Bill.com Vision Statement
Recommendation Monkey

**Team Name:** Inspector Royale

**Mentor:** Stuart Ogawa

**Team Members:**
- Derek Garcia - derekgarcia@ucsb.edu - Lead
- Noa Kim - noakim@ucsb.edu - Scribe
- Huiyu Zhang - huiyuzhang@ucsb.edu
- Joe Zhuang - zhouzhuang@ucsb.edu
- Carson Coley - carsoncoley@ucsb.edu

---

-**What is the project about**

Deliver recommendations telling a business user whether or not they should invest time and resources into a specific set of industries and entities for a given business archetype. Provide mathematical explainability supporting the recommendations.

---

-**Why is the project important?**

There is currently no widespread method for analyzing smaller industries of a business archetype for investing purposes, but they do exist for larger businesses. Using Bayesian statistics and research data our project can offer a quantitatively and qualitatively supported recommendation to a business user.

---

-**How was this solved before?**

In business, people manually enter data into SaleForce, a customer management relationship cloud app to collect customers. Weekly
-Identify the Outcome of the Project
  ● Identify top three quantified attributes/features derived from the customer financial data relative to industry supplied that supports or refutes investing more BDC time and money into the industry
    ○ Apply statistics to the data to search, identify, and recognize the top 3 attribute/feature patterns that show increasing customer revenue (positive rise over run), negative growth, neutrality
      ■ Scatter diagram plots
      ■ Regression analysis against scatter diagrams
      ■ Bayes Theorem
    ○ Calculus
      ■ Objective is to mathematically characterize these lines
      ■ Scatter diagram displaying a regression line by industry on same graph
        ● Characterize these industry regression lines
          ○ Plateaued
          ○ Increasing at an increasing rate over X%
            ■ X% is a user defined value entered in Jupyter
            ■ Default value = 20%
          ○ Decreasing at an increasing rate over Y%
            ■ Y% is a user defined value entered in Jupyter
            ■ Default value = 20%

-Define initial Project Milestones
  ● Week 5: Have a functional MongoDB we can query using python and display on Jupyter
  ● Week 6/7: Build Reports and work on Statistical Math
  ● Week 8/9: Finish Report Building and work on Real Statistical Analysis
  ● Week 6-9: Focus on backend and stats (BDC customers financial data) for actual predictions and analytics. Fine tune models with 2017 BDC results.

-How do you plan to articulate and design a solution
  Implementation platform & technologies: Jupyter Notebook, MongoDB (5.0.3)