

# A HOUSING FINANCE CASE STUDY: BUYING AND SELLING A HOME

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## Abstract

*The purpose of this academic note was to present a case study that was a problem-based team activity about buying and selling a home. The case study is a realistic approach for applying research techniques, decision-making skills, and critical thinking analyses. Case studies are successful because students take the roles of characters in the "story" and actually conduct "first-person" investigations of the problem. The case study presented in this note was in three parts and completed over a nine week period. The students discussed reading material, used financial calculators on the Internet, and made decisions that influenced future decisions as they proceeded through the case study. Teaching with the case study method entails that the instructor gives up some control of the class and instills a responsibility for learning within the student teams. To be effective, the instructor will model, coach, and structure the assignments. The case study underlies the critical thinking process because the students interact with each other by asking questions, finding and calculating possible solutions, evaluating alternatives, and making judgments. Assessment involved informal exchange between teams as well as formal rubrics used by the instructor for grading the reports. The ultimate assessment is the opinion of an internship sponsor or a potential employer who views the case study in a student's portfolio and learns of the student's knowledge and practice in the field of housing finance.*

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## Introduction

The purpose of this academic note was to present a case study developed by the author over the past eight years for a college junior/senior level housing course, Housing Finance and Policy. The problem-based activity involved 40 students divided into 20 teams buying and selling homes. According to McKeachie (2002) the case study is an example of problem-based learning that is centered on the assumption that students are motivated to solve problems and that they will seek

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and learn what is needed to succeed. Case-based instruction provides a context for authentic learning environments with real-world problems that motivate students to find the answers (Ciardiello, 1995). Ciardiello listed four factors highlighted by the Harvard Business School case method approach: (a) it is a situational, real world approach, (b) it is a narrative, story approach, (c) it focuses on active participation, and (d) it requires decision making.

Geertsen (2003) in his call for higher level thinking, challenged instructors to make a concerted effort to integrate thinking habits with factual content. He felt that we need to focus on higher level thinking and model it in our courses if we want students to develop the skills to think critically, reflectively, and inquisitively in a wide array of situations. He suggested that problem-based learning organized around cases can develop higher level thinking with analysis, synthesis, and transfer (Geertsen, 2003).

### ***A Story Approach***

Case study pedagogy is actually very old, based on storytellers who told a narrative (case) to promote children's individual discovery of wisdom, knowledge, and the development of thought processes (McDade, 1995). The goals of ancient storytellers are similar to case study goals today—to foster critical thinking and reflections so that people learn how to learn on their own. According to McDade (1995) a case is a document specifically created to foster discussion and detailed analysis. A case is a story carefully designed to include facts and ends before the conclusion so that students can provide the analysis and speculate on possible conclusions. The case study is a realistic approach for applying research techniques, decision-making skills, and critical-thinking analyses. Case studies are successful because students take the roles of characters in the “story” and actually conduct “first-person” analysis of the problem. According to Brookfield (1995) role playing focuses on the ability to take on the perspectives of others. Role playing brings feeling and emotion into the topic; it makes the topic real to people who have probably never been involved with the problem under study. Case studies model research and professional practice and stretch students into new levels of thinking (McDade, 1995).

The case study presented in this note includes brief stories of three families (the Albert's, Beal's, and Cole's) that are in different stages of the life cycle, have different socio-economic characteristics, and have different compositions. They also have different preferences, goals, and plans for the future. The numbers (incomes, debts, and savings) should be changed each semester to discourage cheating. The fourth family (Duff) is the demo family, which is not changed to minimize prep time for the exercises using the demo family each semester. The four family descriptions are given in Figure 1.

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**Family A: The Albert Family**

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Jim and Karen are both 32 years old. They have two daughters. Kara is ten and Alyssa is eight. The Albert's are living in a relatively new two bedroom mobile home. They want to buy a single-family home with at least three bedrooms.

Jim is a floor installer and makes an annual salary of \$41,000 and Karen is a lab technician in the medical clinic and makes an annual salary of \$35,000. Their health insurance is paid for through Karen's work. They have a small retirement plan through both of their employers and they each contribute 7% of their annual income to retirement. They also save \$30 a month for their daughters' educations. The Albert's have an emergency fund of \$1,200.

They just bought a new car and pay \$330 a month for car payments on a 36 month contract. They have \$2,100 in credit card debt. Karen is still paying off her student loans of \$95 per month. Over the past three years, the Albert's have saved \$9,200 in short-term CDs and expect to have a profit on the sale of their mobile home of \$12,000.

*Short term goal:* The Albert family would like to purchase a nice three bedroom home for their family with a two car garage.

*Long term goals:* The Albert's would like to help fund at least \$10,000 of each of their daughters' educations, save more towards retirement, and get out of debt.

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**Family B: The Beal Family**

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Craig and Janette are both in their early 40s. They have one child, Ben who is 15. The Beal's are living in a small three bedroom home and want to buy a different home, preferably a town house because they are tired of doing yard work and shoveling snow.

Craig is a high school teacher and coach and makes \$58,000 a year. He also works with a roofing crew in the summer and adds an additional \$5,000 to his yearly earnings. Janette works part-time as a secretary and earns \$28,000 a year. Both have fairly secure jobs and do not expect their positions to be cut in times of budget difficulties. Craig has a retirement plan and health insurance with his school district. He pays \$105 a month to expand the health insurance to cover his family. Janette does not have a retirement plan with her employer but does pay into social security.

They are paying for a car they bought last month. They pay \$350 a month for the car payment and have 35 monthly payments left on the contract. They have \$900 in credit card debt. Over the past five years, the Beal's have saved \$8,000 in a savings account and hope for a profit from the sale of their current home of \$25,000 because they remodeled it over the past 10 years.

*Short term goal:* The Beal family would like to purchase a nice three bedroom town house with a family/recreation room and a two car garage.

*Long term goals:* When Ben grows up, they would like to travel and save more towards retirement.

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**Family C: The Cole Family**

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Randi is a 30 year old single mother of two children. Sally is five and Brian is seven. The Cole's are living in a two bedroom apartment with no outside play space for the children.

Two years ago, Randi took a job as an accountant and makes \$49,000 a year. She has a retirement plan and health insurance with her company.

Her car is paid for. She has no credit card debt. Over the past two years, Randi has saved \$8,000 for a downpayment on a home. Randi's mother is retired and collects social security. She lives in an apartment in the same building and watches the children while Randi is at work. She would like to move in with them and is willing to help with the downpayment on the home they buy. She has saved \$16,000.

*Short term goal:* The Cole family would like to purchase a nice four bedroom home with a two car garage, preferably something that has a nice yard for the children.

*Long term goal:* Randi would like to start saving for her children's future educations.

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**Family D: The Duff "Family" (class demo family)**

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Henry Duff is a single guy living with a big black dog named Gus. Currently, Henry is living in a two bedroom town house and would like to buy a modest home because he is tired of paying rent. Also, Gus would like better accommodations!

Henry is an electrical engineer and makes \$60,000 a year. He pays \$400 a month for his new car (24 month contract) and pays about \$400 a month towards his credit card debt (he took a vacation to Spain and has \$6,000 charged on his card). Henry has saved over \$40,000 in short-term CDs and is willing to use \$25,000 for the downpayment and closing costs on a home.

*Short term goal:* Buy a modest, yet good looking home, with good resale potential. Must have a fenced in yard or one that can be fenced in for Gus.

*Long term goal:* Take more international vacations.

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## Figure 1. Case Families

### **Active Learning and Case Presentation**

According to Ross and Hurlbert (2004) problem-based learning requires active learning in which all students participate. Ross and Hurlbert stated that problem-based learning should be designed as process-based activities with short incremental assignments that lead to research-based decisions. For Duch, Allen, and White (1997) students work in small learning teams, acquiring, communicating, and integrating information in a process that resembles that of inquiry. They gave several characteristics of a good problem-based assignment and some are paraphrased below.

- The problem should engage students' interest and relate to the real world.
- The problem should require students to make decisions based on facts, information, logic, and/or rationalization.
- Not all the information needed should be initially provided but should involve multiple activities given out one at a time as students work on the problem.
- Students must see the need to cooperate with others to work through the problem. The problem needs to be lengthy and complex so that students will not divide out the work and only learn part of the material.
- Initial questions on the first part of the problem should be open-ended so that all of the students are drawn into the discussion and encourage a functioning team rather than encouraging them to work individually.
- Problems can be constructed so that activities build upon skills and knowledge in incremental steps. (Duch, Allen, and White, 1997)

The case study presented in this note is in three parts and takes about nine weeks to complete. The three parts are used so that students will not be overwhelmed. The reports for one part can be evaluated highlighting areas of adjustment needed before teams proceed onto the next part (see Figure 2). The textbook is a consumer-based book that is updated frequently: *Kiplinger's Buying & Selling a Home* (2006). Several Web sites are used that change frequently. By having the project in three parts, the assignment can be altered at the last minute if necessary to reflect recent changes in Web sites. Over the years, calculators have changed or disappeared, navigation of Web sites has changed, and Web sites have disappeared or appeared. Always check the Web sites and directions the week before the assignment is given to clarify the current status of the links and navigation of the sites listed in

the procedures. Also, the Web sites used are only a few of the housing financial sites available and others can easily be substituted.

Students are instructed on how to post their case study report on WebCT. WebCT and Blackboard are Internet-based software programs that serve as course management systems for online learning. The assignment for each part of the case student exists in a WebCt drop box. The team downloads the assignment and uses it as a template for inserting their answers and then uploads the completed assignment back into the drop box. The assignment file could also be sent to students and returned to the instructor as e-mail attachments. The template and report are in Microsoft Word and students are expected to take advantage of spell and grammar checking options. They also are expected to copy and paste input and results from Web sites and calculators into the template/report. Obviously, the execution of the case study also enhances a student's writing and computer skills.

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**Part 1. Getting Ready to Buy (40 points) - Kiplinger Chapters 2, 4, 5, 6, 7, 8**

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|----------------------|------------------------------|
| 1. Family Decisions  | Exercise 1: Family Decisions |
| 2. Pre-qualifying    | Exercise 2: Pre-qualifying   |
| 3. Selecting a Home  | Shop Online                  |
| 4. Offer to Purchase |                              |

**Part 2. Buying and Financing (50 points) - Kiplinger Chapters 9, 10, 11, 12**

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|------------------------------|------------------------------------------------|
| 5. Purchase Contract         |                                                |
| 6. Compare Mortgages         | Exercise 3: Comparing 15 & 30 Year Fixed Rates |
| 7. Mortgage Points           | Exercise 4: Mortgage Points                    |
| 8. Mortgage Loan Application |                                                |
| 9. Monthly Housing Costs     | Exercise 5: Amortization                       |

**Part 3. Refinancing and Selling (30 points) - Kiplinger Chapters 14, 15, 16, 17, 18, 19, 20, 21**

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|-----------------|-------------------------------------|
| 10. Refinancing | Exercise 6: Refinancing and Selling |
| 11. Selling     |                                     |
| 12. Equity      | Exercise 7: Equity                  |
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**Figure 2. Overview of Case Study: Buying and Selling a Home**

It is important to keep the questions as part of the report so that future use of the case study in student portfolios makes sense to potential employers and other professionals who view student portfolios. The reports can be printed and graded using a rubric specifically designed for each part. Within a week, the graded printed report and rubric is returned to the team in a double pocket folder to ensure academic privacy. Teams turn in the folders with prior reports and rubrics when they post the next completed report on WebCT. This helps the students keep track of adjustments they need to make and helps the instructor to remember what decisions each team made in the previous part(s) of the case study. The complete case study assignment is provided in the Appendix.

## Overview of the Case Study

### **Part 1: Getting Ready to Buy**

In Part 1, each team takes on the roles of the two adults in their family. The first question is open-ended and asks the students to apply the meanings of home from the Doyle (1992) article to their family. They are also asked to decide how the family chooses to work through their financial issues such as goals, debt, downpayment, and closing costs. With the first question, different teams who have the same family start to diverge in their approaches to the problem.

The second question in Part 1 asks the team to pre-qualify their family. They first use hand calculations based on the two types of rules of thumb to guide the family: home price range based on  $2 - 2\frac{1}{2}$  times annual income and house payment (28%) and debt load (36%) based on monthly income ratios (Kiplinger, 2006). Then they are directed to a Web calculator to obtain similar information using current mortgage interest rates. They are asked to compare the hand and the Web calculations. The key here is the effect of interest rates and mortgage terms. Hand calculations do not take into account interest rates or the term of a mortgage, and therefore hand calculations are not as precise as the Web calculations.

The third question asks the team to shop for a home for the family online. They consider three homes and then select one that best meets the family's needs and preferences. The students really enjoy shopping for a home. The fourth question ends the first part with an offer to purchase. Understanding offer to purchase contingencies is stressed in question four.

During the class period when Part 1 is due, sets of two teams interact as buyers and sellers sharing their home listings and offers to purchase and they come to contract agreements establishing negotiated purchase prices. Then the teams meet briefly as family groups and share the home they picked and their approach to the family's decisions. During the family meetings the teams are always amazed at how differently they each worked through Part 1 of the case study. This brief meeting reinforces the real-world situational context of decisions.

### **Part 2: Buying and Financing**

In Part 2, each team is asked to report on their purchase negotiation and to list several financial items based on their accepted offer to purchase (question 5). This allows for corrections or adjustments suggested by the instructor from grading Part 1 as the team progresses through Part 2. For example, some students get confused about earnest money as part of the downpayment, about how the downpayment is subtracted from the purchase price to determine the mortgage amount, or about how closing costs are not part of the downpayment.

In question six, teams are asked to compare fixed-rate mortgage terms and select the best term for their family. Although we talk about adjustable-rate

mortgages in class, ARMs are not used in the case study because we cannot predict well what will be the effect of unknown interest rates in comparisons. They are also asked to recognize the effect of credit scores on interest rates and total interest paid. Students are not asked to deal with low credit scores because the goal is to reinforce the positive of high scores. In question seven they are asked to evaluate the use of discount points for their family and how they affect closing costs. They decide if their family should take discount points.

For question eight, teams read through a four page mortgage loan application and work on the financial section, Details of Transaction. They estimate closing costs with a Web calculator and learn to differentiate prepaid items from closing costs and how to calculate the cash needed by the borrower at closing.

The final question (9) for Part 2 asks the teams to print the first year of an amortization table for their loan that includes estimates of tax savings. Teams are asked to describe how a family receives income tax benefits and to interpret the table and describe how amortization works. They are also asked to explain the escrowing of property tax and insurance.

Before starting Part 3 of the case study, the teams again meet as family groups and discuss how they made decisions about their mortgages. This brief meeting usually centers on how they used their financial resources to determine the amount of the downpayment, the length of the mortgage term, and the use of discount points.

### ***Part 3: Refinancing and Selling***

Assuming that the family is settled into their new home, the case study moves into a consideration of refinancing the mortgage. Thus in question 10 of the final part of the case study, the team uses a Web calculator to consider refinancing their mortgage. The interest rate drops only one percent so that the decision is very contentious. But then suddenly, as often happens in real life, the family decides to relocate and needs to sell their home.

Question 11 abruptly shifts the teams' thoughts to selling the home. They learn to calculate appreciation and estimate an actual selling price. They sell the home quickly through a real estate agent and figure seller's closing costs including the agent's commission. Using the fourth year of the amortization table from question 9 in Part 1, teams figure the amount of cash their family will be able to take to purchase a new home in their new location.

The final question (12) asks the team to calculate equity two different ways: a short method and a longer method identifying the three components of equity and to consider how equity becomes part of the financial situation of a homeowner. Based on decisions made all through the case study, teams with the same family find they have different equity amounts. This time information is shared in family groups before the report for Part 3 is due. This final family group meeting also

helps students find errors in their calculation of equity. Although we go over the concept of equity in class, equity seems to be a difficult concept for the students to understand because the calculation summarizes knowledge and decisions from the incremental steps in Parts 1 and 2 of the case study. The short group meeting allows time for students to help peers with the concept before they post their reports on WebCT.

### **Case Study Teaching Techniques**

Teaching through the use of a case study requires the instructor to give up some control of the class and instill the responsibility of learning on the shoulders of the student teams. According to McCade (1995) teachers must prepare differently for case study pedagogy and rely less on lectures and more on asking questions to facilitate the thought processes of analysis and application. Learning outcomes are not just facts but also the critical thinking process, and grades should evaluate the process of thinking as well as factual information. McDade thought that case studies should include listening to others when developing one's own thinking, testing ideas about how people and organizations function, and developing teamwork and cooperative learning.

The degree to which the activities are teacher-directed is based on class size, intellectual maturity of the students, and course goals. Duch, Allen, and White (1997) suggested that in a large class of novice learners, the instructor should present mini-lectures that assist students with approaches to the problem. They stated that there is a balance between student directed and instructor directed activities and that if the balance is tipped too far in the instructor's direction, students may not feel motivated or empowered to take a responsible role in their learning. For problem-based learning to work, the instructor must judge how much control to give to the students and how to distribute the control.

Ciardiello (1995) believed that case-based instruction relies on cognitive apprenticeship and anchored instruction and begins with a problem to be solved. He explained that the cognitive apprenticeship approach requires three teaching methods: (a) modeling – explaining how to read and analyze the case, (b) coaching – observing and challenging the students, and (c) scaffolding – structuring the assignment. Ciardiello saw teachers becoming role models of thinking in action and fostering habits of critical thinking. Students and teachers become partners in the interpretation and analysis of issues embedded in the cases and students learn how to develop conclusions based on concrete evidence. According to Ciardiello the teaching method can be a structured approach in which the teacher models the proper method of effectively analyzing a case, which is often used in legal-case methods of instruction. Students are taught how to identify issues, apply the appropriate criteria, analyze the information, and make informed judgments. The key element of this method is the teacher's logical organization of the case (Ciardiello, 1995).

By using a demonstration family in class, the thinking processes are modeled for Henry Duff as he navigates through the process of buying and selling a home. Seven exercises have been developed that use Henry as the family to teach the fact-finding techniques and the critical thinking processes involved in Henry making decisions. Most of the exercises are presented in the computer lab as 15 minute mini-lectures and then the teams work for 35 minutes with their own fact-finding and critical thinking appropriate to their family's situation. According to Brookfield (1997) modeling is the one technique that most teachers omit. Teachers often stress why critical thinking is important and do not show the process. Brookfield felt that modeling also builds trust between learners and teachers.

As the teams work in the computer lab, they can be coached by observing their activity and challenging them to find and interpret information. The exercises not only allow modeling and coaching of the critical thinking process, but also provide additional scaffolding to help with the case study assignment. According to Nelson (1997) the teacher must provide some structure to make active learning work in groups. Nelson used worksheets that he identified as "intellectual scaffolding" to elicit higher-order critical thinking. Students like the intellectual scaffolding of the exercises because they can see how to work thorough the problem with the demo family and then apply the information to their case study family's situation.

### **The Role of Critical Thinking**

Viewing critical thinking as a process underlines the work of the case study. According to Brookfield (1987) the critical thinking process is seen as a normal and natural activity that takes place in everyday life as well as in the classroom. Brookfield identified three steps of the process and considered them as interconnected within the process. In the first step of critical thinking, people became contextually aware of the issue or problem. In the second step, assumptions are examined and new information is incorporated into the context of the situation involving discussions with peers and authorities. It involves research and reflective skepticism. The third step in the critical thinking process involves reflective analysis and informed action. In the process, steps one and two are continually revisited and ideas are tested and reflection persists as actions are considered. Borg and Borg (2001) found that students in their economics classes that used critical thinking activities learned that no matter how strongly opinions and values were held, they must be supported by evidence.

Hemming (2000) cautioned that critical thinking cannot be taught without content knowledge and that building content knowledge and critical thinking skills occur simultaneously. She stressed that open-mindedness is important in critical thinking because issues must be examined from multiple perspectives and one must move between one's own ideas and the ideas of others. Brookfield (1997) believed that learning to think critically happens best when others are engaged

to help us see our assumptions and actions in new ways. People tend to take their own views for granted and evaluate them only when they are questioned by another source.

Using the team case study to learn about buying and selling a home teaches much more than housing financial information. The case study encourages students to interact with each other and to ask questions, find and calculate possible solutions, and evaluate and make judgments. According to Nelson (1997, p. 71) “when we as faculty fail to get students to this level of critical thinking, we leave them poorly prepared to deal with personal and professional decisions and with the major issues of our times.”

### **Additional Activities**

During the nine week period covering the case study, several class periods are used to work on the case as teams. Mini-lectures are presented (often just 10 –12 minutes) during the work periods to cover additional material about homeownership (housing policy, various types of loans, insurance, the secondary mortgage market, etc.). During one period there is a guest speaker who is a credit counselor and during another period a guest who directs homebuyer education classes for a nonprofit organization. Videos and clips from television news are shown when they appropriately correspond to the stage of the case study.

Three out-of-class activities are also scheduled during the nine week period. The first activity requires students to attend an open house of their choice in the community the weekend before the first week of the case study to begin to get the feel of “house hunting.” Each student sends an e-mail memo to the instructor describing his/her experience and explaining the importance of the open house to a potential home buyer. The second activity involves the students attending a statewide one day conference held each fall by a homeowner education organization (Iowa Home Owner Education Project). At the conference the students attend one of the informational sessions, view vendor booths, and network with housing finance professionals.

The third out-of-class activity occurs while I attend the Housing Education and Research Association Fall Conference. Small groups of three to four students undertake a field experience by visiting the work environment of a housing professional in the community and conducting a group interview of the professional. I prearrange meetings with selected real estate agents, mortgage originators, the city tax assessor, an appraiser, a property manager, the city housing coordinator, and a city planner. Each student sends an e-mail memo to me describing the work environment and explaining specifics of the career based on the interview with the professional. The following week groups present informal panel discussions in class sharing the information about the housing finance careers that correspond with the processes involved in the case study of buying and selling a home.

## **Assessment**

Assessment of the critical thinking process is more complex than simply grading the case study. According to Brookfield (1997) assessment of the critical thinking process must be context-bound and a social process. Therefore, assessing the critical thinking process involves the teacher, student peers, and the student. The teacher serves as a model and observer of the critical thinking process and encourages students to question their own thoughts and the thoughts of others. When students interact with the teacher and with peer teams, they hear their thoughts reflected back to them and this alerts them to think about their thoughts critically. Assessment of critical thinking is determining how well thoughts were challenged and how well alternatives were explored and evaluated. Informal critical thinking assessment is done with the teacher and peers serving as reflective mirrors for a student (Brookfield, 1997).

Students must understand the formal assessment procedure; thus, rubrics for grading the three parts of the case study are provided with the assignment. The students see the point values for the questions and what constitutes the evaluation of their work. Because the case study is graded in three parts, students can reflect on their prior work and make adjustments in the next part of the case to improve their performance. Also, the students undergo additional informal assessment when they meet as family groups at the end of each part of the case study. By learning what other teams have done, the students learn about alternatives that could have been used by their own team and, therefore, increase their perceptions of what possibilities they could have explored. The final assessment of the case study is an individual student self-evaluation of the case study experience. This is accomplished by means of an anonymous Web-based survey containing two open-ended questions. The first question asks the student to briefly summarize what he/she has learned in general from completing the case study and the second question asks for suggestions to improve the case study for future classes.

The typical responses from fall semester 2005 about what was learned from the case study listed several aspects of the home buying and selling process. However, some students commented on the case study in general:

- Is there any better way of learning how to do something than doing it?
- The open-endedness of the case study really made me think.
- The case study helped me learn because after learning about it in class, we had to apply it in the case study.
- The ability to work with others made this a relevant application to real life.
- The case study was a perfect assignment to apply a real life situation in the classroom.

When asked for suggestions to improve the case study, some suggested that more time in class should be devoted to teamwork because it was hard to find

times to work together outside of class. Some students felt the case study went too fast and some thought it went too slow. One student suggested that every team should have the same family so that the whole class could exchange ideas. Over half of the students did not have any suggestions to improve the project. They liked it the way it was.

The students also evaluate the course at the end of the semester using a college standardized form. The average rating for the statement, "overall, this was a good course" ranged from 4.04 to 4.59 with an average of 4.31 on a five-point scale (1 = strongly disagree to 5 = strongly agree) for the eight semesters the case study has been used in the course. On the semester evaluation form, most students over the years have recommended that the case study be maintained as part of the course.

Possibly the ultimate assessment of the case study consists of the opinions of internship sponsors and potential employers who view the case study in a student's portfolio. Students are encouraged to include the case study with corrections in their portfolios to explain to professionals the experience they have had in the field of housing finance. Experience is one of the key issues in getting a job after graduation. Although many students have not actually worked in the field, the case study does provide the professional with information about how knowledgeable and experienced the student is in housing finance without actual work experience.

### **Closing Comments**

In closing, three ways that the case study could be used are suggested.

- In a college course on housing finance as illustrated above. Teams of two students randomly select one of the three families and work through the case study, meeting occasionally with other teams who have selected the same family. The demo family is used in class and in the computer lab to illustrate the procedures with corresponding exercises.
- As an independent study for a student who is not able to take the class. If you have a student who wants to learn about buying and selling a home, he/she can work through the case study choosing one family for one credit or all three families for three credits. The instructor meets with the student to go over the project and uses the accompanying exercises to illustrate the procedures.
- In an Extension or community home buying workshop. The demo family can be used to demonstrate the procedures. If computers are available, divide the participants into teams and have them all work on the same family. Only one of the families should be used in a workshop. Using all three families would be confusing for a brief workshop schedule. If computers are not available, print out some of the computer calculator pages and have the participants work

through the case study with the printed pages. The participants can replicate the work with their own families at home and bring questions to the next meeting or e-mail the instructor.

In reflecting on my eight years of using this case study of buying and selling a home, I realize that I have incorporated more structure over time. In the early years, I allowed the students to create their own family scenarios. This often resulted in unrealistic situations and students were not able to share information across teams in family group meetings. Probably the biggest improvement I have made was the incorporation of the exercises taught in the computer lab. This “intellectual scaffolding” helped students understand the information and procedures and also provided an excellent environment for me to model and coach critical thinking processes. By incorporating the exercises, teams more easily kept on track and understood what was expected of them. Case study grades and test scores over the material also improved with the addition of the exercises.

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Additional information about this case study,  
including assessment rubrics, exercises,  
and description of the field experiences,  
can be found on HERA's Web site  
([www.housingeducators.org](http://www.housingeducators.org)).

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## Appendix

Family \_\_\_\_\_ Team \_\_\_\_\_

### Case Study: Buying and Selling a Home

#### Part 1: Getting Ready to Buy

*Please insert the description of your family here before you do Question 1.*

#### 1. Family Decisions

- a. Based on the Doyle Reading, **identify and explain the meaning of home** at two levels for your family; 1) the “type of individual” for each adult in the family and their stage of development and 2) the type of family and their family stage. Include Doyle reference.
- b. List the financial issues (goals, handling debt, amount for downpayment, money for closing, etc.) your family must decide before buying a home. Describe how the family will work out each issue. Include text reference if appropriate.

#### 2. Prequalifying

- a. First, use your family’s financial information and calculate by hand the price range of homes they can afford explaining the “traditional rule of thumb” guidelines and calculate the maximum housing payment and maximum debt load for the family explaining the “traditional ratio guidelines.” Type and label each calculation, give precise figures used, show calculations where appropriate, and provide clear answers. Include text reference.
- b. Next, go to a Web calculator. Use [www.realtor.com](http://www.realtor.com), click on “Home Finance” located in the top menu. On the next Web page go down to “Calculators” near the middle of the page and click on “How Much Home Can You Afford.” Use the appropriate numbers for your family (income, debt, downpayment) and the following for the numbers for specific items: 6.5% interest rate, 2.5% closing costs, 1% taxes, .5% hazard insurance, and .5% private mortgage insurance. Use 28 and 36 ratios. Work with the numbers you can change (funds available for home purchase, minimum downpayment, maybe debt) to come up with an acceptable result. Copy and paste into your word document **both** your final “input” page with the numbers you entered and the page of results. Include Web reference.
- c. Type a brief paragraph comparing the results of the Web printout and your hand calculations. Comment on any adjustments you made while working with the Web calculator. Also, comment on why you think the hand calculated and the Web results are either similar or dissimilar.

#### 3. Selecting a Home

- a. Briefly list at least five preferences that your family seeks in a home based on family decisions in 1.a. above.
- b. Go on the Internet to various real estate Web sites and copy and paste information or listings on three separate homes considering the price ranges established, the family’s financial issues, and the family’s preferences. Briefly write an evaluation of each home (identify if home is #1, #2, or #3) in terms of the family’s preferences and finances on either the page with the listing or on one page following the listings. Use the heading “evaluation” for each paragraph. Include the Web reference for each real estate listing.
- c. Based on the evaluations, select the home that best meets the family’s preferences and finances. Identify if the home is # 1, 2, or 3 and briefly write a justification for the selection of the home in comparison to the other two considered. Use the heading “justification” for this paragraph. Print out a copy of the home you selected and bring it to class on the day Part 1 is due for use in class.

#### 4. Offer to Purchase

- a. Complete an offer to purchase for the home you selected as the one to buy in item 3.b. Although the purchase agreement is not included in the electronic portfolio, **write an overview of your offer** beginning with the decision process the family used to reach a purchase price (include the price). Remember you do not need to offer the full asking price if you think it is too high.
- b. **List all the contingencies** included in your offer with specific details where appropriate, starting with earnest money. This includes both the ones that you wrote in and the ones that are in the printed text of the standard form. As you list each contingency, **explain why** the contingency was included. Include text reference. Include a copy of your chosen listing and your offer in your folder.

During class, you will negotiate your offer to purchase. Present another team in class the listing of your final home choice and your offer. If they counter-offer, you can accept or do your own counter-offer. Hopefully, you and the "selling" team will come to a quick agreement. The "selling" team should sign the offer as the sellers. Keep the completed offer to purchase in the pocket of your folder.

## Part 2: Buying and Financing

### 5. Purchase Contract

Briefly write how the offer and acceptance procedure went at the conclusion of Part 1.

List the following items to summarize the results of your accepted offer to purchase from Part 1.

- Asking price (list price)           \$ \_\_\_\_\_
- The earnest money                 \$ \_\_\_\_\_
- The purchase price                 \$ \_\_\_\_\_
- The mortgage amount             \$ \_\_\_\_\_
- The downpayment amount       \$ \_\_\_\_\_
- Money for closing costs, etc.   \$ \_\_\_\_\_
- Loan to value ratio               \_\_\_\_\_ %

Also go to [www.fairmark.com/reference/index.htm](http://www.fairmark.com/reference/index.htm) or your family's tax rate schedule and find the federal tax percent category for their income.

Type of Household \_\_\_\_\_ Income \_\_\_\_\_ Rate \_\_\_\_\_

### 6. Compare Mortgages

- a. Go to [www.fool.com](http://www.fool.com) and click on "Calculators" in the side bar under personal finance. Go to "Home" in the middle of the page and click on "Which is better: 15 or 30 year term." Using the calculator, fill in the loan amount, purchase price, term in years (15 first, then 30) and the interest rate with no origination fee and no points for Ames Community Bank. Leave upfront costs at \$1,000. Enter the tax bracket percent from above (we will only consider federal). Also enter property taxes at \$2,000, homeowner's insurance at \$600, years before sell at 7, and savings rate at 3%. Copy and paste input and results pages from the Web into your Word document.
- b. What is the difference in cost over 7 years? Why? Select the loan term that would be best for your family right now and explain why you chose the loan.
- c. Now consider how fortunate your family is with a high credit score of 750 (FICO Score). Go to [www.myfico.com/myfico/CreditCentral/LoanRates.asp](http://www.myfico.com/myfico/CreditCentral/LoanRates.asp). Use the Loan Saving Calculator and enter the type of loan chosen in 6.b. (15 or 30 year fixed), the family's state, and their loan amount. Calculate the results and copy and paste the results into your report. Compare the interest rate and total interest paid for their score of 750 to the results if their score had been 650. Why does the loan cost so much more if a family has a low credit score?

### 7. Mortgage Points

- a. To understand the concept of points, go back to [www.fool.com](http://www.fool.com) and to the calculator "Should I Pay Points to Lower the Rate?" Enter the appropriate information for the mortgage you picked in 6.b. and rates for Ames Community Bank for no point (less points) and one point (more points). Leave upfront costs at \$1,000. Enter the tax bracket percent from above. Also enter property taxes at \$2,000, homeowners insurance at \$600, years before sell at 7, and savings rate at 3%. Select the fixed rate mortgage buttons at the end of the calculator. Copy and paste the input and results pages from the Web calculator into your Word document.
- b. Type a paragraph explaining how the additional points increase the closing costs (upfront costs of \$1,000). First show your math calculations. Decide if your family should take the lower rate/more points and explain why or why not (hint: consider both the comparison results and your family's savings for closing costs).

## 8. Mortgage Loan Application

- Look through the four page mortgage loan application. Complete as much as you would like and include the mortgage loan application for your family in the front pocket of your folder. Don't worry too much about most of the questions, but do zero in on section VII, "Details of Transaction" which is reproduced below.
- To get a better estimate of closing costs, go back to [www.fool.com](http://www.fool.com) and to the calculator "What Will My Closing Costs Be?" Enter the appropriate information for the mortgage you picked in 7.b (purchase price, loan amount, term, discount points, and origination fee). Use the defaults for the fees but enter property taxes at \$2,000 and homeowner's insurance at \$600. Copy and paste the input and results pages from the Web calculator into your document.

Use the results to complete the details of transaction below.

### Details of Transaction

a. Purchase price	\$ _____
b. Alterations, improvements, repairs	\$ _____
c. Land ( <i>if acquired separately</i> )	\$ _____
d. Refinance ( <i>incl. debts to be paid off</i> )	\$ _____
e. Estimated prepaid items	\$ _____
f. Estimated closing costs	\$ _____
g. PMI, MIP, Funding Fee	\$ _____
h. Discount ( <i>if borrower will pay</i> )	\$ _____
i. <b>Total costs (add items a through h)</b>	\$ _____
j. Subordinate financing	\$ _____
k. Borrower's closing costs paid by seller	\$ _____
l. Other credits ( <i>explain</i> )	\$ _____
m. Loan amount	\$ _____
<i>(exclude PMI, MIP, Funding Fee financed)</i>	
n. PMI, MIP, Funding Fee financed	\$ _____
o. Loan amount ( <i>add m &amp; n</i> )	\$ _____
p. Cash from/to borrower	\$ _____
<i>(subtract j, k, l, &amp; o from i)</i>	

The following items may be included in...

e = days of interest, haz insur. premium, haz insur., escrow, property tax

f = origination fee, appraisal, credit report, closing fee, abstract, title, recording fee, pest inspect.

l = earnest money

## 9. Monthly Housing Costs

- Go to [www.fool.com](http://www.fool.com) and to the calculator "How Much Can I Save in Taxes." Enter the appropriate information from your work above. Leave upfront costs at \$1,000. Appraised value is equal to your purchase price. Also enter property taxes at \$2,000 and homeowner's insurance at \$600. Copy and paste your input and results into your Word document. Also screen print, copy, and paste in the first 12 months of the amortization table.
- Explain the procedure the family must follow to receive the tax savings. How is tax savings an advantage of homeownership?
- Explain an amortized mortgage payment using the numbers for the first and second months of the first year in the amortization table you copied in 9a.
- Briefly explain how escrowing property tax and insurance works without using any specific numbers.

### Part 3: Refinancing and Selling

## 10. Refinancing

- Return to the web calculator "How Much Can I Save in Taxes" used in Part 2, 9.a. ([www.fool.com](http://www.fool.com)) and re-enter the information used in 9.a. for the loan that provided the amortization table

in 9.a. (If you made an error in 9.a., now is the time to correct it!) Copy and paste the input page into the report. Go to the amortization table and click on the first forward arrow until you have the rows 35-46 showing on the screen. Then screen print, copy, and paste the 35-46 months from the table into your report.

- b. Three years have passed since your family bought their home. The interest rate is now even lower than what they have for their mortgage. Your family wonders if they should refinance their loan. For the existing loan, use the information you produced for the loan above in 10.a. The new loan amount would be what they own at the beginning of the fourth year (refer to amortization table from 10.a.) and the new interest rate would be one percent lower than their existing loan rate. Go to [www.homepath.com](http://www.homepath.com) and use the calculator "Is Now a Good Time to Refinance?" to calculate the option of refinancing with one percentage point lower than their existing interest rate and a loan amount equal to their current balance after paying the last payment of the third year. Use the same term (15 or 30 years). Use the defaults; **5% estimated closing costs** and stay at least **seven more years**. Copy and paste both your input page and the results page.
- c. Should the family refinance? Explain how they make their decision using numbers in the results from the calculator.

## 11. Selling

- a. But wait! Now your family has decided they will relocate and are going to sell their home. Calculate (show your math) the potential sale price using 4% appreciation per year compounded for three years (start with their purchase price from Part 2 of the case study). The results of your appreciation calculation will be the listing price. Now round the amount to the nearest thousand to reflect the actual sale price they agreed to in a buyer's offer to purchase.
- b. The seller has closing costs associated with the release of their property to the buyer. Typical closing costs include property taxes prorated to the closing date, government recording and transfer fees, and a real estate commission if appropriate. Estimate the seller closing fees at \$1,500 excluding the commission.
- c. Calculate a real estate commission at 7% of the actual sale price that you calculated in 10a. (show the math).
- d. It took three months to sell the home and arrive at the closing date. List the mortgage balance after paying the 39th monthly payment (refer to amortization table from 10.a.).
- e. Based on the figures above (11.a., 11.b., 11.c., and 11.d.), show how much the family would be able to take to their new location after they sold their home. Show the math!

## 12. Equity

- a. Using the short method (sale price – unpaid loan), calculate the total amount of home equity that your family has when they sell their home after the 39th payment and based on the actual selling price established in 11.a. (show the math).
- b. Then use the long method (appreciation/depreciation + downpayment + principal paid) to calculate equity. Show the math and label the amount of each of the three equity components and the total equity that the family has when they sell their home after the 39th payment.
- c. Explain how the two equity methods should compare. Explain how equity becomes part of the financial situation of a homeowner.

### \*\*\*Bonus Points

**For two bonus points, go to the Case Study Evaluation Survey in WebCT. Each team member is to evaluate his/her experience with the Case Study. The survey asks the two questions listed below. Please type out your answers and spell check them before you copy and paste them into the WebCT answer boxes. The survey tool in WebCT does not associate your name with your answers. It only records if you answered the survey.**

- a. Briefly summarize in a short paragraph what you have learned in general from completing this three part case study.
  - b. Please suggest improvements that can be made to this case study project for future classes.
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