance majors to take specific technology courses, neither Robert Morris nor Monmouth University required students to take a comprehensive course specific to finance applications. Even if required, no course existed. Outcomes assessment and loop closure are buzzwords embedded in accreditation nomenclature. With this in mind, the planning and development for a dedicated technology class for finance students began.

Reviewing input from all stakeholders and after numerous discussions, a broad outline of the material believed to be important to better prepare our students for the work place emerged. Special emphasis and consideration was given to this class since it is one of the first finance classes taken by students and hence it must also provide the basic skills needed for higher level finance courses.

The remainder of the paper is organized as follows: The Course Outline has been broken down into four component areas.  With each component is listed a sample assignment.  Both the midterm and final have out of class problem portions because the concepts and skills required for this class cannot be truly tested via an in class test alone.  In addition, we have included examples of these out of class tests portions as well as a data retrieval manual in the appendices.

**COURSE OUTLINE**
The course covers Forecasting, Modeling and Data Collection.  It is by integrating all of those functions into one class that we can provide our students with the training and knowledge not only needed in today's financial work place, but also the skills needed to perform to a higher standard in classes such as Investments, Corporate Finance, International Finance, and Financial Analysis. The course consists of four major component areas.

**COMPONENT 1**
As mentioned earlier, industry expectations require our students to have a sound working
knowledge of Excel and that is where we start this course. We assume no prior experience with
spreadsheet packages. The areas covered in component 1 include:

Weeks 1 - 2      Introduction to Excel
                 Parts of the Excel Screen        Navigating the Worksheet
                 Entering formulas                Built in Functions
                 Creating Graphs                  Printing

**Sample Assignment**: One possible assignment which incorporates simple Excel functions is to
provide the students a simple formula with which they are familiar. We provide them with a set
of inputs and ask them to build a simple model which will compute the formula. From that basic
model we then ask the students to do a simple "what-if" analysis (i.e. sensitivity analysis) through
Excel's Scenario Manager. One example of an assignment we have used follows below.

**Project Component 1**
================================================================
The Degree of Financial Leverage (DFL) formula:

$$DFL = \frac{EBIT}{EBIT - I - \left( PD \Big/ (1 - t) \right)}$$

| |
|---|
| EBIT = Earnings Before Interest and Taxes (Operating Profits) |
| I = Interest Expense |
| PD = Preferred Stock Dividends |

Assignment:
1.  Build a model to compute the Degree of Financial
    Leverage. Use the following initial values:

|       |   |          |
|-------|---|----------|
| EBIT  | = | $75,000  |
| I     | = | $30,000  |
| PD    | = | $18,000  |
| t     | = | 40%      |

   Print out the spreadsheet with the model. The spreadsheet should have row and column
   labels.

2.  Print out the spreadsheet again with the cell formula revealed.

3.  Use the Scenario Manager to perform a sensitivity analysis on EBIT. Use the following
    alternative values for EBIT:
        a.  EBIT = $65,000
        b.  EBIT = $85,000

   Print out a scenario summary table which includes the three scenarios.
================================================================

**COMPONENT 2**
The second component introduces students to three major sources of financial data and the means to start applying their financial knowledge.

Weeks 2 – 5    Financial Statements in Excel
                      Income Statement          Balance Sheet
                      Cash Flow Statement      Custom formats
              Common Sizing
              Creating a Cash Budget in Excel
                      Sales                  Purchases
                      Ending Cash balances    Cash shortages
                      Cash Excesses
              Financial Analysis with Excel
                      Ratios             Distress Predictors
                      Cross-sectional       Trends
              Report/Presentations

**Project Component 2**
==================================================================
The project for component 2 has students present a financial analysis of an instructor assigned company. Students are required to acquire financial information from three sources as follows:

              Securities and Exchange Commission Edgar System
              Yahoo Finance
              Bloomberg

Students are provided with a "manual" (Appendix 1) utilizing actual screen shots of each step needed to acquire the financial information from the three sources listed above. Technology has provided access to this information and the students that have the best skills at acquiring and utilizing financial information will have a competitive advantage in the marketplace.
==================================================================

**Midterm Exam**
Week 6
At this point in the course, a weeklong midterm exam is administered. The exam consists of an in-class multiple choice portion and a take home assignment that covers data retrieval and Excel usage. Appendix 2 provides an example of the take home portion of the exam.
==================================================================

**COMPONENT 3**
The third component of the course introduces students to financial forecasting and modeling.

Weeks 6-9     Financial Forecasting
                      Forecasting I/S         Forecasting B/S
                      Regression Analysis    Linear Trends
                      Statistical Significance

                  Utilizing historic Financial statement data retrieved from Bloomberg, students will produce a forecasted Income Statement and Balance Sheet.

Break Even and Leverage
        Break Even Points              Operating Leverage
        Financial Leverage             Combine Leverage
        Use of "Goal Seeking"

Utilizing historic financial statement data retrieved from Bloomberg, students will calculate the degree of both financial and operating leverage.

Time Value of Money and Excel
        Annuities                      Graduated Annuities
        Uneven Cash Flow Streams       Nonannual Compounding Periods

Students will be required to do all time value of money calculations in excel including creating an amortization table.

Common Stock Valuation
        Fundamentals                   Required Rate of Return
        Valuing Stocks                 Alternative Discount Models
        Relative Value Models          Preferred Stock Valuation

Utilizing historic stock price information students, will be required to calculate both the Required rate of return and beta's.

**Project Component 3**
================================================================
Forecasting assignments can range from simple Y,X regression to a fairly complex multi-variable time series regression as the basis of a semester project. For a more simple assignment students can be required to calculate a Beta as found in #1C in the midterm exam (Appendix 2). For a more challenging project students can be asked to retrieve a set of designated time series data (usually 6 – 8 variables). We have found that it is better to designate which data is to be retrieved. Because of statistical problems arising in a lot of economic and financial market data, we have found a corporation based set of data variables provides students a challenging project without turning the assignment into a statistical quagmire. One assignment we have used is to ask students to forecast market value or corporate E.P.S. based on time series of several accounting variables. The students acquire the required variables from Bloomberg. We require them to develop a forecasting model (regression equation) based on the data available. The assignment allows students to evaluate the quality of their regressions based on simple statistics like R-squared and coefficient P-values.
================================================================

**COMPONENT 4**
The last portion of the course concentrates on valuation, capital budgeting and the cost of capital.

Weeks 10-13    Bond Valuation using Excel
               Bond Return Measures  Yield Curves

               Cost of Capital Using Excel to calculate component costs
                    Flotation Costs          WACC Curve

        Capital Budgeting using Excel
                Estimating Cash Flows  Decision Criteria
                Sensitivity Analysis
        Modeling Risk within Capital Budgeting using Excel
                Statistical Concepts           Measurement of Risk
                Introducing Uncertainty

**Final Exam**
Week 14  Day 1 includes a multiple choice exam and Day 2 an excel spreadsheet accessed through Blackboard that must be completed in class covering the subjects of Component 4. Sample final exam questions are provided in Appendix 3.

**CONCLUSION**
The need for business students to be technologically proficient increases every year.  This class, specifically designed for finance majors provides the students with not only training in a number of technological areas, but the theory to utilize the information that the technology provides.  We believe this approach is better than an approach that utilizes an accounting information class and far, far better that requiring all students to take a single standardized class offered to all business students, but geared for management majors.

**REFERENCES**
AACSB International (2012). "Eligibility Procedures and Accreditation Standards for Business Accreditation," www.aacsb.edu/accreditation/standards-busn-jan2012.pdf.

Coe, Thomas S. (2007). "Using the Bloomberg Professional System for Finance Classes." *Journal of Financial Education*, Volume 33, (Spring), 48-62.

Schlenker, Lee and Adam Mendelson (2008). "Technology at Work." *BizEd*, Volume 7, Number 1 (Jan/Feb), 22-26.

Scott, Robert H. (2010). "Bloomberg 101." *Journal of Financial Education*, Volume 36, Number 1/2 (Spring/Summer), 80-88.

Stephens, Charlotte S. and Margaret T. O'Hara (2001). "The Core Information Technology Course at AACSB-Accredited Schools: Consistency or Chaos." *Journal of Education for Business*, Volume 76, Number 4, (Mar/Apr), 181-184.

**APPENDIX 1**
**DATA RETRIEVAL MANUAL – EDGAR, YAHOO FINANCE, AND BLOOMBERG**


**Section 1:  SEC and EDGAR**
The U.S. Securities and Exchange Commission provides free access to a multitude of company financial information through its EDGAR database.  A complete guide for researching public companies using EDGAR can be found at www.sec.gov/investor/pubs/edgarguide.htm.

To begin a specific company search, go to www.sec.gov/edgar/searchedgar/companysearch.html. On the page that emerges (see below), you can search for company information by entering a company's ticker symbol.

For example, if you enter IBM in the ticker box and click on "Find Companies," the following page will open that lists every report that IBM has sent to the SEC.



To retrieve a specific financial statement, you must look under the filings column for either a 10-q or 10-k. The 10-q provides a company's quarterly report for the date specified and the 10-k provides the annual report. The blue bar, "interactive data," indicates actual data that is downloadable into excel spreadsheets.

Paging down and clicking on IBM's 10-k annual report, the following screen emerges which lists the financial information available from the filing.

If you now click on Financial Statements, a drop down menu appears with choices such as Income Statement, Statement of Financial Position, and Balance Sheet. By clicking on Income Statement, the following screen appears:

**View Filing Data**

SEC Home » Search the Next-Generation EDGAR System » Company Search » Current Page

**INTERNATIONAL BUSINESS MACHINES CORP (Filer) CIK: 0000051143**

Print Document  View Excel Document

| Consolidated Statement of Comprehensive Income (USD $) In Millions, unless otherwise specified | 12 Months Ended | | |
|---|---|---|---|
| | Dec. 31, 2011 | Dec. 31, 2010 | Dec. 31, 2009 |
| Net income | $ 15,855 | $ 14,833 | $ 13,425 |
| Other comprehensive income/(loss), before tax: | | | |
| Foreign currency translation adjustments (Note L) | (693) | 712 | 1,675 |
| Net changes related to available-for-sale securities (Note L) | | | |
| Unrealized gains/(losses) arising during the period | (14) | 70 | 118 |
| Reclassification of (gains)/losses to net income | (231) | 0 | 64 |
| Subsequent changes in previously impaired securities arising during the period | 4 | 8 | |
| Total net changes related to available-for-sale securities | (241) | 78 | 182 |
| Unrealized gains/(losses) on cash flow hedges (Note L) | | | |
| Unrealized gains/(losses) arising during the period | (266) | 371 | (718) |
| Reclassification of (gains)/losses to net income | 511 | 203 | (94) |
| Total unrealized gains/(losses) on cash flow hedges | 245 | 573 | (812) |
| Retirement-related benefit plans (Note L) | | | |
| Prior service costs/(credits) | (28) | 28 | 375 |
| Net (losses)/gains arising during the period | (5,463) | (2,728) | 1,433 |
| Curtailments and settlements | 11 | 10 | (125) |
| Amortization of prior service (credits)/cost | (157) | (183) | (162) |
| Amortization of net gains/(losses) | 1,847 | 1,249 | 1,105 |
| Total retirement-related benefit plans | (3,790) | (1,624) | 2,626 |
| Other comprehensive income/(loss), before tax (Note L) | (4,479) | (260) | 3,671 |
| Income tax (expense)/benefit related to items of other comprehensive income (Note L) | 1,339 | 348 | (656) |
| Other comprehensive income/(loss) (Note L) | (3,142) | 87 | 3,015 |
| Total comprehensive income | $ 12,713 | $ 14,920 | $ 16,440 |

INTERNATIONAL BUSINESS MACHINES CORP (Filer) CIK: 0000051143 (see all company filings)

The Income Statement shown above (as it appears in the annual report) provides 3 years of information. If you highlight and copy the information, it can be directly pasted into an Excel spreadsheet as shown below. After some minor formatting adjustments, the income statement will be ready to utilize. The process can be repeated for the other financial statements.

| Consolidated Statement of Comprehensive Income (USD $) | | 12 Months Ended | | |
|---|---|---|---|---|
| In Millions, unless otherwise specified | | Dec. 31, 2011 | Dec. 31, 2010 | Dec. 31, 2009 |
| Net income | | $15,855 | $14,833 | $13,425 |
| Other comprehensive income/(loss), before tax: | | | | |
| Foreign currency translation adjustments (Note L) | | -693 | 712 | 1,675 |
| Net changes related to available-for-sale securities (Note L) | | | | |
| Unrealized gains/(losses) arising during the period | | -14 | 70 | 118 |
| Reclassification of (gains)/losses to net income | | -231 | 0 | 64 |
| Subsequent changes in previously impaired securities arising during the period | | 4 | 8 | |
| Total net changes related to available-for-sale securities | | -241 | 78 | 182 |
| Unrealized gains/(losses) on cash flow hedges (Note L) | | | | |
| Unrealized gains/(losses) arising during the period | | -266 | 371 | -718 |
| Reclassification of (gains)/losses to net income | | 511 | 203 | -94 |
| Total unrealized gains/(losses) on cash flow hedges | | 245 | 573 | -812 |
| Retirement-related benefit plans (Note L) | | | | |
| Prior service costs/(credits) | | -28 | 28 | 375 |
| Net (losses)/gains arising during the period | | -5,463 | -2,728 | 1,433 |
| Curtailments and settlements | | 11 | 10 | -125 |
| Amortization of prior service (credits)/cost | | -157 | -183 | -162 |
| Amortization of net gains/(losses) | | 1,847 | 1,249 | 1,105 |
| Total retirement-related benefit plans | | -3,790 | -1,624 | 2,626 |
| Other comprehensive income/(loss), before tax (Note L) | | -4,479 | -260 | 3,671 |
| Income tax (expense)/benefit related to items of other comprehensive income (Note L) | | 1,339 | 348 | -656 |
| Other comprehensive income/(loss) (Note L) | | -3,142 | 87 | 3,015 |
| Total comprehensive income | | $12,713 | $14,920 | $16,440 |

**Section II:  Yahoo Finance**
While Yahoo finance does not present the depth or breadth of information available from Bloomberg or the SEC with EDGAR, it does provide a relatively simple process to obtain basic financial information. To find information on IBM, go to Yahoo's home page at http://finance.yahoo.com.
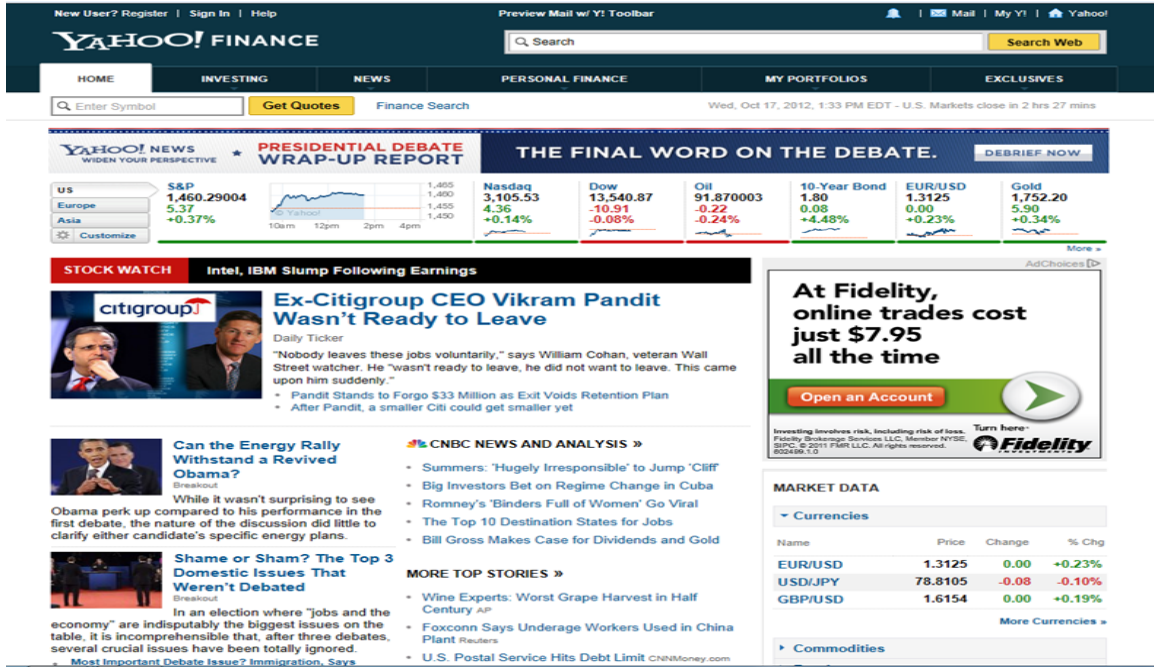


In the upper left corner type IBM in the box next to "Get Quotes."  The screen below will appear providing current equity price and volume activity.
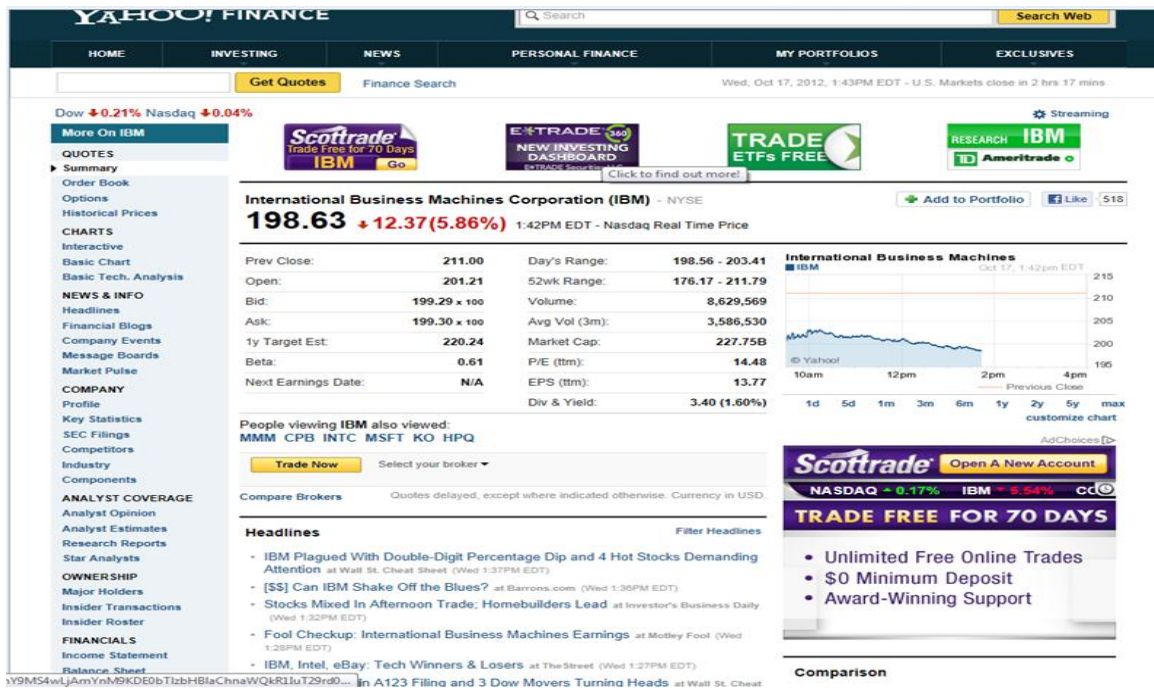
Looking to the left column under "Financials," you can click on "Income Statement" bringing up the following screen:



As with EDGAR, you can now copy and paste the income statement data into an Excel spreadsheet. You can then go back to the second screen under "Financials" and obtain the Balance Sheet and Cash Flow Statements.

**Section III: Bloomberg**
The Bloomberg Professional System is used throughout the financial services industry as well as in academia. It provides a plethora of information not easily accessible in one spot. However, using a Bloomberg terminal can be intimidating for a first time user.  For example, when first observed, the keyboard looks somewhat foreign.  Although it may look vastly different from a normal keyboard, there are similarities between the two.   First, it is a QWERTY system. This means that the letters are placed in the standard QWERTY form as is a regular computer keyboard on any PC or laptop. Another troubling aspect of the keyboard is the color coordination system. At first glance, there seems to be no rhyme or reason to why the colors on the keyboard are differentiated. However, upon further understanding of the Bloomberg System, you will see that these are shortcuts or for convenience purposes.

Many of the concerns regarding use of the Bloomberg terminal will be discussed in the following tutorial. If you have any problems or concerns that aren't covered in the following pages, you can easily find any topic or issue by looking up the Bloomberg Guide or by pressing the HELP button twice for live assistance. The live assistance provided is an instant chat with an analyst or associate from Bloomberg. The authors have used the live assistance on many occasions and recommend interacting with the live Bloomberg representative via the instant messaging system.

**Accessing Bloomberg**
The first step in obtaining information from Bloomberg is to become a registered user. Using a University Bloomberg terminal, click on the Bloomberg Icon of the Window's Desktop.



You have just entered the Bloomberg Program.  Next you must press enter to create an account.

**Creating an Account**
From the Bloomberg Home page, press enter to begin the login process.  It should bring you to the following page.  From this page, please click, "Create a New Login".
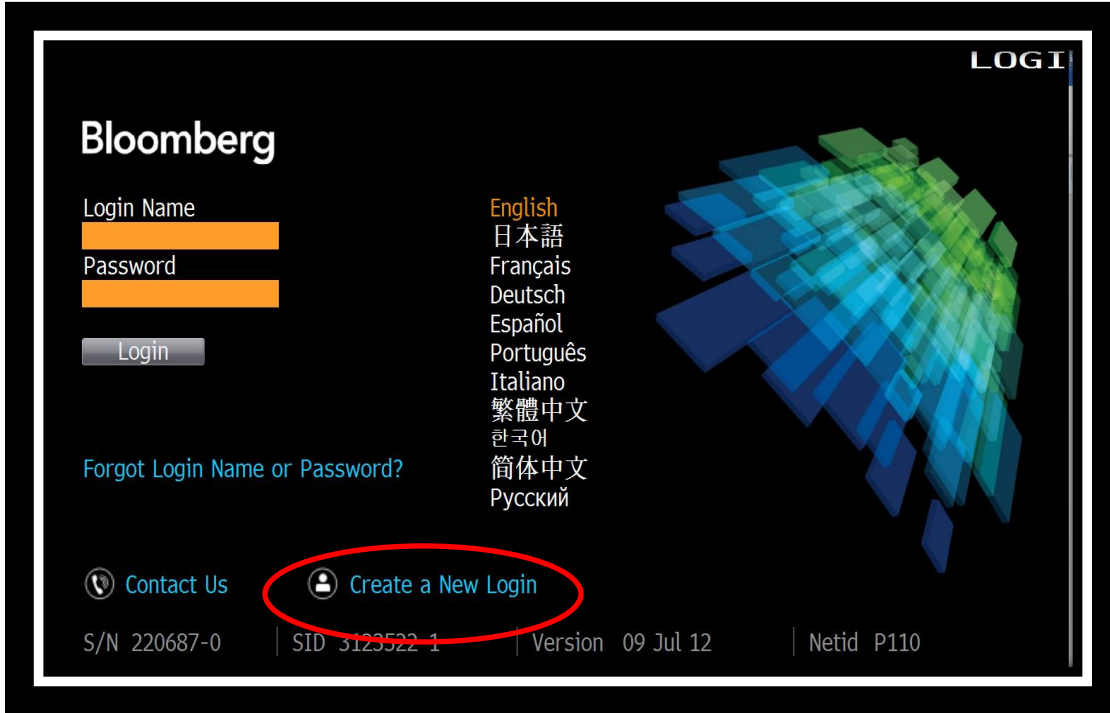
From here please select your language, select YES that you are creating the login for yourself, and select NO, you have never been a Bloomberg Client. When you are done, click "Continue".



On the next page, enter your Full Name and choose a password. You must give Bloomberg two phone numbers - a work number and a mobile number. You can use any of your phone lines, or even a duplicate mobile number. For your Corporate Email Address, you can use your University Email Address or any other address that you'd prefer to receive Bloomberg notifications.

After completing the screen above, the final step of the process is account validation. You must choose one of the phone numbers that you put into the system to receive either a call or an SMS text message. Then click send code. After you receive your code via call or text (in one or two minutes), input the code and press Create Login.

Bloomberg will give you an account name. If you would prefer a different Login Name, you can press Change your login. Otherwise, go to the bottom of the screen and Click "Click here to return to the Login Screen". You have finished creating your Bloomberg Account.

**Bloomberg Basics**
Bloomberg is a command-driven system. You must type commands into the system to begin your search for information. The Bloomberg keyboard has four types of keys. Green keys are command keys that allow you to proceed. For instance, the <GO> or enter key is typed after any command. The red keys, like escape for instance, allow you to stop the current command (<CANCEL>) and to log out of the system (<CONN DEFUALT>). Yellow keys allow you to specify a market sector. For instance, when looking up a stock, you would use the <EQUITY> key. The final set of keys are the regular keys on the keyboard.
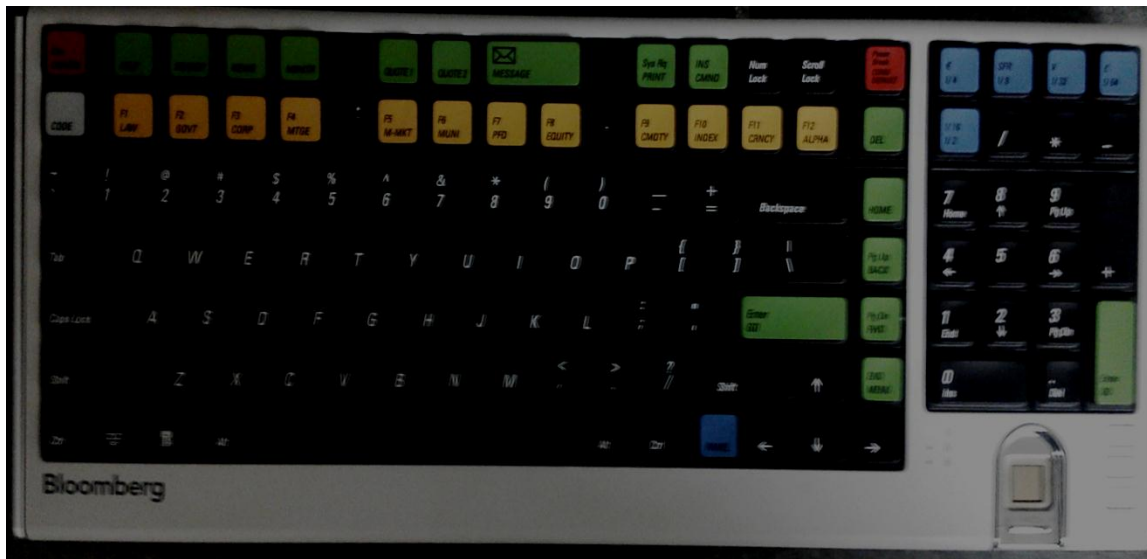


**Commands**
If you ever need help on Bloomberg, you can press the green <HELP> key to find relevant information in regard to your current inquiry. You can press <HELP> twice to contact the Bloomberg Help Desk. To find the cheat sheet with command shortcuts, you can always type "CHEA" in the command bar, followed by <GO>.

If you wanted to look up a specific security on Bloomberg, you would begin by first looking up the ticker. To do so, you would type <EQUITY>TK<GO> in the command bar. Doing so takes you to the stock ticker lookup screen.

You can then type in the name of the company you are searching for in the <Search> bar followed by <GO>.

**Basic Equity Research**

To conduct research on equities, you should begin by typing the following command into Bloomberg: "Stock ticker" "Nation" <EQUITY> <GO>.  For instance, to look up Microsoft, one would type "MSFT US" <EQUITY> <GO>.  Doing so takes you to the Equity Analysis Home Screen.

From here, you can navigate with your mouse to search for any and all information you may need in regard to the company. Displayed in the menu below are the different types of functions, listed by their headings.  Underneath each heading are the most popular functions in their category. Clicking on the heading allows you to view all functions related to the category.  The following shows the equity security menu:

**Company Overview**
These functions give you a basic and descriptive overview of your chosen equity. Selecting "Description" will allow you to view reports, an overview of the company, and basic information along with a description. In this category, you can see all news related to this company, as well as any relevant filings.



As an example of the depth and breadth of information available within Bloomberg if you click on Steven Anthony Ballmer the CEO of Microsoft you get the following screen:

**Company News**

As mentioned above, clicking on News takes you to the screen below which lists all published information on the company you have chosen.



**Company Analysis**

In this menu, you can find Income Statements, Balance Sheets, Supply Chain Analysis, and all relevant information regarding valuation, market, and credit risk analysis. The following screen is an example of the Equity Ownership tab.

**Research and Estimates**
From here you can view all data regarding estimates and analyst estimates.  You can find the general consensus for the company's next quarter, earnings history, trends, and even analyst recommendations.
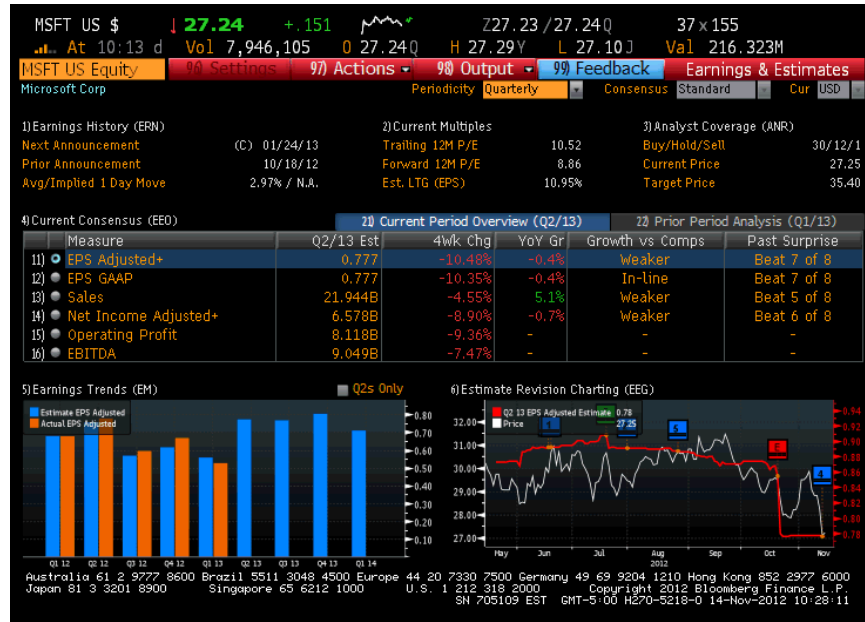


**Comparative Analysis**
From here you can see how the company you have chosen performs in comparison to its peers. You can customize the tables to compare companies based on any standards available through Bloomberg.
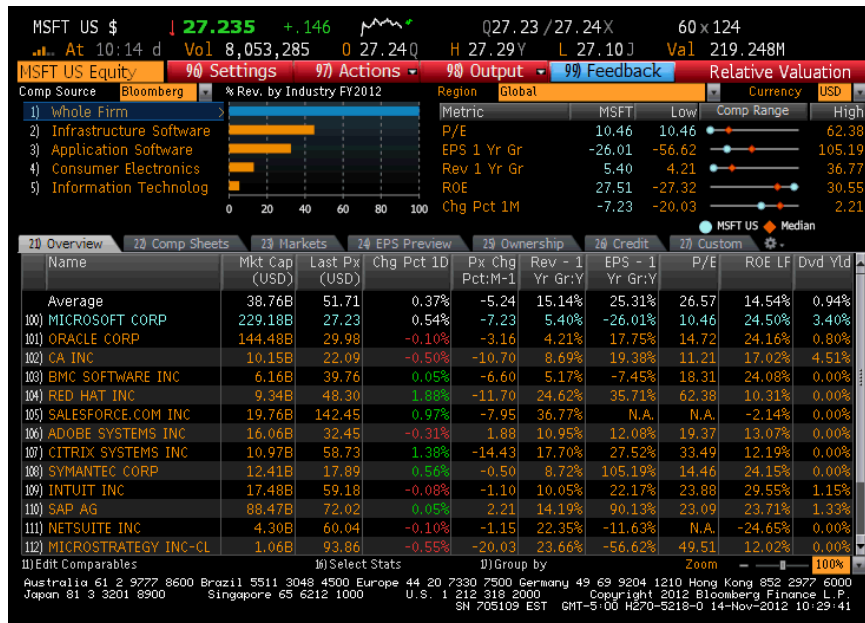
**Chartings and Reporting**
In here, you can find Price History graphs, Reports on your equity, and all related technical analysis.



**Financial Analysis**
As the screen below shows, the financial analysis link provides ratios, highlights, cash flow information and much more.

**Trade Analytics**
Under this section the screen below represents Broker Rankings which lists in order the brokers handling the most shares of the stock. Other screens look at market depth and more.



**Options Monitor**
This is the last section within the Equity Security Menu and tracks all options available on the given stock.

**Bloomberg API (EXCEL Tools)**

Bloomberg information can also be accessed directly from Microsoft Excel.  This makes it very easy to import data into the program for further data analysis and for formatting presentations.  In order to use the Bloomberg Excel Plugin, you must be on a Bloomberg Terminal.  In addition, you must be logged into Bloomberg and have excel open.  You will notice that a new tab is accessible at the top of your window.
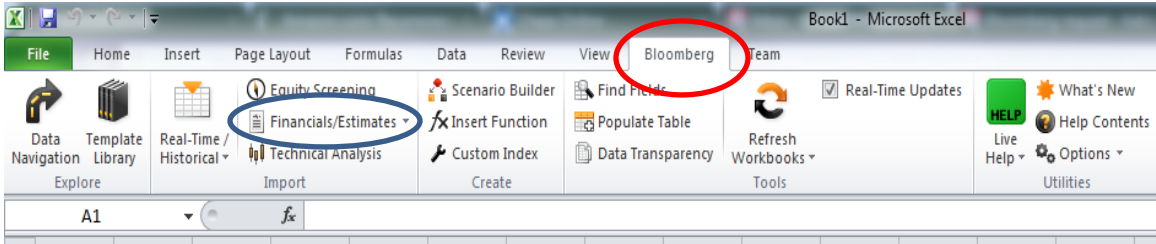


**Importing Financial Statements Into Bloomberg**
In order to import Balance Sheets into Bloomberg, you should first click on the Finals/Estimates button.  It can be seen in the blue circle in the diagram above.  Afterwards, you should select Fundamental data.
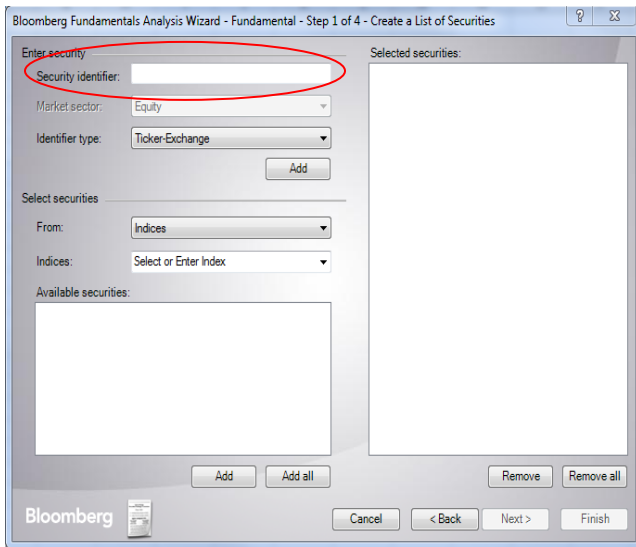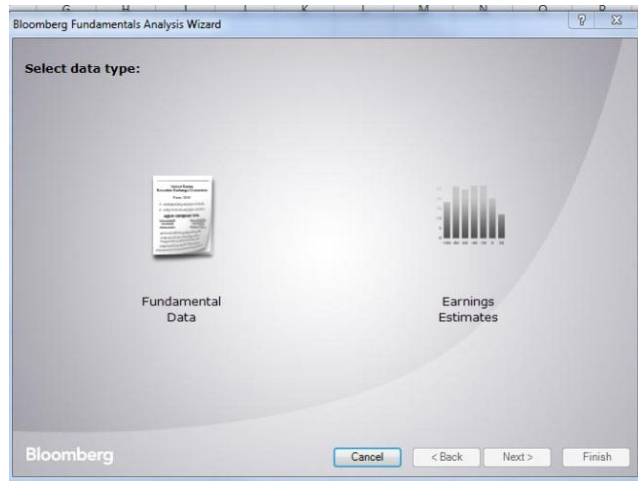




A screen will appear.  Input the ticker of the security you are researching in the security identifier field and then select Add.  You may add as many securities as you would like.   To add multiple securities, you can utilize the bottom of the page and import securities from an excel list or an indice.  When you have selected your securities, click Next.

You will now see the selection screen. From here, you can choose what data you would like to have transferred from the Financial Statements to your excel spreadsheet. Under the Fundamental data selection, you can choose individuals fields to be displayed. However, if you would like to have a Standardized Financial Statement, select Standardized Data. From here you can choose the type of financial statement you would like to have imported into your spreadsheet. You may select multiple balance sheets if you'd like. When you have completed your selection, click Next.
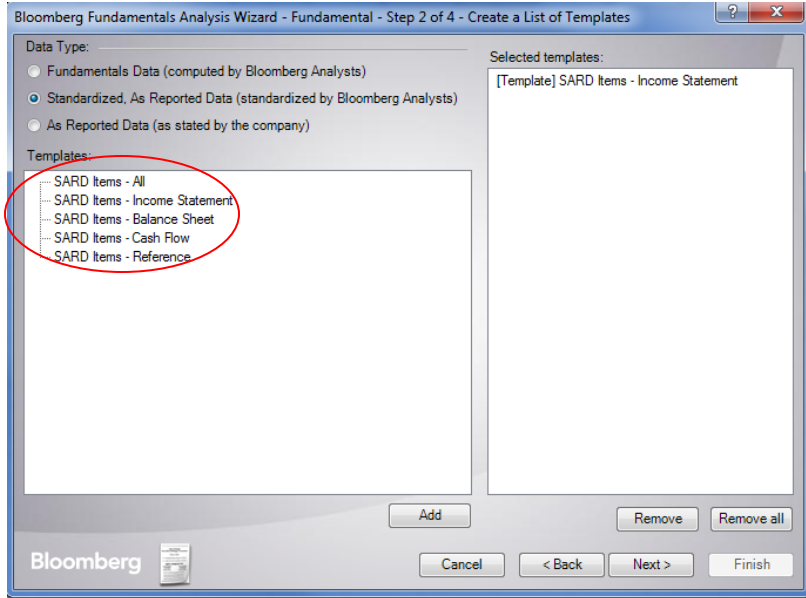
Bloomberg will now prompt you to set the parameters of your Financial Statement. You can set the order in which they are displayed, the currency, the status of your filings, the periodicity, and the Calendar. In the Time Frame, you can select the period of time you would import your balance sheets from.
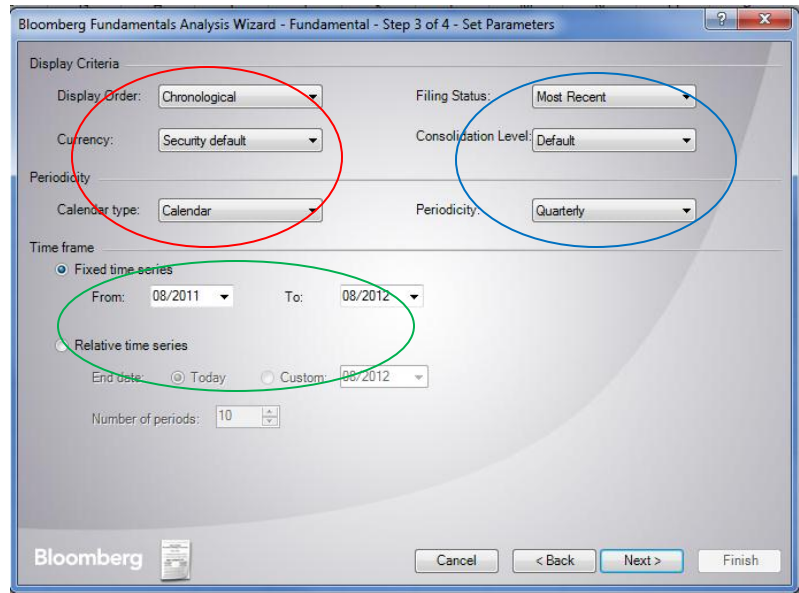
Finally, Excel will ask you how to layout your spreadsheet. You can customize this however you like.

After you press Finish, Bloomberg will create formulas in your spreadsheet that pull data from Bloomberg and inputs it into you spreadsheet.

**Please note:** These are merely equations imported into your spreadsheet. If you save the data and try to open it on a normal computer, the formulas will give you invalid numbers. In order to keep your numbers, you must highlight your entire spreadsheet and copy it. Next, move into another spreadsheet and instead of clicking paste, click the arrow underneath of paste (Paste Values Only). This will copy your numbers and save them for you so that you may edit your data on any computer.

When you are done, your spreadsheet should look something like this:

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Ticker | MSFT US Equity | | | | |
| 2 | Currency | USD | | | | |
| 3 | Name | MICROSOFT CORP | | | | |
| 4 | Start Date | 8/1/2011 | | | | |
| 5 | End Date | 8/21/2012 | | | | |
| 6 | Periodicity | Calendar Quarterly | | | | |
| 7 | Display Order | Chronological | | | | |
| 8 | Data Type | Standard Labels | | | | |
| 9 | Reported Status | Most Recent | | | | |
| 10 | Consolidation Level | Default | | | | |
| 11 | | | | | | |
| 12 | Date: | | CQ3 2011 | CQ4 2011 | CQ1 2012 | CQ2 2012 |
| 13 | Status: | | Original | Original | Original | Original |
| 14 | Balance Sheet | | | | | |
| 15 | Current Assets | | | | | |
| 16 | Cash and Equivalents | ARD_CASH_AND_EQUIVALENTS | 12,881.00 | 10,610.00 | 6,388.00 | 6,938.00 |
| 17 | Short-Term Investments | ARD_ST_INVEST | 44,522.00 | 41,126.00 | 53,141.00 | 56,102.00 |
| 18 | Allowance For Doubtful Accounts | ARD_ALLOW_FOR_DOUBTFUL_ACCTS | 1,119.00 | 321 | 322 | 389 |
| 19 | Accounts Receivable - Trade | ARD_ACCTS_RECEIVABLE_TRADE | 10,153.00 | 13,643.00 | 10,961.00 | 15,780.00 |
| 20 | Inventories | ARD_INVENTORY | 2,270.00 | 1,351.00 | 1,412.00 | 1,137.00 |
| 21 | Deferred Income Tax Asset (Short-Term) | ARD_DEFERRED_INC_TAX_ASSET_ST | 2,190.00 | 2,169.00 | 2,350.00 | 2,035.00 |
| 22 | Other Current Assets | ARD_OTHER_CURRENT_ASSETS | 3,255.00 | 3,614.00 | 2,608.00 | 3,092.00 |
| 23 | Total Current Assets | ARD_TOTAL_CUR_ASSETS | 75,271.00 | 72,513.00 | 76,860.00 | 85,084.00 |
| 24 | Noncurrent Assets | | | | | |
| 25 | Accumulated Depreciation | ARD_ACCUMULATED_DEPREC | 10,209.00 | 10,546.00 | 10,952.00 | 10,962.00 |
| 26 | Property Plant & Equipment - Net | ARD_PROPERTY_PLANT_EQUIP_NET | 8,033.00 | 8,010.00 | 8,225.00 | 8,269.00 |
| 27 | Long Term Investments | ARD_LT_INVEST | 8,576.00 | 7,550.00 | 9,068.00 | 9,776.00 |
| 28 | Goodwill | ARD_GOODWLL | 12,537.00 | 19,670.00 | 19,698.00 | 13,452.00 |
| 29 | Other Intangible Assets | ARD_OTHER_INTANGIBLE_ASSET | 1,026.00 | 2,581.00 | 2,756.00 | 3,170.00 |
| 30 | Other Noncurrent Assets | ARD_OTHER_NONCURRENT_ASSET | 1,972.00 | 1,919.00 | 1,403.00 | 1,520.00 |

## Retrieving Historical Data

You may also retrieve Historical Data through Excel using the Bloomberg Plugin.  To begin, select "Real-Time/Historical Data".
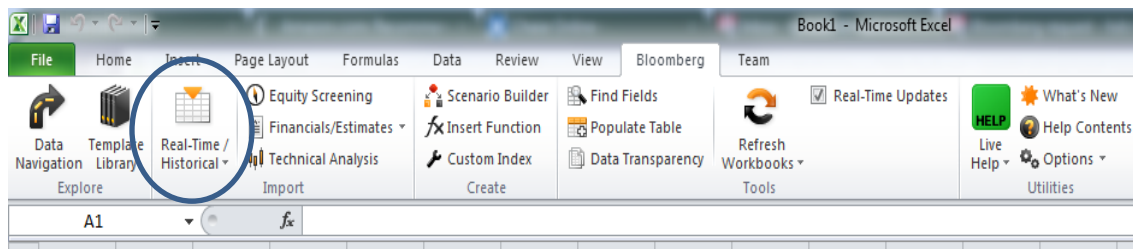
Here, you may choose the type of data you would like to retrieve. To retrieve historical data, choose Historical End of Day.

Next, like in the previous exercise, you may choose the security/securities you wish to retrieve data on. Like before, you can create a list of tickers in a spreadsheet. When you come to this part of the wizard, select that data and import it into your selected securities list.



On this screen, you can pick the fields you wish to import into your spreadsheet. For instance, if you wanted to retrieve the Last Price (end of day pricing), you can type Last Price in the Search Text field to find your intended field. When you have selected your field, click Add, and it will move to the right hand side of the screen to your selected fields.
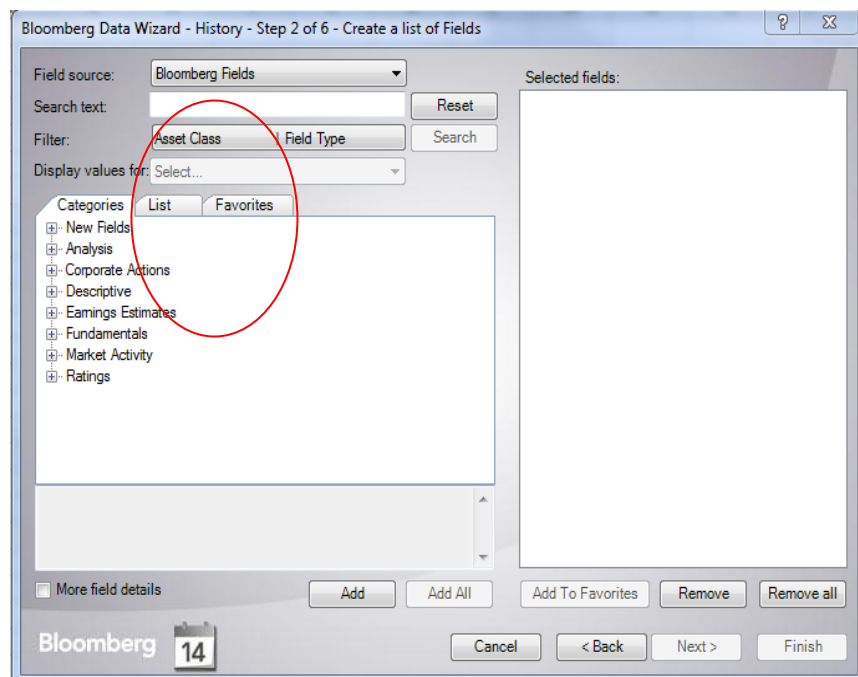
You may also search for your field by browsing through the categories listed on the page. When you have added all of your desired fields to the list, you can then click Next.
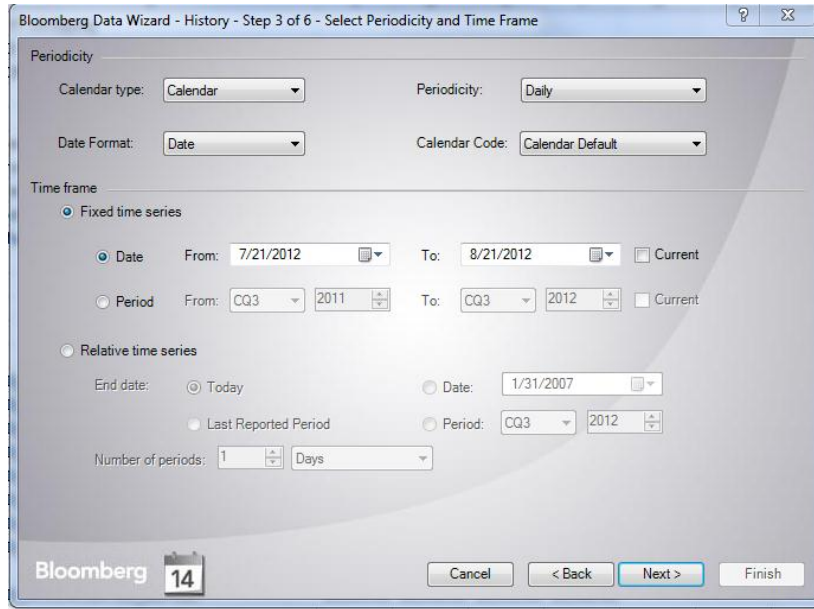
On this page, you can select the periodicity of the data, and the time frame. For example, if you wanted to select all data from July 21$^{st}$, 2012 to August 21$^{st}$, 2012, you would put that into the date fields. If you wanted to have the data displayed based on daily information, daily should be selected in the periodicity field. When you have your parameters set, click Next.

On the next page, you can exclude non-trading days, and select to view either the price or yield. On the page following, select yes under "Follow DPDF Settings".

Finally, you can set your layout options. When you have made the adjustments to your layout, click Finish.

When finished, the spreadsheet will look something like this. As you can see, Bloomberg pulled all end of day pricing data from the chosen dates into the spreadsheet. You can include more fields in the wizard to gather more data.

From this point, you can use Excel to analyze your data further or put it into a presentation format.

**REMEMBER:** You must copy the data and under the paste menu, click on paste special and click values. The original numbers are actually formulas accessing Bloomberg data.

|  | A | B | C |
|---|---|---|---|
| 1 | MSFT Equity |  |  |
| 2 | Date | PX_LAST |  |
| 3 | 7/23/2012 | 29.28 |  |
| 4 | 7/24/2012 | 29.15 |  |
| 5 | 7/25/2012 | 28.83 |  |
| 6 | 7/26/2012 | 29.16 |  |
| 7 | 7/27/2012 | 29.755 |  |
| 8 | 7/30/2012 | 29.64 |  |
| 9 | 7/31/2012 | 29.47 |  |
| 10 | 8/1/2012 | 29.41 |  |
| 11 | 8/2/2012 | 29.19 |  |
| 12 | 8/3/2012 | 29.75 |  |
| 13 | 8/6/2012 | 29.95 |  |
| 14 | 8/7/2012 | 30.26 |  |
| 15 | 8/8/2012 | 30.33 |  |
| 16 | 8/9/2012 | 30.5 |  |
| 17 | 8/10/2012 | 30.42 |  |
| 18 | 8/13/2012 | 30.39 |  |
| 19 | 8/14/2012 | 30.13 |  |
| 20 | 8/15/2012 | 30.2 |  |
| 21 | 8/16/2012 | 30.78 |  |
| 22 | 8/17/2012 | 30.9 |  |
| 23 | 8/20/2012 | 30.74 |  |
| 24 | 8/21/2012 | 30.8 |  |
| 25 |  |  |  |

**APPENDIX 2**
**TAKE HOME PORTION OF MID TERM EXAM**

This portion of the midterm exam tests a student's ability to retrieve and utilize financial information from different sources.  Each student has been assigned a ticker symbol in the attached table. Your work must be e-mailed to the instructor no later than _____.
Required:

1.  Download 5 years of monthly returns from Yahoo Finance into an Excel Spreadsheet
    For both your stock and the S&P 500:
    A.  Graph the monthly returns and the S&P 500.
    B.  Find the mean return and STD of your stock and the S&P 500.
    C.  Utilizing the regression function find the Beta of your stock.

2.  Download the last 10 years of annual B/S, I/S, and C/F statements from Bloomberg into an Excel Spreadsheet. Delete information not needed.
    A.   Create a horizontal and vertical Common size B/S and I/S.
    B.   Utilizing your spreadsheet calculate 3 liquidity, 3 profitability, 3 debt, and 3 investor analysis ratios.
    C.   Compare the calculated ratios with industry.
    D.   Utilizing the I/S and regression estimate the next 10 years of sales and graph the results.

3.  Download the last 10 years of annual B/S, I/S, and C/F statements from SEC/Edgar into an Excel Spreadsheet. Delete information not needed.
    Compare to the Bloomberg information and attempt to explain any deviations.

4.  Analyze the results and prepare a 1 paragraph analysis for each section.
    All assignments are electronically submitted so spreadsheets can be reviewed for formulas.
    Each student is assigned a different company/ticker symbol as follows:

| Student Name | Firm Ticker Symbol |
|--------------|--------------------|
| 1            | cost               |
| 2            | esrx               |
| 3            | mitsy              |
| 4            | dell               |
| 5            | dtv                |
| 6            | eric               |
| 7            | rimm               |
| 8            | gild               |
| 9            | teva               |
| 10           | amgin              |
| 11           | amazonr            |
| 12           | vod                |
| 13           | orcl               |
| 14           | msft               |
| 15           | nwsa               |

### APPENDIX 3
### Sample Final Exam Questions

1. A financial model should be flexible.
> a. What is meant by flexibility in a financial model?   (4 points)
> b.  As the flexibility of the model increases, what is the usual impact on the size and the complexity of the model?   (6 points)

2.  A well known finance textbook claims using scenario analysis will assist a manager in analyzing uncertainty (risk) in financial decisions.  How would scenario  analysis help a manager in making better decisions under uncertainty?  (8 pts.)

3.  a.  Explain how sensitivity analysis is performed.   (5 points)
> b.  For what purpose do decision makers use sensitivity analysis?   (3 points)
> c.  How does the use of sensitivity analysis help improve the accuracy of  forecasts?

4.  Using the following Scenario Summary table developed from the attached inventory model (in the Spreadsheet Package):

| Scenario Summary | | Original case | New case |
|---|---|---|---|
| **Changing Cells:** | | | |
| **Carry Cost (%)** | $B$5 | 0.2 | 0.28 |
| **Result Cells:** | | | |
| **E.O.Q.** | $F$2 | 5069 | 4284 |

> a.  Calculate the Degree of Sensitivity.   (6 points)
> b.  Explain the meaning of your answer.   (4 points)

5.  Assume Congress creates a new MACRS class of twelve year assets. As a result you add this class to the Lookup Table in the capital budgeting model in the Spreadsheet Package. Write a new cell formula for the Year 4 Depreciation. That is, write down the new formula that would be in cell H23.  (8 pts.)

6.  Using the capital budgeting model accompanying the exam in the Spreadsheet package, what numerical value will the computer put in the following cells?  (16 points)
> a. =IF(C6=7,C12,C10)*($C$4+$C$5)
> b. =SUMPRODUCT(F10..F13,B22..B25):
> c. =IF(C3=3,D9*$C$2,IF(C3=5,D10*$C$2,D11*$C$2))
> d. =CHOOSE($C$3,C12,D12,E12,F12,G12,H12,I12,J12,K12,L12,M12)

7.  In class I presented certain guidelines or suggestions to be followed when building a model. For both of the following explain the meaning of each term and how a financial model builder would be concerned with it.   (8 points)
> a.  "Hard coding"
> b.  Parallel structure

**APPENDIX 3 - Continued**
**Sample Final Exam Questions**

8. The *Pro Forma* model is attached in the Spreadsheet Package. In the **Original Scenario** the Additional Funds Required is $13,750.

    a. What does that result indicate to the financial manager? (3 points)

    b. The manager wishes to apply the "Goal Seek" function to this model. In general how does a manager use the "Goal Seek" function?
    (5 points)

    c. In the **Revised Scenario** the manager has used the "Goal Seek" function and set the Additional Funds Required to $5,000. What percent-of- sales information does the manager now have? (5 points)

9. For the attached capital budgeting model write a cell formula which will calculate the project's Profitability Index. {The Profitability Index is the present value of the future cash flows divided by the initial (time=0) investment.} (6 points)

10. Using the attached spreadsheet (the next page) with the given input section, develop a model for a *pro forma* balance sheet. Write your model on that spreadsheet. (10 points)

**Cumulative Final Exam**
The exam will consist of the complete analysis of one randomly assigned S&P 500 or NASDAQ company. Questions will center on the 4 component areas of the course.