**ASM Introduction to Data Science**

**Session 01**

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**Attribution:**

Created by Nadav Rindler for DataViz My *Intro to Marketing Analytics* workshop in February, 2018.

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**Data Science Use Case: ZipRecruiter Pricing Experiment**

1. On the Experiment tab, for each Group, multiply Price \* Conversion Rate (Col B \* Col C) to obtain the Revenue per Prospect
   1. Which group has the highest Revenue per Prospect?
2. On the Retention tab – we are calculating Total Expected Revenue per Prospect (Col G). This will be the sum of the acquisition revenue (at time t=0) and each retention period (t=1-4)
   1. To calculate acquisition revenue for each Group, multiply column A \* column B
   2. To calculate Period 1 retention revenue (Col C) for each Group, multiply column A \* column B \* column C
      1. The values in Column C represent the ***percent of initially acquired customers*** (Col B) who were retained in that period
   3. To calculate Period 2 retention revenue (Col D) for each Group, multiply column A \* column B \* column D
   4. Repeat this process for each time-period (t=0-4), and sum each period’s revenue up to obtain the Total Expected Revenue
3. On the Retention tab – now that we’ve calculated Total Expected Revenue, we need to discount those future revenues back to today in order to obtain the Net Present Value (NPV, Column H).
   1. Take the formula used for Column G, and for each time period’s revenue, discount it by dividing by (1 + monthly\_discount\_rate)^t
      1. Where monthly\_discount\_rate is Cell J2
      2. Where t is the time-period (Row 4)
      3. For example, to calculate the net present value of Period 1 (t=1) retention revenue (Col C) for each Group, multiply (column A \* column B \* column C) and then divide that amount by ((1 + $J$2)^1)
   2. Repeat this process for each time-period (t=0-4), and sum each period’s discounted revenue up to obtain the Net Present Value of the total revenue
   3. Try changing the value in Cell J2 and observe how the NPV changes.
      1. Is the NPV (Col H) greater than, less than, or the same as the value of the Total Expected Revenue (Col G)?
      2. What happens to the NPV as the discount rate increases? Decreases?