Project Charter

Date: 10/10/2019

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| **Project Title**:  PayChex Recommendation Engine | | | |
| **Project Start Date:** 9/27/2019 **Projected Finish Date:** 12/3/2019 | | | |
| **Project Manager:**  Hyungkyu Lim | | | |
| **Project Vision:**  PayChex wants to recommend the most relevant items to a potential client. | | | |
| **Project Objectives:**  We are going to build a recommendation system that will suggest high-level product categories to a given client. | | | |
| **Project Goals:**   1. Conduct exploratory analysis to uncover hidden patterns in the data    1. Get data distribution based on Representative Level, Size, and Industry features    2. Get the frequencies of each product individually and by product category    3. Create a correlation matrix of features 2. Implement a baseline Popularity model- recommends products by determining the most across all user groups    1. Decide whether or not to segment client by certain features (Representative Level, Size, and Industry) or to use the client data holistically    2. Output a priority list of products for each client 3. Implement a Market Basket Analysis Model- recommends products based on association rules    1. Decide whether or not to segment client by certain features (Representative Level, Size, and Industry) or to use the client data holistically    2. Output a priority list of products for each client 4. Implement a Collaborative Filtering Model- recommends products by looking at the similarity between user groups    1. Decide whether or not to segment client by certain features (Representative Level, Size, and Industry) or to use the client data holistically    2. Output a priority list of products for each client 5. Define a performance metric with which to compare performance between the two models 6. Report results to our sponsors | | | |
| **Preliminary Scope:**   1. Meet with the project sponsor 2. Write down the requirements and expectations 3. Validate the requirements with the sponsor and get an approval to proceed in proposed directions 4. Research the proposed recommendations system models 5. Obtain data and conduct exploratory analysis 6. Build and evaluate the results from the Popularity model (Model 1) 7. Meet with sponsors to discuss findings 8. Build and evaluate the results from the Market Basket Analysis model (Model 2) 9. Meet with sponsors to discuss findings 10. Build and evaluate the results from the Collaborative Filtering model (Model 3) 11. Meet with sponsors to discuss findings 12. Determine the best performing model and make predictions on test data 13. Give final presentation of our findings to sponsors and write formal report | | | |
| **Preliminary Milestones:**   * **Milestone 1:** Meet with sponsor and gather requirements, **Due: 09/27/2019** * **Milestone 2:** Finalize the Project Charter, **Due: 10/10/2019** * **Milestone 3:** Present findings of EDA to sponsors, **Due: 10/11/2019** * **Milestone 4:** Finish developing Model 1, **Due: 10/21/2019** * **Milestone 5:** Submit Progress Report 1, **Due:10/24/2019** * **Milestone 6:** Present results of Model 1 to sponsors, Due: **10/25/2019** * **Milestone 7:** Finish developing Model 2, **Due: 11/04/2019** * **Milestone 8:** Submit Progress Report 2, **Due: 11/07/2019** * **Milestone 9:** Present results of Model 2 to sponsors, **Due: 11/08/2019** * **Milestone 10:** Finish developing Model 3, **Due: 11/18/2019** * **Milestone 11:** Submit Progress Report 3, **Due: 11/21/2019** * **Milestone 12:** Present results of Model 3 to sponsors, **Due: 11/22/2019** * **Milestone 13:** Final presentation to sponsors, **Due: TBD** * **Milestone 14:** Submit final report, **Due: TBD** | | | |
| **Project Deliverables:**   1. Project Charter document 2. Bi-weekly presentations with sponsors tracking progress with Python code 3. Final report that includes our approach to investigating the problem and our findings 4. Final business presentation | | | |
| **Budget Information:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **EDA** | **Model 1** | **Model 2** | **Model 3** | | **Andrea Clark** | 3 hrs | 2 hrs | 2 hrs | 3 hrs | | **Sahar**  **Hajiseyednasir** | 3 hrs | 2 hrs | 2 hrs | 3 hrs | | **Hyungkyu**  **Lim** | 3 hrs | 2 hrs | 2 hrs | 3 hrs | | **Zongyan Yang** | 3 hrs | 2 hrs | 2 hrs | 3 hrs | | | | |
| **Success Criteria:**  Delivery of a system able to output a list of the top-five most relevant products to a given client. | | | |
| **Approach:**  We will develop three different recommendations systems, employing different approaches: (1) popularity-based, (2) association-rule-based, and a (3) collaborative-filtering-based. | | | |
| **Roles and Responsibilities** | | | |
| ***Name and Signature*** | ***Role/Stakeholder*** | ***Position*** | ***Contact Information*** |
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| **Comments:** | | | |