A Quick Guide to Summaries in ME 2110

In a classroom project, a summary is simply a very short report. It should include these parts:

1) A **Goal** statement. This explains your project objective, and it can include pertinent background information.
2) A **Methods** statement (or an Action statement).This explains the plan or procedure that was used.
3) A **Results** statement. This explains what was created or developed (or other result, depending on the project). Results are presented by displaying and describing visual displays such as diagrams, CAD drawings, or planning tools, depending on the phase of the project. Visual displays should be cited in the summary's text, but they should not be presented in the body of the summary. Visual displays should be attached to the document on extra pages that you can designate as an appendix.
4) A **Conclusion** (or Recommendation). This should present a takeaway point explaining what pertinent lesson was learned as from the project results.

A Summary in ME 2110 should be limited to one page of written text. the text should be set in roughly 12 point type, and vertical space should be set to 1.5.

Figure displays can be attached on separate pages. Figures should be numbered, and the figure numbers should be cited in the text of the document. Figures should be large enough for readers to easily see. Figures should have labels to identify figure components that you mention in the text of your document. These labels should be set using the same font size as the rest of your document.

EXECUTIVE SUMMARY

INTRODUCTION

Kraemer's Nursery is a medium-sized ornamental nursery located in Mt. Angel, Oregon. It sells roughly 27 million plants per year to large retailers in the region. Kraemer's inventory management system, however, fails to meet key needs concerning both capability and cost. This design team was selected to develop a proof of concept for a new inventory tracking system, using automatic identification and data capture (AIDC) technology, to reduce overhead costs and to improve inventory control.

Goal / Concerns

Kraemer's now tracks inventory manually, using paper and pencil. This presents problems for the nursery due to lost records, illegible records and errors during manual entry into an electronic spreadsheet. Kraemer's inventory is large, and this manual system requires frequent and expensive audits to account for errors of up to 100,000 plants.

A new inventory system must allow users to specify the attributes to be tracked, it must allow plants to be tracked in groups, it must allow easy manipulation of data, and data must be accessible from both the field and from the office. Finally, the system must withstand the nursery environment and provide reliable performance.

Methods / Actions

To design the prototype system, many existing systems were evaluated. These include systems for wildlife tracking, border control, and airport baggage handling. Research also considered individual subfunctions: item identification, inventory management, and location tracking. The research indicates that Kraemer's should implement a barcode scanning system paired with a dynamic database.

A proof of concept system was created, using a scaled model of the nursery, a barcode scanner, a database, and computer code to allow the barcode scanning hardware to interact with the database. The database was created using Microsoft Access to store attributes of plant groups and track changes made to these attributes. Network hardware and a handheld barcode scanning device were used to connect the user to the database and enable data manipulation. Finally, a simple user interface was created to allow easy data manipulation as inventory is handled within the nursery.

Results

After the prototype system was constructed, it was tested to ensure that it satisfied all of the customer and engineering requirements. Testing was conducted by preapproved subject matter experts who certified that the system met each requirement. This testing was based on observation and used preapproved checklists to track how well requirements were met. Specific tests considered the system functionality, reliability, data accessibility, and scalability to meet the needs of a large nursery. The design passed all tests, fulfilled all requirements, and proved that this system would be an improvement over the current inventory tracking system used at Kraemer 's Nursery.

Recommendation or Conclusion

Full-scale implementation of this system would require capital investment for consulting personnel and equipment purchase. Consulting personnel would be required to create the full-scale database needed to track the large inventory quantities handled within the nursery. There would also be increased equipment requirements to track this inventory, including handheld barcode scanners, barcode printers, and laminating equipment to protect the barcode labels. The design team recommends that Kraemer's Nursery pursue full-scale implementation of this inventory tracking system to reduce expenditures on inventory management and to increase both the accuracy and quality of their inventory data.

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