**NETCOMPANY – PROJECT DATA ANALYSI (PDA)**

**PROJECT PROPOSAL**

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# Executive Summary

This document is a project proposal for the Data Analytics project.

Our main goal is to create a website to predict the stock market for the next months. We're going to create a web page that shows a chart showing stock market predictions. At the end of our project, we will have a complete web page to display the charts.

Our project will follow the Scrum software development process, consisting of four PIs and small sprints, deployed through the process timeline. Our project has several important milestones. Many risks can also affect the project. We have identified possible risks and analyzed possible solutions with planning for all known risks.

Our project is fixed cost and fixed duration.

# Terms of Reference

## The client

Ms. Nguyen Thi Diem Trang is a customer and has investment capital. Customers want to invest in real estate or the stock market. For convenience in grasping the market trend, customers want software to monitor and predict the market in the coming months. The team is a consultant trying to fulfill the wishes of the client.

## Problem

There are many different types of stocks circulating in the market, so it is difficult for customers to choose to invest. The value of stocks always changes over time, they can increase or decrease.

The PDA project will create a website that can predict the stock or housing market based on the collected data set. Based on those predictions, clients can decide which stocks to invest in.

# Scope and objectives

## Project Objectives and Success Criteria

The purpose of this PDA project is to create a website that shows stock market predictions through various types of graphs. Available data sets will be analyzed, predicted through the application and comparison of algorithms. Based on those predictions, clients can decide which stocks to invest in. The business goals for this project directly assist the client in predicting the market in the coming months.

Accept criteria of the PDA project include:

* Shows next month's prediction based on previous months.
* Must have a UAT version for customers to try before releasing the final version.
* The final product must be usable and predictive.

## Scope

### Scope Description

* The dataset must come from a trust resource, and the dataset does not need to be changed based on real time
* There are documents and sources that prove the predictions are reliable.

### Constraints

* Costs must not exceed the estimated budget.
* The final product must be released within 6 months.
* The final product must satisfy the MVP.

## Requirements

### Functional Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **As a** | **I want to** | **Therefore** |
| 1 | Customer | See the stock market trends | I want a web app to display the graph |
| 2 | Customer | invest in a stock | I want to see algorithm-based market prediction with a presentation of how each algorithm is done |

### Non-functional Requirements

## Project Deliverables

 According to each PI, there will be documents that need to be completed

* First PI:
* A0100- Analysis Report
* O0500 - Software Architecture - Clarification Phase
* Second PI:
* D0100 - User Interface Guidelines
* DD130 - Detailed Design
* D0160 - User Interface Design
* O0500 - Software Architecture
* Third PI:
* MVP Version
* Fourth PI:
* Final Product

# Project methodology and Approach

## Vision

To deliver delivered products, we will research algorithms to predict the market based on data sets. After that, we will build a web application to represent the prediction results. The project is divided into four project increments.

## Method and Approach

### Scrum

Scrum has been used since the early 1990s as a framework for developing, providing, and maintaining complex products. Scrum illustrates the relative effectiveness of the product management and work techniques, allowing to make improvements to the product, team, and workplace environment.

Therefore, we will apply the Scrum process to manage this PDA project. We will divide the project into four main PIs and each PI will be broken down into smaller appropriate Sprints. Before each Sprint, there will be a planning meeting to divide tasks and have weekly reports. On average, each sprint will last about 2 weeks.

### Project Management

Jira will be used as a project management system for the PDA project, including task division, task assignment, and performance tracking, time tracking.

# Risks

The following risks for the PDA project have been identified. The project manager will determine and employ the necessary risk mitigation/avoidance strategies as appropriate to minimize the likelihood of these risks: (1-lowest, 4-highest)

* Probability: from 1 (lowest) to 4 (highest)
* Impact: from 1 (lowest) to 4 (highest)
* Risk Score: **Probability x Impact**
* Risk ranking: based on risk score
  + I (1, 2): Not serious, don’t need to be immediately resolved.
  + II (3, 4): Not serious, need to be immediately resolved.
  + III (6, 8, 9): Serious, don’t need to be immediately resolved
  + IV (9, 12, 16): Serious, need to be immediately resolved

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Risk Identification** | | **Qualitative Rating** | | | | **Risk Response** | |
| **Risk** | **Risk Category** | **Probability** | **Impact** | **Risk Score** | **Risk Ranking** | **Risk Response** | **Trigger** |
| Human absence due to personal issues | Human Resources | 2 | 3 | 6 | III | Reschedule the tasks or assign them to another member | Team members have to inform all team. |
| Functions do not meet customers’ requirements. | Stakeholder expectations | 3 | 4 | 12 | IV | Try to negotiate with the stakeholders | Stakeholders' negative feedback |
| Cannot complete all the requirements on deadline. | Time | 2 | 4 | 8 | III | 1. Inform the stakeholders before the predetermined deadline a week.  2. Working overtime to finish as soon as possible | One week before the deadline, there are still 2 more requirements |
| The conflict between team members leads to inefficient work. | Human Resources | 1 | 2 | 2 | I | 1. Find out the reason  2. Solve the problems | Cannot communicate members when needed |
| Customers may change requirements during the project. | Scope | 2 | 3 | 6 | III | Depend on the ability of the team developer | Stakeholders inform that they need to modify their requirement(s) |
| During project development, the interface went wrong with the design. | Technical Accuracy | 2 | 2 | 4 | II | 1. Fix those problems as soon as possible.  2. Define the new design within considering. | The real design is not the same as the design when checking |
| Lack of skills needed for the project | Human Resources | 3 | 2 | 6 | III | 1. Team members have to inform all team.  2. Learn from different resources | Team members have to inform all team. |

# Skill Analysis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Group** | **Skill Expertise** | **Level** | | | | |
| **1** | **2** | **3** | **4** | **5** |
| Technical Skill | HTML/CSS |  |  | x |  |  |
| JavaScript |  | x |  |  |  |
| Django |  | x |  |  |  |
| React | x |  |  |  |  |
|  |  |  |  |  |  |
| Team Skill | Presentation |  |  |  | x |  |
| Research |  |  |  | x |  |
| Problem Solving |  |  |  | x |  |
| Conflict management |  |  | x |  |  |
| Time managing |  |  |  |  | x |

# Summary Milestone Schedule

The project Summary Milestone Schedule is presented below.  As requirements are more clearly defined this schedule may be modified.  Any changes will be communicated through project status meetings by the project manager.

|  |  |
| --- | --- |
| **Summary Milestone Schedule – List key project milestones relative to project start.** | |
| **Project Milestone** | **Target Date** |
| Project Start | October 21st, 2021 |
| PI Planning finish | October 30th, 2021 |
| First PI finish | December 31st, 2021 |
| Second PI finish | February 28th, 2022 |
| Third PI finish | March 31st, 2022 |
| Final PI finish | April 30th, 2022 |
| Project Complete | April 30th, 2022 |

# Summary Budget (template)

The following table contains a summary budget based on the planned cost components and estimated costs required for the successful completion of the project

|  |  |
| --- | --- |
| **Summary Budget – List component project costs** | |
| **Project Component** | **Component Cost** |
| Personnel Resources | $110,000 |
| Hardware | $45,000 |
| Software and Licensing | $75,000 |
| IT Lab Preparation | $15,000 |
| Total | $245,000 |

# Project Approval Requirements

The complete project is defined when a product that predicts market trends is tested and proven to be the best solution by the accompanying research papers. Along with that, all technical and process documents are handed over to the company, the product must be fully deployed within the time and cost constraints indicated in the proposal. In addition, this successful measure needs to include instructions for using and installing the product along with a video showing the application process in action. Success will be supported by the project sponsor Netcompany, specifically the representative of Miss. Nguyen Thi Diem Trang was identified.

# Project Manager

Ngo Thanh Binh is the project manager, and he is responsible for creating main tasks and deadlines for each task. This task is given to the team leader, Nguyen Bao Nguyen. Nguyen divides the tasks into 4 PI and identifies the smaller tasks of each team member in the PI. Mr. Ngo's team has four members including a team leader, business analyst, developer, and tester. After each phase of the project, the product will be delivered by Mr. Ngo to the Project Owner, Nguyen Thi Diem Trang.

# Authorization

Approved by the Project Sponsor:

\_\_\_\_\_\_Logo, company name

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<Project Sponsor>

<Project Sponsor Title>

# Disclaimer

#### Clients should note the general basis upon which the Auckland University of Technology undertakes its student projects on behalf of external sponsors:

*While all due care and diligence will be expected to be taken by the students, (acting in software development, research or other IT professional capacities), and the Auckland University of Technology, and student efforts will be supervised by experienced AUT lecturers, it must be recognized that these projects are undertaken in the course of student instruction. There is therefore no guarantee that students will succeed in their efforts.*

*This inherently means that the client assumes a degree of risk. This is part of an arrangement, which is intended to be of mutual benefit. On completion of the project, it is hoped that the client will receive a professionally documented and soundly constructed working software application, some part thereof, or other appropriate set of IT artefacts, while the students are exposed to live external environments and problems, in a realistic project and customer context.*

*In consequence of the above, the students, acting in their assigned professional capacities and the Auckland University of Technology, disclaim responsibility and offer no warranty in respect of the “technology solution” or services delivered, (e.g. a “software application” and its associated documentation), both in relation to their use and results from their use.*