Rental Forecasting Tool

Sponsor: Black Dog Estates

Team Members: Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava

ISE 5174 Group 4

Dr. Christopher Kwaramba

Project Management Plan

Purpose

The purpose of this project management plan is to have one singular document to include all components of the software project to allow for easy reference in the future.

Contents

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this entire project management document and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Group Participation

All group members contributed equally to the completion of this assignment as indicated by their signatures below.

Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava

Project Charter

Stakeholder Background

Black Dog Estates, LLC is a disabled veteran and Latin-owned small business that primarily invests in short-term rentals. The business would like to expand their short-term rental portfolio and potentially expand their business model to include mid-term and long-term rentals. In order to do this, the business requires a tool that can analyze existing data and predict future demand, profit margins, and recommend dynamic pricing for the area.

Objectives

Develop software that takes historical data for short-term, mid-term, and long-term housing rentals and forecasts projected occupancy rates and potential profit for each rental option as well as recommend dynamic pricing for each option and display each metric in a user-friendly manner.

Team Role Identification and Descriptions

Team roles include the Key Stakeholder, Sponsor, Project Manager, Technical Lead, Programmer, Business Analyst, and User Experience Expert.

Key Stakeholder: Daniel Soto Jr. (Black Dog Estates, LLC Member)

> The Key Stakeholder is the main representative of the Sponsor company that works with the project team to communicate the needs of the company to ensure that the final product is what the company wanted.

Sponsor: Black Dog Estates, LLC

> The Sponsor is the company that desires the software that the team is working on and they are responsible for providing the team with funding for the project, if there is any.

Project Manager: Allison Roush

> The Project Manager is responsible for interacting with the Key Stakeholder and to guide them through the development process to ensure that their needs are met. The Project Manager is also

responsible for organizing the team into specific roles and oversees the entire development process while ensuring that the project is on time, on budget, and meets all requirements.

Technical Lead: Kiara Chambers

The Technical Lead learns the end goals of the project and general timeline from the Project Manager then breaks down the objectives into specific technical tasks that can be completed by the programming team. They provide support to the programmers and communicate problems back to the Project Manager.

Programmer: Sreenath Krishnan Potty

The Programmer is responsible for the completion of the specific technical tasks given to them by the Tech Lead as well as communicating any issues they have with the code to the Tech Lead.

Business Analyst: Ashutosh Srivastava

The Business Analyst will conduct a thorough market research to understand current and future demand, analyzing financial data to assess profit margins, and recommending dynamic pricing strategies. The Business Analyst will also use data analysis techniques to analyze insights on customer preferences, market trends, and competitor offerings. Collaborating with Stakeholders and Programmers, the business analyst integrates technology solutions for dynamic pricing implementation.

User Experience Expert: Brandy Soto

The User Experience Expert will be responsible for enhancing the overall user satisfaction and usability of the product. The User Experience Expert responsibilities will include conducting user research to understand user needs and behaviors, creating and designing intuitive and user-friendly interfaces.Through usability testing and feedback analysis, identify areas for improvement and collaborate with teams to implement enhancements.

Project Deliverables

By the end of this project our team will provide the sponsor with a software program and user interface that will allow Black Dog Estates to forecast occupancy rates and potential profit for short, mid, and long-term rentals as well as recommend dynamic pricing. This program will take an input of historical rental data in a specified area then provide the desired forecast data for the same area to the user giving

Black Dog Estates critical information that will help grow the business by improving profit margins and providing insight on good locations to invest in.

Communication Plan

The communication plan is outlined below in Table 1.

Meeting	Owner	Objectives	Method	Frequency	Audience
Introductory	**Project Manager**	**1. Introducing the project. 2. Defining objectives, goals, timeline, deliverables, and roles.**	**Video Conference (Zoom)**	**Once, at start.**	**Project team, Sponsor, Stakeholders**
Team Meeting	**Project Manager**	**1. Review status and progress.**	**Zoom, GroupMe, Email**	**Every Monday, 7:30 p.m. EST**	**Project team**
Weekly Recap	**Project Manager**	**1. Update sponsors and stakeholders about the progress.**	**Zoom**	**Every Friday, 4:30 p.m. EST**	**Project team, Sponsor, Stakeholders**
Status	**Project Manager**	**1. Update on Project status. 2. Sponsor and Stakeholders feedback.**	**Zoom**	**Monthly**	**Project team, Sponsor, Stakeholders**

Table 1: Communication Plan

Expectations and Conflict Resolution

All project team members are expected to attend all meetings unless they communicate to the group a valid reason that they cannot attend. If a member is unable to attend a meeting the project manager will send them a meeting recap including any specific tasks that the member is expected to complete before the next meeting.

If a team member misses more than two meetings without communicating with the team or fails to contribute at all to an assignment without communicating to the team then the team member's name will be left off of that week's assignment and the course instructor will be notified. The team member will be

given a chance to explain their circumstances and improve their contributions but if another offense occurs the remaining team members will discuss firing the individual and report their decision to the instructor.

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this project charter and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Stakeholder Management Plan

Identify Stakeholders

Identifying stakeholders and developing a plan to incorporate them into the project early on in the process is essential for a successful project. The key stakeholder for this project is Daniel Soto Jr, he is a representative from the company sponsoring the project. The team identified Daniel as the key stakeholder as he will be the team's main point of contact to learn key insights about the company's expectations and desires for the project which puts him in an essential role, and thus the key stakeholder. The team's next stakeholder is the sponsor company itself, Black Dog Estates LLC. Black Dog Estates LLC is a stakeholder in the project because they are the one's paying for and ultimately receiving the final product. They are invested in the success of the project not only because they are investing money in it but because they see the potential to grow their business through the use of the tool the team is developing. The next stakeholder the team identified are the individual team members. Each team member is invested in the success of this project and wants to do well to help the sponsor by delivering a quality product. The final stakeholder the team identified is Dr. Christopher Kwaramba. As the professor of the Project Management Class he cares about the success of the team in completing this project and their educational journey throughout the project that will allow them to learn key management skills.

To identify each stakeholder the team considered all parties who may care about the success of the project. It was easy to identify the key stakeholder and sponsor as stakeholders as they directly requested the completion of this project and will be greatly impacted by its success or failure. After identifying these stakeholders the team had to dig a little deeper to see who else might care about the project. The team then realized that all team members wanted the project to be successful which would allow everyone to know that they helped the sponsor and help the team learn key management skills. Then the team remembered that this project is also for a class and that the professor would also be invested in the team's success. No other stakeholders were identified as no one else would use the project other than the sponsor company.

Analysis of Impact and Expectations

Each stakeholder identified in the previous section (Daniel Soto Jr, Black Dog Estates, Team Members, and Dr. Christopher Kwaramba) has a different level of impact in the process and expectations placed upon them. Stakeholders with a greater impact on the project also have more expectations placed upon

them to help the project be successful. Each stakeholder's impact and expectations are listed below in table 1.

Role	Name	Impact	Expectations
Key Stakeholder	Daniel Soto Jr.	High	Represent the sponsor company and communicate product needs and requirements to the project group. Also communicate and approve the project budget on behalf of the sponsor company.
Sponsor	Black Dog Estates, LLC	Medium	Provide the project team with funding to complete the project.
Team Members	Kiara Chambers, Sreenath Krishnan, Allison Roush, Brandy Soto, Ashutosh Srivastava	High	Communicate with the key stakeholder to understand the project's requirements. Complete the project to the best of their ability, striving to meet stakeholder expectations and remain on time and under budget.
Professor	Dr. Christopher Kwaramba	Low	Provide the team with feedback on management assignments to help keep the team on track.

Table 1: Stakeholder Register

Development of Management Strategies

The main component of the team's stakeholder management strategy is strong communication. The team will communicate with the key stakeholder regularly to provide them with updates on progress and to receive feedback on what is going right and what can be improved. The key stakeholder will then communicate with the sponsor company the team's progress and take any higher up feedback from them and bring it back to the team in their next meeting. The team will also receive feedback on management assignments from Dr. Kwaramba through Canvas submission comments and they will reach out to him

with any questions they may have about future assignments or specific management techniques. The individual team members will also communicate frequently with each other to plan out who is working on what component of the project and when. Team members will reach out to each other if they are struggling with their portion of the project or if they cannot attend a meeting or class.

A foundation of frequent and honest communication between all stakeholders will allow everyone to make necessary adjustments quickly throughout the process which will result in successful project completion with all stakeholders satisfied with the outcome.

Planning for Stakeholder Engagement

Stakeholder engagement is important for the seamless execution and success of our project. In this setting, a comprehensive plan is developed to ensure all stakeholders are engaged effectively throughout the project lifecycle. This entails identifying key moments when stakeholder input is most beneficial, such as during the initial planning stages, at major milestones, and during critical decision-making points. A structured communication plan is also established, outlining the frequency, method, and content of updates to be shared with each stakeholder group. This plan includes regular status meetings with Daniel Soto Jr., the key stakeholder, to provide project updates and gather feedback, as well as scheduled sessions with Black Dog Estates LLC to review project progress and align on expectations. To facilitate active participation and input from all team members, collaborative tools and forums will be utilized, ensuring their contributions are valued and incorporated into the project. Additionally, updates and feedback sessions with Dr. Christopher Kwaramba will be arranged to leverage his expertise and guidance, thereby enhancing the learning experience and project outcomes. By implementing a dynamic engagement strategy that adapts to stakeholder needs and project phases, the plan ensures that all parties are well-informed, involved, and invested in the project's success from start to finish.
Additionally, the plan includes mechanisms for adjusting communication and engagement strategies based on feedback and project evolution, ensuring that stakeholder engagement remains effective and aligned with project needs. By prioritizing clear, consistent, and meaningful interactions with all stakeholders, the plan sets a realistic foundation for successful project delivery and stakeholder satisfaction.

Management of Stakeholder Engagement

Effective management of stakeholder engagement is integral to the success and smooth operation of the project, involving strategies that actively involve stakeholders in decision-making and execution. This involves the implementation of a structured approach to identify stakeholder expectations, align them with project objectives, and involve them in relevant decisions throughout the project lifecycle. Key strategies include establishing a stakeholder advisory board comprising Daniel Soto Jr., representatives from Black Dog Estates LLC, and selected team members. This board meets regularly to discuss project progress, address concerns, and make pivotal decisions, ensuring that all voices are heard and considered. Additionally, employing collaborative project management tools allows for real-time communication and feedback, facilitating a transparent and inclusive environment where stakeholders can view progress, contribute ideas, and flag issues as they arise. The management process is designed to be both effective and efficient, utilizing agile methodologies to adapt quickly to stakeholder feedback and project needs, thereby minimizing delays and maximizing resource utilization. By creating an open, responsive, and adaptive management structure, stakeholders are not only informed but are active participants in shaping the project's direction and outcomes, leading to enhanced stakeholder satisfaction and project success.

Monitoring of Stakeholder Engagement

Monitoring stakeholder engagement is a critical component that ensures the continued success of a project by implementing effective strategies that assess and adapt to stakeholder feedback and involvement over time. To achieve this, a set of key performance indicators (KPIs) related to stakeholder satisfaction, communication effectiveness, and engagement levels are established at the outset. These KPIs are regularly reviewed through surveys, feedback forms, and engagement metrics from project management tools, providing a quantitative and qualitative measure of engagement success. Regular stakeholder meetings and check-ins serve not only as platforms for update sharing and feedback gathering but also as opportunities to gauge stakeholder sentiment and involvement directly. The monitoring process is streamlined through the use of automated tools for tracking communication frequency, response times, and participation rates in decision-making processes. This data-driven approach enables the project team to identify trends, pinpoint areas for improvement, and implement adjustments swiftly, ensuring that stakeholder engagement remains high and aligns with project goals. The efficiency and effectiveness of the monitoring process are further enhanced by setting clear benchmarks for engagement and maintaining an open line of communication with all stakeholders, facilitating a dynamic and responsive engagement strategy that evolves with the project’s needs and stakeholder expectations.

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this stakeholder management plan and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Scope Management Plan

Scope Statement

The team will deliver a software program and user interface to the sponsor to allow Black Dog Estates to forecast occupancy rates and potential profit for short, mid, and long-term rentals as well as recommend dynamic pricing. This program will take an input of historical rental data in a specified area then provide the desired forecast data for the same area to the user in an easy to understand and intuitive interface.

Work Breakdown Structure

A chart depicting the work breakdown structure for the software project with subcategories and specific tasks is shown in Figure 1.

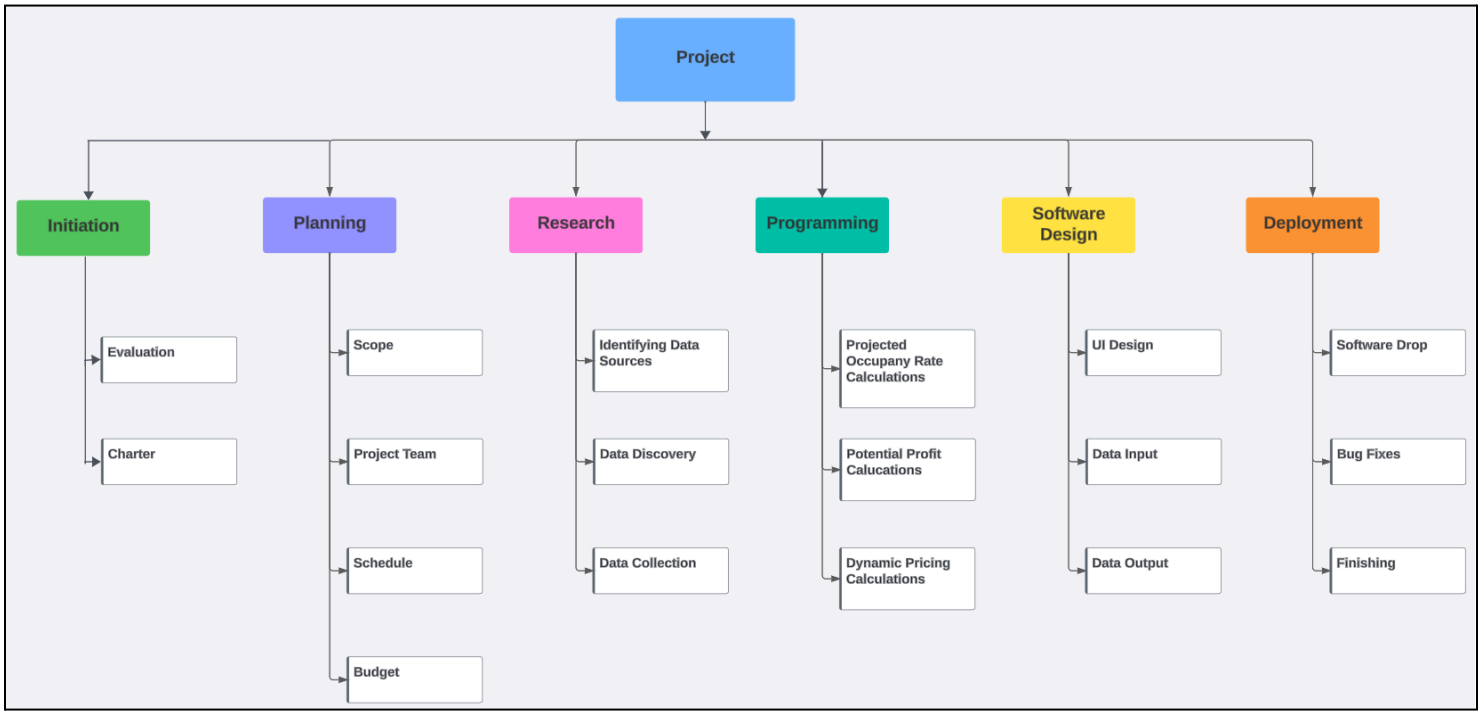

Figure 1: Work Breakdown Structure

Project Timeline

The tentative project timeline is outlined by the tasks and dates in Figure 2.

Task Name	Duration	Start	Finish
Project Initiation	**5 days**	**Mon 2/5/24**	**Fri 2/9/24**
Project Evaluation	3 days	Mon 2/5/24	Wed 2/7/24
Project Charter	3 days	Wed 2/7/24	Fri 2/9/24
Project Planning	**10 days**	**Fri 2/9/24**	**Thu 2/22/24**
Scope	3 days	Fri 2/9/24	Tue 2/13/24
Project Team	3 days	Tue 2/13/24	Thu 2/15/24
Schedule	3 days	Thu 2/15/24	Mon 2/19/24
Budget	4 days	Mon 2/19/24	Thu 2/22/24
Project Research	**10 days**	**Thu 2/22/24**	**Wed 3/6/24**
Identify Data Sources	3 days	Thu 2/22/24	Mon 2/26/24
Data Discovery	3 days	Mon 2/26/24	Wed 2/28/24
Data Collection	6 days	Wed 2/28/24	Wed 3/6/24
Programming	**10 days**	**Wed 3/6/24**	**Tue 3/19/24**
Projected Occupancy Rate Calculations	4 days	Wed 3/6/24	Mon 3/11/24
Potential Profit Calculations	4 days	Mon 3/11/24	Thu 3/14/24
Dynamic Pricing Calculations	4 days	Thu 3/14/24	Tue 3/19/24
Software Design	**10 days**	**Tue 3/19/24**	**Mon 4/1/24**
UI Design	4 days	Tue 3/19/24	Fri 3/22/24
Data Input	4 days	Fri 3/22/24	Wed 3/27/24
Data Output	4 days	Wed 3/27/24	Mon 4/1/24
Deployment	**12 days**	**Mon 4/1/24**	**Tue 4/16/24**
Software Drop	5 days	Mon 4/1/24	Fri 4/5/24
Bug Fixes	5 days	Fri 4/5/24	Thu 4/11/24
Software Release	4 days	Thu 4/11/24	Tue 4/16/24
Course Assignments	**52 days**	**Mon 2/5/24**	**Tue 4/16/24**
Publish Team Charter	1 day	Mon 2/5/24	Mon 2/5/24
Half Way Point Presentation	6 days	Mon 2/12/24	Mon 2/19/24
Resource Management Plan	6 days	Tue 3/19/24	Tue 3/26/24
Stakeholder Management Plan	6 days	Tue 3/26/24	Tue 4/2/24
Project Closeout	6 days	Tue 4/9/24	Tue 4/16/24

Figure 2: Project Timeline

The gantt chart giving a visual representation of the above tasks is shown in Figure 3.

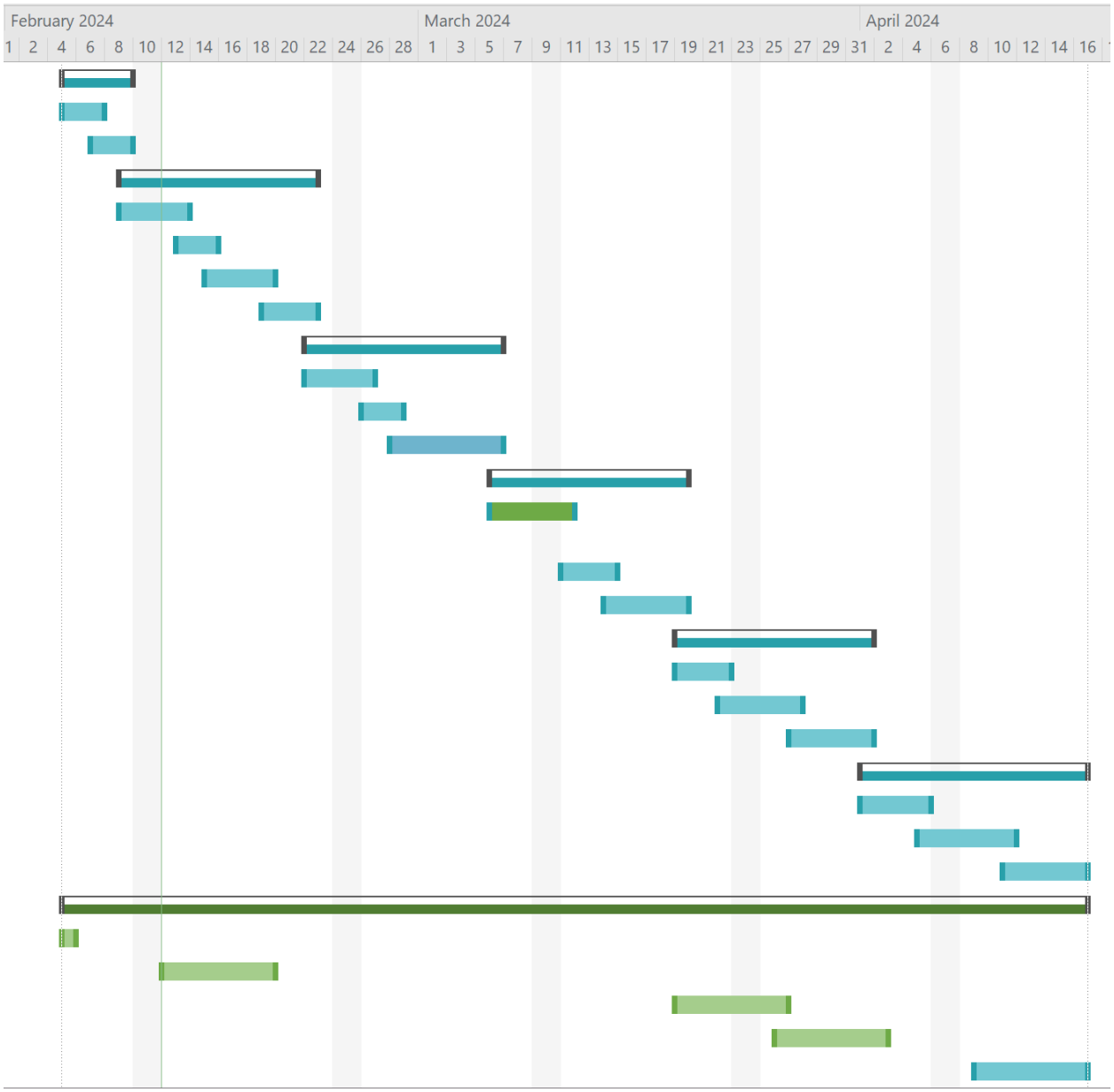

Figure 3: Project Gantt Chart

Scope Management Strategy

All team members and stakeholders have read and acknowledged the scope statement and project timeline. This acknowledgement will allow the team to stay on track throughout the project and keep everyone on the same page with expectations. Should the team or stakeholders see the need to adjust the

scope of the project all parties must meet to discuss the feasibility of a scope change with regards to time, budget, and skills. If a scope change is agreed upon by all parties this scope management plan will be amended to reflect the new approved project scope and will be signed again to acknowledge the changes.

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this scope management plan and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Requirements Management Plan

Requirements Collection and Tracking

The team communicated with the key stakeholder to discover the specific requirements the sponsor desired for their software program. Each requirement for the final product has been given a rating of high, medium, or low priority. High priority requirements are essential for product launch, medium priority requirements are desired for an ideal product but may be released in a secondary version of the product, low priority requirements are the ideal case if the team is left with additional time and money.

Requirements/ Deliverables Tracking

Table 1, below, is used to document the requirements given to the team, their priority level, and their completion status. This tracking table will allow the team and stakeholders to stay on the same page with the progress of the software.

Task Description	Priority Level	Status
Forecast occupancy rate for specified date range	High	Complete
Calculate potential profit for short, mid, and long-term rental given specified price	High	Complete
Easy to use user interface	Medium	Complete
Recommend dynamic pricing for a given property type and location	Medium	Complete
Calculations based on user provided data	Medium	Complete
Calculations based on user provided location	Low	Scope change - only works for Blacksburg, VA

Table 1: Requirements Tracking

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this requirements management plan and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Risk Management Plan

Risk Severity Matrix

Figure 1 shows an image of the strategic risk severity matrix that the team used to classify risks to the project.

Figure 1: Grace LaConte's Strategic Risk Severity Matrix [1]

Risk Management Plan

The team's risk management plan is described in Table 1 below.

Risk Description	Probability (1 - 5)	Impact (1 - 5)	Risk Severity Score (Prob x Impact)	Mitigation/ Response Plan	Owner
If we are unable to acquire real data (such as rental logistics), then, then there will be dependability issues to the project.	**3**	**4**	**12**	The team will use a random number generator of some sort to generate random data. The number range will be based on real data approximations. This risk mitigation technique reduces the risk severity to a **2**.	**Tech Lead**
The team may not have the programming skills to meet all the sponsor's software expectations.	**4**	**3**	**12**	The team will meet with the Sponsor at the beginning of the project to determine reasonable software expectations and the team will use tutorials and other online materials to increase their programming knowledge as needed. These risk mitigation techniques reduce the risk severity to a **2**.	**Project Manager & Programmer**

Table 1: Risk Management Plan

Enterprise Environmental Factors

The team identified a few enterprise environmental factors that may have potential impacts on project completion.

- Market Changes
    - The housing market can change rapidly and it is possible that the housing price data we use to create our software could quickly become outdated
- Natural Disasters
    - A natural disaster including flooding and fire could severely damage a rental property or even an entire town which would greatly reduce the property values and thus impact the effectiveness of our tool
- Data Legality Issues
    - The team plans to draw rental cost data from sites like Zillow and Airbnb, if the sites change their data usage laws we could lose our source of data

Organizational Process Assets

Organizational process assets help an organization run smoothly by providing a baseline or template for many processes. As our team only just formed for this project we do not have any organization specific assets. However, our team will follow best practices guides and principles from the PMBOK and our project management class to ensure all processes run smoothly.

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this risk management plan and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

References

[1] G. LaConte, "How to Calculate the Impact and Probability of Business Risk," *LaConte Consulting*, Dec. 02, 2018. https://laconteconsulting.com/2018/12/02/calculate-impact-and-probability/

Resource Management Plan

Resource Management Plan

The Resource Management Plan serves as a blueprint for effectively managing resources throughout a project's lifecycle [1]. Its primary objective is to ensure that all necessary resources are identified, allocated, and utilized efficiently to meet project objectives while considering constraints and limitations. One of the primary purposes of the Resource Management Plan is to provide clarity on the rationale behind resource allocation and utilization. By clearly defining resource needs and aligning them with project goals, this plan facilitates informed decision-making, reduces resource wastage, and optimizes resource utilization. This clarity aids project managers and stakeholders in understanding the resource requirements and how they contribute to overall project success.

A crucial aspect of the Resource Management Plan involves estimating project resources. This includes identifying all required resources, such as human, physical, and material resources, and estimating the quantities needed based on project specifications, scope, and complexity. Additionally, the plan considers resource availability and limitations, assessing internal and external factors that may impact resource procurement and utilization.

The purpose of this Resource Management Plan is to ensure effective allocation and utilization of resources for the development of the software project aimed at forecasting occupancy rates, potential profit, and dynamic pricing for short, mid, and long-term rentals. This plan will facilitate informed decision-making, reduce resource wastage, and optimize resource utilization to achieve project objectives efficiently.

Estimation of Project Resources

For the successful development of the software project, the following resources are identified as essential:

Human Resources:

- Project Manager (1)
- Technical Lead (1)
- Programmer (1)
- Business Analyst (1)
- User Experience Expert (1)

Physical Resources:

- Computers/laptops (Sufficient for each team member)
- Software development tools and platforms (Licenses for necessary software/tools)
- Office space for team meetings (if applicable)

Material Resources:

- Historical rental data sets (Access to comprehensive datasets covering short, mid, and long-term rentals in the target area)
- Documentation and reference materials related to programming languages and tools

When considering human resources, we will assess the availability of skilled professionals either within our existing team or through external hiring processes. Regarding physical resources, we will ensure the availability of necessary equipment and software licenses either from our organization's inventory or through procurement. Additionally, for material resources, we will prioritize the availability of comprehensive and reliable historical rental datasets, taking into account any potential limitations or restrictions on data access.

The resource estimation process will be continuously reviewed and updated throughout the project lifecycle to ensure that the allocated resources remain adequate and effectively utilized to meet project objectives within the specified constraints and limitations.

Resource Acquisition

The team was initially created by randomly assigning five people to our particular project group. All human resources, therefore, must be supplied from this group of five people. Each of the roles listed in the previous section were filled by one of the team members. The roles were assigned based on consensus of the group based on team members skills and prior experience to place everyone in a role that was best suited for them.

Many of the required physical resources for the team were already in possession of the team before the start of the project. Each team member will need access to a computer and basic word processing software which each team member already had. As for office space for meetings the team decided upon conducting all meetings virtually through zoom due to location differences and to cut costs and each team member

already has access to zoom through the university. The final component of resources the team needs to acquire are the software programs to conduct the analysis of the data and to create the final application. These software programs will be downloaded from the Virginia Tech software hub free of charge.

The team's general resource acquisition strategy is to use the free applications provided by Virginia Tech to the fullest extent and to use the resources already available to the team before acquiring new materials. This strategy will allow the team to save money on extra materials and keep costs low for the customer. In the case that the team discovers that additional resources are required the project manager will evaluate the requests for additional resources to determine if there are any cheaper alternatives, if none are found they will notify the customer of the change and complete the purchase.

Team Development

In the formation of the team for the project the team carefully selected roles for each team member to ensure the successful delivery of the software project. Daniel Soto Jr., a member of Black Dog Estates, LLC, was appointed as the Key Stakeholder, representing the interests of the Sponsor and ensuring the project aligns with the company's needs. The company itself, Black Dog Estates, LLC, took on the role of the Sponsor, providing necessary funding and resources. Allison Roush was chosen as the Project Manager, tasked with the overall management of the project, including guiding the Key Stakeholder through the development process and ensuring the project adheres to timelines, budget, and quality standards. Kiara Chambers assumed the role of Technical Lead, translating project objectives into specific technical tasks for the development team and addressing any technical challenges that arise. Sreenath Krishnan Potty, as the Programmer, focused on executing technical tasks and problem-solving within the code. Ashutosh Srivastava, the Business Analyst, undertook the analysis of market trends, financial data, and customer preferences to inform dynamic pricing strategies and technological solutions. Lastly, Brandy Soto, the User Experience Expert, was responsible for optimizing the product's usability and user satisfaction through rigorous user research and interface design. This strategic alignment of roles ensures a comprehensive approach to the project, from understanding market demands to delivering a user-centric software solution.

To foster an efficient team dynamic for the project, several key development strategies and techniques were employed. The foundation was built on clear and transparent communication channels, ensuring that every team member, from the Key Stakeholder to the Programmer, could share insights, feedback, and updates effectively. Regular team meetings and check-ins were instituted to keep everyone aligned on

project goals, progress, and any shifts in priorities. Leadership also prioritized the establishment of a psychologically safe environment where team members felt valued and encouraged to express their ideas and concerns without fear of negative consequences. This approach fostered a culture of trust, mutual respect, and collective accountability. Additionally, professional development opportunities were provided, enabling team members to refine their skills and stay abreast of the latest industry trends and technologies. These strategies not only propelled the project forward but also contributed to the personal and professional growth of the team, setting a solid foundation for future successes.
A comprehensive approach to Training and Skill Development is pivotal, ensuring that all team members, from the Technical Lead to the User Experience Expert, possess the latest knowledge and competencies required to navigate the complexities of the project. This plan includes scheduled team meetings, certification courses, and access to online learning platforms to keep the team abreast of cutting-edge technologies and methodologies. Emphasis is placed on both technical skills and soft skills, such as project management and communication, to enhance team collaboration and efficiency.

Alongside skill development, the Monitoring and Evaluating Team Performance segment is equally critical. This involves setting clear performance metrics aligned with project goals, regular reviews of individual and team progress, and feedback sessions that are constructive and aimed at fostering growth. Performance evaluation also includes the utilization of project management tools to track progress against milestones and deliverables. This dual approach ensures that the team not only advances in their professional capabilities but also remains aligned and accountable to the project's objectives, thereby facilitating a dynamic and responsive project environment.

Team Management

The primary leadership style that the team will adopt is collaborative. As is evident from the previous section, the open lines of communication allow team members with different roles to express their needs and progress cross-functionally and get feedback from the team to improve their product and performance. Collaborative leadership allows every team member’s voice to be heard and for decisions to be made collectively that benefit all parties. This form of leadership fosters a sense of unity among the team and drives innovation as team members can review each other's work and ideas and provide alternate and unique perspectives.

If conflict arises during the collaborative approach, the designated program manager will work with the key stakeholder and have the ultimate decision authority. The program manager will hear both sides of the argument and look for ways to find compromise. If compromise is not achievable, the program manager

will choose the course of action that they believe is best for the program after consulting the key stakeholder for their inputs. Placing the decision authority on the program manager helps take blame away from the team members and still allows the team to keep a united sense of direction and continue to make progress.

In accordance with the team's communication plan, status meetings take place once per week with all of the team members. During meetings, team members will provide status to the program manager on their respective portions of the project. This will also be an opportunity for team members to solicit feedback from the group. Strategies that the team is encouraged to use are to focus on the problems at hand rather than placing blame on individuals. They should keep in mind that the team must work together against conflicts not against other team members. If arguments start to become personal rather than focusing on the problem at hand, the program manager will step in to de-escalate and reiterate the focus on solving the issue. Team members are encouraged to not take criticism personally, but use it as an opportunity for collaborative improvement on the final product.

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this resource management plan and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

References

[1] Marks, L. (2023, November 23). *How to create a resource management plan*. Runn. https://www.runn.io/blog/resource-management-plan#:~:text=Resource%20management%20plans%20detail%20how,them%20effectively%20for%20project%20success.

Quality Plan

Quality Control Plan Overview

The purpose of this Quality Control Plan is to document the quality requirements and standards as well as the procedures for testing and documentation of the team's software development project. This document will help ensure that the stakeholders as well as the team agree on what a quality final product will look like and will set up a communication plan so all stakeholders can be kept up to date on the status of the project and can provide feedback if the results are not up to their quality standards.

Standards

The team will design the software product to comply with the following standards. Meeting and exceeding these standards will help ensure a quality product.

- **ISO/IEC 25010 [1]**: Systems and software engineering - Systems and software Quality Requirements and Evaluation (SQuaRE): This standard ensures that the software tool being developed meets the quality requirements specified by Black Dog Estates, LLC. It covers various quality characteristics such as functionality, reliability, usability, efficiency, maintainability, and portability, which are crucial for the success of the project.
- **IEEE 830 [1]**: Software Requirements Specification (SRS): Given the complexity of the project and the need to analyze existing data, predict future demand, profit margins, and recommend dynamic pricing, having a well-defined and documented Software Requirements Specification (SRS) is critical. This standard helps accurately capture and document the requirements of the software tool to ensure it meets the business needs of Black Dog Estates, LLC.
- **ISO/IEC/IEEE 26512:2011 [1]**: Systems and software engineering -- Requirements for user documentation: Clear and comprehensive user documentation is essential, especially in projects like Black Dog Estates, LLC's, where analyzing data and predicting demand is crucial. Adhering to ISO/IEC/IEEE 26512:2011 ensures the development of user-friendly documentation, enabling stakeholders and end-users to understand and utilize the software tool effectively.

Testing Requirements

The team will conduct the following tests at different stages of the development process to give a bench mark so the team knows how well the product is performing and if it is at the required level of quality.

- Testing Techniques:
    - Black Box, White Box, and Grey Box Testing Techniques[1] will be conducted during each software drop.
    - The Tech Team will be responsible for performing these testing techniques at the back-end code development staging.
- Usability Testing:
    - Usability testing will occur at the final software drop.
    - The full team will participate in usability testing.
    - Usability testing will focus on assessing the ease of use and navigation of the software.
- Acceptance Testing:
    - Acceptance testing will be conducted by an external user.
    - The external user will upload data, perform calculations, and evaluate the user interface's ease of use and navigation.
    - Both usability testing and acceptance testing will be performed on the front-end of the application.

Change/ Modifications Documentation Procedure

The team will utilize the Scrum Agile framework with the support of Microsoft Project to monitor changes to the project or process. In Scrum, work is structured into short sprints lasting 2-4 weeks, starting with a planning meeting to agree on tasks. Daily stand-up meetings monitor progress and address obstacles, while sprint reviews and retrospectives evaluate completed work for improvement opportunities. When major changes are made or the software does not pass the quality test at any phase of the project, all stakeholders will be notified of the issue as well as the team’s plan to tackle it. At this point the stakeholders will be able to give their input on the proposed path forward so that everyone is on the same page and so that there will be no surprises at the end of the project.

[1] The testing process encompasses black, white, and gray box techniques to thoroughly evaluate software functionality and structure

Quality Testing Results

- Black/white/gray box testing
    - Completed hand calculations of equations using random values and compared these results with the calculations resulting from using the software program
        - The results consistently matched!
        - This testing did however reveal the need to set a baseline minimum cost for each rental type so this was included in the code
    - Work Performance Data
        - Completing this testing provided the team with work performance data on each task that needed to be completed in the program by providing an output number that was calculated, this data then had to be compared to the expected values as described above.
- Usability Testing
    - Each team member attempted to use the final software program to calculate the metrics based on user inputs
    - All team members were able to use the program successfully without difficulty
- Acceptance Testing
    - The final software program was presented to the key stakeholder to test
    - They needed initial assistance to download the background software to run our program but after that they really enjoyed the ease and simplicity of our program
    - Key stakeholder approved!

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this quality management plan and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

References

[1] *International Organization for Standardization*. ISO. (2024, January 31). https://www.iso.org/home.html

Cost Management Plan

Cost Management Plan

This cost management plan documents the total expected costs over the course of the project as well as breaks down costs into work phases and my cost type. This plan also includes a way for the team to monitor costs throughout the project and details a plan to communicate budget updates to the stakeholders. The cost management plan is an essential document because it clearly outlines costs and the plan for tracking them. This level of transparency is important so that the stakeholders have trust in the project team and don't feel like they are getting charged for unreasonable expenses.

The cost estimates for the project are composed of an estimate of labor costs and an estimate of resource costs. Labor costs were calculated based on an hourly rate for each position while resource costs were calculated based on subscription costs to software required for designing the product as well as costs for communication and documentation applications. These costs were then broken down into three main project work phases and a cost estimate for each phase was determined by the labor costs and resource costs associated with the period of time that a particular phase would cover. Finally, the authorized budget was composed of the total labor and resource costs as well as an added 5.55% contingency reserve to cover any unforeseen expenses.

As the project progresses the team will keep track of actual expenses during each phase of the project and document this cost as well as the variance from the original budget. This cost management plan will also document the team's corrective action plan should the project begin to go over budget as well as a stakeholder communication plan to ensure that our stakeholders are kept up to date on the team's progress and financial situation.

Cost Estimates

The Labor Cost Estimate for the project details the expected number of hours worked, hourly rate, and total cost for each team member's position, as outlined below in Table 1. This estimate also includes a 10% margin to account for overtime hours. The Resource Cost Estimate includes a variety of software used in development of our final product as well as the standard use of communication and word processing software, as shown below in Table 2. The labor cost estimate totals $9,730 while the resource cost estimate totals $1,165 bringing the total project cost estimate to $10,895. Note that this total project

cost estimate is just the expected costs, an additional contingency reserve is included in the authorized budget for unexpected costs.

Role	Number of Hours	Hourly Rate	Total Cost
Program Manager	33	$71	$2,343
Technical Lead	33	$66	$2,178
Programmer	33	$41	$1,353
Business Analyst	33	$40	$1,320
User Experience Expert	33	$50	$1,650
Margin	10%		
Total Labor Cost	**$9,730**		

Table 1: Labor Cost Estimate

Service	Cost	Rate/ Frequency	Total Cost
Zoom - Video Conference	$15.99	Monthly	$63.96
Microsoft 365 Apps for Business	$8.25	Monthly	$33.00
Microsoft Project	$10	Monthly	$40.00
MATLAB Standard	$980	Yearly	$980.00
Figma Professional	$12	Monthly	$48.00
GroupMe	$0	Yearly	$0.00
FlutterFlow	$0	Yearly	$0.00
Total Resource Cost	**$1,165**		

Table 2: Resource Cost Estimate

Cost Baseline

The cost baseline for this project is determined by the cost estimate per phase of the project. The project was broken into three phases based on the work breakdown structure (WBS), shown in Figure 1. The budget for each of the three phases was determined based on the percentage of the labor cost estimate that correlated with the amount of time spent in each phase as well as the cost of resources used during that phase, this breakdown is shown in Table 3. The cost baseline does not include the contingency reserve, the total cost in the cost baseline is equal to the labor costs plus the resource costs.

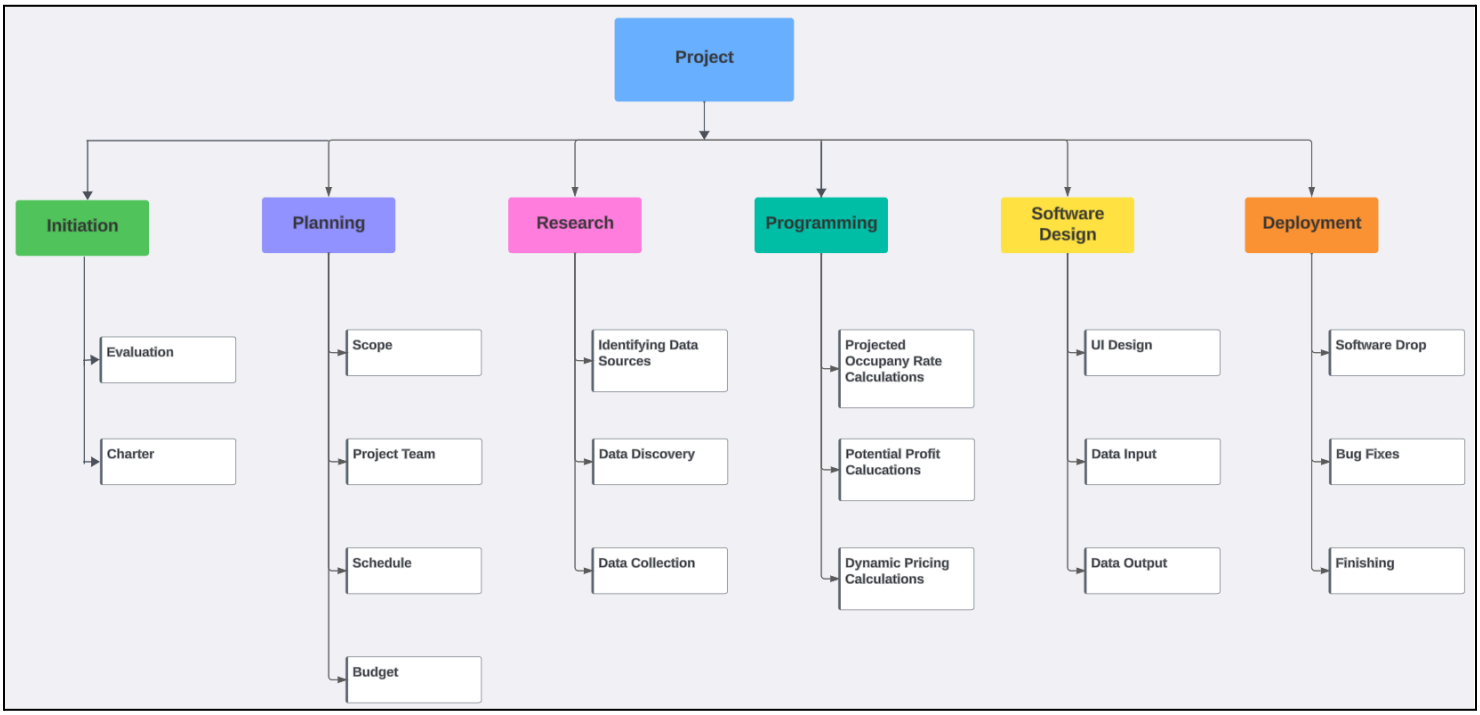

Figure 1: Work Breakdown Structure

Project Phase	Budgeted Total	Comments
Initiation, Planning, and Research	$4,940	1. Covers work hours of all project team members. 2. Initial investments for all resources needed.
Programming and Software Design	$3,168	1. Covers work hours of all project team members. 2. Use of all resources required.
Deployment	$1,901	1. Covers work hours of all project team members 2. Use of all resources required.

Table 3: Cost Estimates by WBS Phase

Authorized Budget

The total authorized budget for this project is $11,500. This is a total of the expected labor costs, resource costs, and a contingency reserve of 5.55% to cover any unexpected costs, this is broken down in Table 4 below. This authorized budget has been discussed with and approved by the stakeholders as the amount they are willing to pay for this project.

Category	Description	Estimated Cost
Labor Costs	Cost of labor for all team members as well as a 10% margin to compensate for additional work hours over budget.	$9,730
Resource Costs	Cost of yearly and monthly subscriptions to software and applications required for product development and team communication.	$1,165
Contingency Reserve	Reserve funds for unexpected costs such as additional resources or delays, equal to 5.55% of labor and resource costs.	$605
Total Project Authorized Budget	**$11,500**	

Table 4: Authorized Project Budget

Contingency Reserve

A contingency reserve is the money set aside to handle unexpected events that might impact a project's cost, schedule, or quality. By having a contingency reserve, project managers can effectively handle unforeseen risks that arise during the project which enables them to communicate the extent of risk exposure to stakeholders and enhances the predictability of project outcomes. This reserve provides a buffer that allows for more proactive management of uncertainties, contributing to the overall success of the project. Once the contingency reserve has been established, it serves as a valuable tool for communicating potential risks, dealing with them as they arise, and enhancing the overall predictability of a project's outcome. It provides a means to address uncertainties and maintain a more controlled and informed project management approach[1][2]. In addition to the 10% margin of labor costs, there is also a 5.55% margin of labor and resource cost, i.e. $605, set aside in this project as a contingency reserve which adds to the overall authorized budget.

Management Reserve

A management reserve is a pot of money of a size that is based on the overall uncertainty of the project[3]. The management reserve is usually determined by upper management to act as a safeguard against unforeseen risks. Together with the cost baseline, the management reserve completes the cost budget, offering an additional layer of financial protection for addressing any unexpected challenges that may arise during the project[1][2]. A margin of 10%, adding up to $1090.00, is set aside for this project as management reserve in the event of unforeseen circumstances or expenses.

Cost Monitoring Plan

The cost monitoring plan for the project involves a systematic approach to tracking costs throughout each phase of the project, closely aligning with the work breakdown structure (WBS) to document changes from the initial cost estimates, as shown in Table 5. To facilitate this the project team, group 4 will maintain a robust monitoring system wherein actual expenses are continuously compared against the budgeted amounts for each phase. This process involves regular updates to the cost baseline, reflecting any deviations from the initial estimates. Key performance indicators will be established to gauge cost performance, including metrics such as cost variance and cost performance index. Additionally, cost tracking software or spreadsheets will be utilized to streamline data collection and analysis. Any discrepancies or variances identified during the monitoring process will trigger immediate investigation

and analysis to ascertain the root causes. These findings will be documented, and if necessary, corrective actions will be implemented to realign the project's financial trajectory with the authorized budget. Furthermore, clear communication channels will be established to ensure stakeholders are kept informed of any significant cost changes or adjustments, fostering transparency and maintaining stakeholder confidence throughout the project.

Project Phase	Budget	Actual Cost	Variance	Status	Notes
Initiation, Planning, and Research	$4,940	$5,032	+ $92	Complete	Saved money by choosing Python over MATLAB but required more work hours than expected for initial research for equations.
Programming and Software Design	$3,168	$3,388	+ $220	Complete	Saved a little money by not using Figma but required a little more man hours for programming.
Deployment	$1,901	$1,340	- $561	Complete	Deployment went very quickly since everything worked well so money was saved.
Expected Budget	**$10,009**	**$9,760**	**- $249**		**Came in just under expected budget.**
Total Budget with Contingency	**$11,500**	**$9,760**	**- $1,740**		**Came in well below budget with reserve.**

Table 5: Cost Monitoring Through WBS Phases

Corrective Action Plan

Group 4 will monitor the budget closely and review the budget internally on a weekly basis in the form of a budget meeting. During our weekly budget meeting, items that appear to be trending to go over budget or items that are already over budget will be prioritized for discussion. If the reason for that item going over budget is not readily apparent, the group will conduct a root cause analysis to determine why that item has gone over budget. If the root cause is something that can be addressed, the team will decide the best course of action going forward to minimize spending on that item. If the root cause cannot be addressed, the team will prioritize items left to be conducted on the project and reduce scope where feasible. Some examples would be to reduce the number of hours of work per week for some of the team members, cutting out items that can be worked around or finding cheaper alternatives, and potentially reducing scope of the project itself. These courses of action will require heavy stakeholder involvement to ensure that the stakeholder's needs are being met and that their priorities for the project are understood by the members of the team. The plan for stakeholder communication will be outlined in the next section.

Stakeholder Communication Plan

Group 4 will have project status reviews with the stakeholder biweekly to discuss program progress, risks, and mitigation plans. The meetings will also address the budget to ensure that the stakeholder has an understanding of how the team is using their money to make their vision a reality. If a major change is required for budget or scope of the project, the team will reach out to the stakeholder immediately via email or text message with a summary of the problem or change and request a meeting to discuss more in depth as soon as possible. If a major item in the project is consistently resulting in issues or risk to the program, Group 4 will request to increase the frequency of the project status reviews to weekly in order to more closely monitor the risk factor and gain the stakeholder's input on how they would like to proceed.

References

[1] Project Management Institute. (2009). Practice standard for project risk management. Newtown Square, PA: Author.

[2] Project Management Institute. (2013). A guide to the project management body of knowledge (PMBOK® guide) – Fifth edition. Newtown Square, PA: Author.

[3] "Management Reserves and Contingency Reserves: What's the Difference?" [URL: https://www.projectmanagement.com/blog-post/5806/management-reserves-and-contingency-reserves--what-s-the-difference-].

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read and acknowledged the contents of this cost management plan and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Approved Change Requests

Purpose

Documenting change requests are essential to ensure that all stakeholders are properly informed of major changes to the project and so that all parties can agree on the path forward.

Approved Requests

- Change of scope of locations:
    - Reduce the scope of locations the program can calculate metrics for
    - Chose Blacksburg, VA as the sole location that the program can calculate metrics for
    - One location is a good starting point for the program with the capability to increase the span of the program in the future as Black Dog Estates expands their business

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have read, acknowledged, and approved the contents of this change request document and agree to terms set forth and will contribute their best effort to fulfill their role.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Lessons Learned Register

Purpose

The purpose of conducting a lessons learned session and keeping track of responses in a register is so that an organization can constantly improve. If there is no documentation future projects may make the same costly mistakes, but if lessons learned are documented future teams can learn from past mistakes and mitigate them from the beginning of the project.

Lessons Learned

- Extensive project research is required before even completing the project charter, scope, and deliverables.
    - Our team jumped into the project with an idea and agreed to complete certain deliverables based on the customer's needs. This led to issues because we had no idea how difficult it would be to obtain certain data and to create our own forecasting equations. This resulted in many additional work hours for team members before ultimately discussing a reduction in scope with the key stakeholder. Thankfully we were able to reduce to a manageable scope by limiting the area to Blacksburg, VA and the customer was okay with it because location was the least important requirement. In the future extensive research should be completed before agreeing to project terms.
- Plan for additional man hours in labor costs.
    - Due to a large scope the team needed to spend a lot more time working on the project than was originally budgeted for. Thankfully we were able to remain under budget by switching to a free software development system but if we were unable to do that we would have been way over budget based on man hours. In the future teams should fully think through the scope of what needs to be done and come up with a more detailed estimation of work hours required. A significant contingency should also be included in the labor costs estimation.
- Sometimes simplicity is better than fancy features.
    - During the user interface design phase of the project the team faced serious delays due to the desire to make the UI very visually appealing with many features and display windows. To make a program look like that required much more skill than our team currently had and would require a lot more time to learn how to do something like that. The team ultimately created a very simple UI that allowed the user to input their parameters and click submit which then displayed all output parameters. This UI provided all necessary functionality in a very simple and intuitive way which the customer was very happy with. Future projects should consider if it is really worth all the extra resources required to make a project "pretty" if the customer is primarily focused on a project that provides them with the desired functionality.

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have acknowledged the contents of this lessons learned register.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Project Impact Report

Purpose

The purpose of this project impact report is to detail the uses of the software developed in this project and the impact it will have on our sponsor Black Dog Estates.

Project Impacts

- Project Vision
    - To create a software that will accurately forecast short-term, mid-term, and long-term rental demand, predict occupancy rates, and recommend dynamic pricing for each rental type
- Key Accomplishments
    - Created a functional UI that allows the user to input several key factors about their rental interest and displays the values listed in the project vision.
    - Enable the user to make informed decisions about an area to potentially buy property in, what type of rental investment strategy to establish, and give the user an idea of their projected profits and occupancy
- Considerations
    - The UI only works for properties located in Blacksburg, VA
- Way Ahead
    - Continue to make the tool robust by incorporating more cities and neighborhoods across the US into the tool
    - make the tool more visually appealing using superior coding skills or artificial intelligence
    - continue to update the current tool programming as the market changes

Acknowledgements

All project team members and the primary stakeholder on behalf of the project sponsor have acknowledged the contents of this project impact report.

Team Member Signatures: *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Primary Stakeholder/ Sponsor Signature: *Daniel Soto Jr.*

Meeting Log

Tuesday January 30th

- Meeting Notes:
    - Quick meeting to get to know each other
    - Discussed potential project ideas
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday February 5th

- Meeting Notes:
    - Finalized term project sponsor and idea
    - Went over team charter assignment
    - Assigned tasks to finish team charter assignment by the next day
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday February 6th

- Meeting Notes:
    - Briefly met during class
    - Discussed roles for completing the project management assignment
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday February 12th

- Meeting Notes:
    - Met to discuss the project management assignment
    - Split up roles and finished completing the assignment
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday February 13th

- Meeting Notes:
    - Met briefly during class
    - Discussed how we are going to complete the cost management plan
        - Will research realistic job rates
        - All numbers will be made-up - the team is not actually receiving any money from the sponsor
    - Split up who will be completing what parts of the cost management plan
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday February 19th

- Meeting Notes:
    - Finished up working on the cost management assignment
    - Discussed next steps for actually completing the software part of the project
        - Good resources to pull data off of zillow and other housing sites using python
        - Ability to create a nice user interface
        - Potential to create data for a housing area to test our program
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday February 20th

- Meeting Notes:
    - Quick meeting during class
    - Discussed the midterm project presentation
        - Assigned team roles - slides and presentation
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday February 26th

- Meeting Notes:
    - Met to go over midterm presentation slides
    - Practiced the presentation
    - Finalizing mid term document
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday February 27th

- Meeting Notes:
    - Gave midterm presentation
    - Got good feedback
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday March 12th

- Meeting Notes:
    - Discussed the resource management plan assignment
        - Planned out how we will work on it
    - Discussed data scraping
        - Will try it a little more
        - If it doesn't work will create data instead
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday March 18th

- Meeting Notes:
    - Went over the resource management plan
        - Finalized everything - ready to turn in
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday March 19th

- Meeting Notes:
    - Discussed the project management plan assignment
        - Planned out how we will work on it
    - Talked about how we will create equations from the data to predict future prices
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday March 25th

- Meeting Notes:
    - Finalized project management plan assignment
        - Finalized everything - ready to turn in
        - Planned out how we will work on it
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday March 26th

- Meeting Notes:
    - Discussed the quality control plan assignment
        - Planned out how we will work on it
    - Talked a lot about how we are creating the equations
        - Pulled data from zillow on bedrooms, bathrooms, occupancy, and cost
        - Figured out how much data we needed
        - Collected a spreadsheet with data from about 30 different rental postings
        - Used JMP to conduct an analysis on the given variables to figure out what variables had an effect on the cost and from this JMP outputted a equation
        - This equation can then be used to calculate the cost of a new property based on the same given input variables
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday April 1st

- Meeting Notes:
    - Discussed the quality control plan
        - Still had some questions on the scope of the assignment
        - If no new information is posted by the next day we will submit the assignment as is - pretty much ready to go
    - Discussed equations for short term rentals during each of the 4 seasons
        - Created new equations for each season, each with different variables and values based on the data we collected
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday April 2nd

- Meeting Notes:
    - Discussed the project closeout activity
        - Planned out how we will work on it
    - Discussed what tasks we still need to complete
        - Get equations for midterm and long term rentals
        - Create user interface
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Wednesday April 3rd

- Meeting Notes:
    - Discussed the GUI for our program
        - All inputs and outputs look good for cost equations
        - Easy to use interface
    - Next steps
        - See what we want to do for occupancy forecasting
        - Project wrap up stuff
        - Class presentation next class - don't know what we're presenting on yet
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday April 9th

- Meeting Notes:
    - Discussed the GUI for our program
        - All inputs and outputs look good for cost equations
        - Easy to use interface
    - Next steps
        - See what we want to do for occupancy forecasting
        - Project wrap up stuff
        - Class presentation next class - don't know what we're presenting on yet
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday April 15th

- Meeting Notes:
    - Finished class presentation
        - Worked on slides for class presentation
        - Giving it on risk management
        - Split up who is going to present on what
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday April 16th

- Meeting Notes:
    - Gave chapter presentation on risk management
    - Next steps
        - Kiara, Sreenath, and Ashutosh will work on the final presentation slides and give the presentation on 4/30
        - Allison and Brandy will work on the project closeout assignment and gathering all the documents by 5/1
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Tuesday April 23rd

- Meeting Notes:
    - Discussed and confirmed again our next steps
        - Kiara, Sreenath, and Ashutosh will work on the final presentation slides and give the presentation on 4/30
        - Allison and Brandy will work on the project closeout assignment and gathering all the documents by 5/1
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*

Monday April 29th

- Meeting Notes:
    - Finalized final presentation slides
        - Brandy and Allison will also present but just the demo
    - Discussed all closeout procedures
    - Met with stakeholder to pass on the final project and all documents
        - They were happy with what was received
    - Virtual celebration for finishing the project
- Team Member Signature Acknowledgement
    - *Kiara Chambers, Sreenath Krishnan Potty, Allison Roush, Brandy Soto, Ashutosh Srivastava*