Lecture Set 15

Amortization Schedules
- Amortization schedule (table)
  - Incrementally shows how a debt is paid down
- Given P, r, n, and R
  - We take the beginning balance at each time period
  - Multiply by the fractional interest due (r/n)
    - This gives us the interest due that period (e.g., month)
  - Recall that R is a combination of principal and interest for the period
    - So the amount of R that is used to pay down the balance is R – interest due this period
  - Take that principal, subtract from the beginning balance, and that becomes the beginning balance for the next time period
- Easy to build a spreadsheet holding the entire table

Remember the Relationships
- Monthly Interest is beginning balance * r/n
- Principal is Payment – Interest
- End Balance is beginning - Principal

Copy & Paste
1. Set formulas in first row
   - Make sure to "lock" references to any cells outside the table (e.g., interest rate, payment).
   - These might come from a different set of cells where you calculate the payment of a loan – possibly on a different sheet
   - Another way to "lock" a reference is to give a cell a name and then refer to that name in your formula
   - Name B1 "rate" and B2 "payment" and use those names in formulas
2. Set up relationship between first and second rows
3. Copy second row
4. Select 358 (n+1 – 2) more rows and paste!
5. Plug in numbers
   - P, r, n
   - Table fills out!

What Table Tells You
- At any point you can see
  - How much you owe
  - How much of your payment is going to pay off interest and how much to pay down principal
- Could also add additional columns
  - "Running" Totals
    - Total Interest paid so far
    - Total Principal paid so far

Introducing Graphics
- Spreadsheets have powerful graphing capabilities
  - Can draw pie-charts
    - Select Principal or Interest from a Loan or Savings
      - Insert/Chart to create a pie-chart
  - Can draw line-graphs to show trends
    - Select columns
      - Beginning balance column from amortization table
        - Show how loan balance drops
      - Principal and interest from amortization table
        - Show how principal rises and interest drops for each payment
      - Insert/Chart and choose a line-chart
- More on graphics later...

Spreadsheets 4

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