Cecil Data Mart Development Plan

**Developed by Jean Ben Booker**

**Originally Created:** October 2022

**Change Log**

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| --- | --- | --- |
| **Who** | **When** | **What** |
| Jean Ben Booker | 10/1/2022 – 2pm | Created the development plan for Cecil data mart and completed initial draft of information package |
| Jean Ben Booker | 10/2/2022 – 8:30pm | Created the object worksheet and began populating it with information |
| Jean Ben Booker | 10/3/2022 – 1pm | Continued working on the object worksheet, completing a first draft in line with the columns present on the information package |
| Jean Ben Booker | 10/3/2022 – 2pm | Created the star schema, completed draft with the same columns and column names present in the object worksheet |
| Jean Ben Booker | 10/3/2022 – 4pm | Continued working on the development plan, creating the business requirements and subsequently modifying the object worksheet and star schema |
| Jean Ben Booker | 10/3/2022 – 8pm | Created the visual studio solution to hold relevant documentation in preparation for peer evaluation |
| Will Kieley | 10/3/2022 – 9pm | Completed peer review evaluation form and discussed modifications over video conference |
| Jean Ben Booker | 10/4/2022 – 9am | Made modifications in line with peer review, created the executive summary for the development plan |
| Jean Ben Booker | 10/6/2022 – 8pm | Added time dimension to information package, made proper alterations in star schema and object worksheet |
| Jean Ben Booker | 10/6/2022 – 8:30pm | Created data mart build script and began constructing code, fixed errors noticed in other documentation |
| Jean Ben Booker | 10/6/2022 – 9:30pm | Loaded script in SMSS and successfully built the data mart, created diagram to ensure proper connections. |
| Jean Ben Booker | 10/11/2022 – 1pm | Made modifications in line with phase 1 review: naming and titles, data mart name |
| Will Kieley | 10/12/2022 – 10:30am | Completed peer review evaluation form |
| Jean Ben Booker | 10/12/2022 – 4pm | Made modifications in line with peer review: grammar and consistency |
| Jean Ben Booker | 10/12/2022 – 9:30am | Added comments to build script, added damage column to fact table and all appropriate documents, altered naming conventions to increase consistency |
| Jean Ben Booker | 10/21/2022 – 4pm | Developed scripts for ETL process, created and completed the package |
| Will Kieley | 10/23/2022 – 7:30pm | Completed peer review evaluation form |
| Jean Ben Booker | 10/23/2022 – 8pm | Made minor alterations to scripts and documents |
| Jean Ben Booker | 11/8/2022 – 1:30pm | Created power pivot for excel |
| Jean Ben Booker | 11/9/2022 – 2pm | Continued working in power pivot, changes to documentation OLTP and ETL |
| Joe Paulson | 11/10/2022 – 10am | Completed peer review evaluation form |
| Jean Ben Booker | 11/10/2022 – 10:30am | Made modifications to multidimensional analysis and documentation in line with peer review |
| Jean Ben Booker | 11/21/2022 – 12pm | Created PowerBI file, added data |

**Executive Summary**

The Cecil hotel chain is seeking a BI solution that will allow it to effectively achieve its analytic goals. Currently, the chain has a fully functional database system handling daily transactions at each of its locations. As this system has continued to retain records for an extended period, the speed of operation has significantly decreased. Reports take much longer to generate, and valuable time is lost waiting for the database to process all the available information.

To solve these issues, it is proposed that a data warehouse should be constructed. A data warehouse would provide a location for historical data to be transferred to, thereby reducing the strain on the day-to-day system. This would have the added benefit of ensuring the greatest efficiency for the operation of the current database, while dually providing the proper structure with which to analyze historical data and meet the hotel chain’s analytical goals. Reports generated based on these analytical goals would also experience an increase in efficiency, as the warehouse will be specifically tailored to the clients desired outcomes. As opposed to drawing insights from the large web of information necessary for daily operation, the data warehouse will be a consolidation of the data relevant to the desired analysis.

**Business Requirements**

* What was the average length of a customer’s stay based on the hotel rating, hotel city, room style tier, customer age, number of adults, broken down by year, quarter, and month?
  + This requirement could help inform the marketing team of certain demographics that have a tendency toward longer stays at a hotel. As well, a hotel can promote certain rooms with the same trend or even convert some rooms to the same style if possible. Last, a brand might reorganize its allocation of support to certain hotels based on the average length of stay.
* What was the average total cost of a customer’s stay based on customer age, discount type, room tier, hotel brand, and city over the last two months?
  + The average total cost of a customer’s stay is a comprehensive measure that has very similar implications to length of stay. The hotels could target groups that exhibit the highest spending as well as try to align customers with rooms that increase the likelihood of further spending. Hotels themselves can also be evaluated on the total spending of an average customer, as well as the brands to which the hotels belong. Although some of the services included in this metric may have a smaller margin of profit, it remains informative to use total cost as it includes all forms of generated revenue in a customer’s stay.

**Information Package  
Information Subject : Reservation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Hierarchies/Categories** | **Date** | **Time** | **Customer** | **Room** | **Hotel** |
| Year | Hour | Date of Birth | Facing Direction | Number of Rooms (bin) |
| Quarter | Minute | State | Accessibility | Rating |
| Month | Second | Zip Code | Number of Beds | City |
| Date | AM/PM | Payment Type | Style Tier | Year Built |
| Day of Week |  | Discount Type | Base Rate (bin) | Last Renovation |
| Day of Month |  | Discount Value (bin) | Max Occupancy (bin) | Brand Name |
| **Facts:**  Length of Stay\*, Total Charge\*\*, Number of Adults, Number of Children | | | | |

**Dimensions**

**\*** Length of Stay = (Check-Out Date – Check-In Date) + (Check-Out Time - Check-In Time)

\*\* Total Charge = (Check-Out Date – Check-In Date) (Day Rate) + (Food Charge + Late Charge + Pet Charge + Damage Charge)