11/3/2021

Food Ordering

System Baseline Project Plan

CIS 212 Project

Professor Jack N. Donato

Team Members: Justyce Countryman, Izabelle Liendecker, and Tatiana Njamen-Sayep

1.0 Introduction

A. System Overview - This system will allow restaurant servers to enter food orders and produce customer bills.

B. Recommendations - Permitting authorized workers to add, delete, and change food menu information within the system, including food item names and prices.

2.0 System Description

A. Possible Alternative Configurations/Solutions - In addition to the primary and recommended system functionalities, the program could also produce a weekly sales report, display tip percentages on the bill, ask for the desired size of applicable food items, and present descriptions of each food item.

B. System Capabilities - The system will consist of a program and a file containing the menu items and prices. The program will ask the user if they want to start an order or alter the menu. If the user chooses to start an order, the program will display the menu items and prices from the file. The program will then request the user to input a food item that is in the file. The program will then add this item and its price to the customer bill. The program will then give the option of adding another food item or not. Once the user finishes inputting food items, the program will calculate the subtotal, tax, and total. The program will then display the customer bill. Secondly, if the user chooses to alter the menu, the program will display the menu and ask the user if they want to add, remove, or change a food item and its information. If the user chooses to add a food item, the program will ask the user for the name and price of the new food item. The system will then append the food information to the menu file. If the user chooses to remove a food item, the program will request the name of the food item to delete. If the user decides to change an item, the program will ask for the name of the food item they want to modify. Once this information is received, the program will ask for the new food item name and price. Finally, the program can replace the initial food item details.

3.0 Feasibility Assessment

A. Economic Analysis - Assigning and paying a qualified programmer to design, code, and test the system costs around $1,000. This cost could also increase if additional system debugging, adjustments, and maintenance is needed to achieve stakeholder satisfaction. Moreover, there are training costs that could vary based on the number of employees who must use the system and their levels of technological expertise. One-time hardware costs could also be apparent since the system needs to be implemented into a specific environment to ensure stakeholders can benefit from the system. Cash registers are a primary example of mandatory hardware for this situation and cost approximately $1,200 each. In terms of financial benefits, this system should speed up the food ordering process and may increase the flow of customers by about 15%. As a result, revenue from food ordering sales could rise significantly. In addition, the system should also make customer food orders more accurate, which will help customers feel more content about coming back to the restaurant due to satisfaction and trustworthiness. The system could also reduce the number of employees needed, saving the restaurant from inessential labor costs in the process.

B. Technical Analysis - The system will involve a program that carries out several food ordering tasks. The difficulty of designing the system code to establish these procedures ranges from mildly to moderately complex. The system code is expected to be completed, tested, debugged, and finalized within ten days of beginning the project. The program should be able to run on most forms of computers. One primary technical risk for this project may include dealing with hardware that is not typically standard with the process of food ordering, which could cause the system to fail while attempting to perform mandatory food ordering objectives. Other noteworthy risks for this project could involve the system program taking longer than anticipated to create, the system being hard to navigate for many or all food ordering employee users, and the project becoming larger than initially expected due to the implementation of recommendations and system alternatives or solutions.

C. Operational Analysis - This program will make it easier and faster for servers to input orders and calculate bills accurately. Therefore, it would be unlikely to lose customers because of unexpected restaurant inconveniences. This system would increase the quality of service at the restaurant, which may provide approximately a 28% increase in revenue and a 15% increase in efficient business flow.

D. Legal and Contractual Analysis - Legal issues may be possible if there are conflicts in the food ordering system that causes one or more customers to pay more or less than what they were supposedly charged. In the development of the program, the hired programmer should not work more than the regular eight hours unless the programmer agrees to work overtime.

E. Political Analysis - Stakeholders should be in support of this program because it should cause an increase in revenue. Stronger accuracy and faster food ordering speeds will make customers likely to tip more and come back frequently. This system could also result in exceptional customer reviews and recommendations for the restaurant. The outcomes of this project would help employees and customers feel more content. However, stakeholders may criticize that the food ordering system may not cover any advanced food ordering methods, like automatically modifying, adding, or deleting food items based on specific restaurant circumstances rather than manual user input. This concern may arise if restaurants promote discounts regularly, remove food items that are rarely purchased by customers, or add a variety of new food selections to their menus.

F. Schedule, Timeline, and Resource Analysis - Delays towards the expected project completion time could be possible if the team members do not have the skills needed to create the system at or before the desired completion time. For instance, designing, testing, and debugging the system code may take longer than expected if the programmer either runs into errors or realizes the code is more complex than anticipated. Not only that, requesting meetings with the stakeholders may not always be planned out properly, especially if it takes more time than estimated to get dates and times for the meetings, they get rescheduled, or the project team needs more time to prepare. Every primary task in the project is likely, but not guaranteed, to be completed within the specified expected times as indicated in the preliminary project schedule. The estimated expected time to complete the project is 33 days.

4.0 Management Issues

A. Team Configuration and Management - All project team members will receive nearly identical amounts of project work. The team will also have the ability to review the progress of other members and provide essential feedback for project improvements. Finalization decisions for the system code, report, and adjustment ideas and designs will be a team effort.

B. Communication Plan - Most communication for the project will be done by video chatting through Zoom since project information is sharable and easy to discuss with all project team members while using this software. Sending and receiving emails would also be beneficial to keep all involved individuals updated on the project at any time, including team members and stakeholders. Due to personal circumstances, all project team members cannot meet in person, yet effective communication will still be a priority.

C. Project Standards and Procedures - When a team member completes a task or wants to make project changes, they will present their results, information, or advice to the other team members for approval and feedback. If all team members agree on a specific change or new system recommendation, the idea will go into the project. As a result, possibly changing procedures towards an appropriate project output will then need to be considered. On the contrary, if the idea does not receive team agreement, the thought will not immediately go into the project. Initially rejected concepts could be reconsidered or negotiated before project completion.

5.0 Examining Primary Tasks for Project Completion, Project Scope, and Data Flow

A. Work Breakdown Structure -

Step A: Analysis of all primary system requirements and essential steps

Step B: Produce system top-down design and algorithm

Step C: Create system code

Step D: Perform system testing and debugging

Step E: Perform system finalization with project team

Step F: Establish system report to present to target stakeholders

Step G: Review system report with project team

Step H: Request and hold stakeholder meeting for report presentation and system alpha testing

Step I: Make system adjustments based on meeting

Step J: Finalize system adjustments with project team

Step K: Update system report based on meeting and system adjustments

Step L: Review updated system report with project team

Step M: Request and hold second stakeholder meeting for updated report presentation and system beta testing

Step N: Make additional system and report adjustments based on second meeting

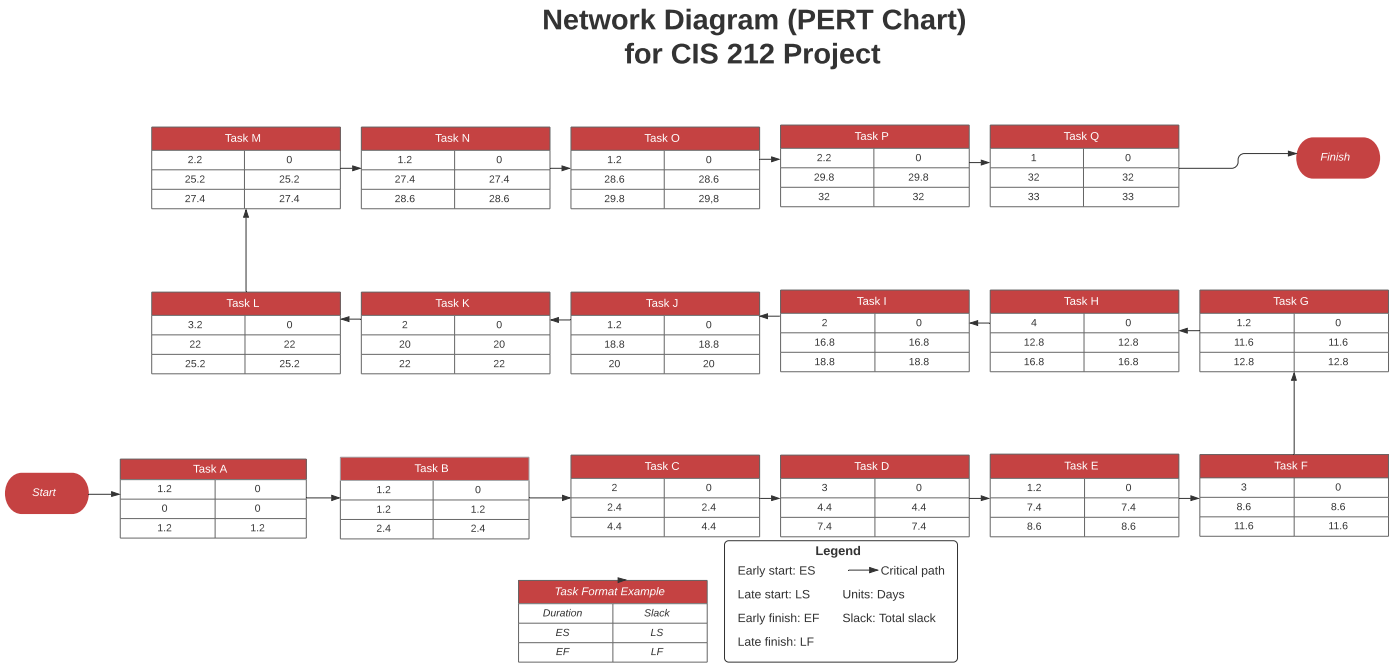
Step O: Finalize additional adjustments with project team

Step P: Verify with stakeholders that system meets all requirements

Step Q: Export system to satisfied stakeholders

B. Preliminary Schedule for Project -

Step	Prerequisite Steps	Optimistic Time	Realistic Time	Pessimistic Time	Expected Time
A	-	1 Day	1 Day	2 Days	1.2 Days
B	A	1 Day	1 Day	2 Days	1.2 Days
C	B	1 Day	2 Days	3 Days	2 Days
D	C	2 Days	3 Days	4 Days	3 Days
E	D	1 Day	1 Day	2 Days	1.2 Days
F	E	2 Days	3 Days	4 Days	3 Days
G	F	1 Day	1 Day	2 Days	1.2 Days
H	G	3 Days	4 Days	5 Days	4 Days
I	H	1 Day	2 Days	3 Days	2 Days
J	I	1 Day	1 Day	2 Days	1.2 Days
K	J	1 Day	2 Days	3 Days	2 Days
L	K	3 Days	3 Days	4 Days	3.2 Days
M	L	2 Days	2 Days	3 Days	2.2 Days
N	M	1 Day	1 Day	2 Days	1.2 Days
O	N	1 Day	1 Day	2 Days	1.2 Days
P	O	2 Days	2 Days	3 Days	2.2 Days
Q	P	1 Day	1 Day	1 Day	1 Day



C. Acceptance Test Plans -

I. Alpha Testing - Once the system code is completed, tested, debugged, and finalized, customers, employees, managers, and other potential stakeholders may try out the system at the alpha testing meeting to see if it performs all desired tasks properly without any errors or concerns. This form of testing will also allow these individuals to see the current potential of the developed system to determine if it could be beneficial enough for their food ordering services. Feedback from the testers will aid the project team with constructing system adjustments to satisfy as many stakeholder requests as possible with minimal system bugs.

II. Beta Testing - If alpha testers believe that they may benefit from the system, these system users may plan a second meeting for beta testing after the finalization of desired system adjustments requested in the first meeting. In beta testing, interested stakeholders may try out the system in the environments where they would utilize it for their business purposes. This testing method should verify if the traditional technological hardware that manages food ordering can apply the system capabilities from the code. Beta testing will also confirm if the system is reasonably simple to understand, especially within the new hardware. All system users should check for any remaining system errors that require

debugging before providing stakeholder approval for the project team to export the system.

D. Project Scope Statement -

Jefferson Community College Prepared by: Justyce Countryman

Project Scope Statement Date: November 3, 2021

General Project Information

Project Name: Food Ordering

Sponsor: Jack N. Donato, Professor of Computer Science

Project Manager: Justyce Countryman

Project/Opportunity Statement:

Food sales at restaurants, fast food establishments, and other forms of eatery continue to increase at rapid paces. Keeping track of food orders is continuously becoming more of an essential for successful service, customer gratitude, and greater profits.

Project Objectives:

To create a system that allows many food establishments to keep track of their menu items, prices, current customer orders, and bills. The project will help ensure accurate pricing to avoid losing a trustworthy relationship with the customers. The project will also include additional planning recommendations, like the ability for users of the system to add, delete, or modify menu items and prices to account for changing food availability and pricing circumstances.

Project Description:

The project team will plan and construct a food ordering system to allow users to achieve the primary tasks of inputting food orders that customers desire and establishing bills that indicate the costs of each food item within each order. The bill will include a subtotal, the total tax amount, or 8% of the subtotal for New York state, and the total cost.

Additionally, the non-functional requirements that the system may perform comprises of allowing employees to add, delete, or modify food information, keeping track of sales revenue and most purchased food items, producing a weekly sales report, asking the customer for a tip percentage, displaying the tip amount on the bill, requesting food item sizes if necessary, and giving a description for each food item on the menu. This system will follow the agile systems development life cycle.

Business Benefits:

Faster restaurant service

Growth in food ordering sales

Fewer inaccuracies with food item prices and customer bill totals

Improved customer satisfaction and trust

Enhanced probability for customers to come back at a regular basis

Larger revenues

Less employees needed for business stability

Smaller labor costs

Project Deliverables:

Thoughtful food ordering system analysis for any additional recommendations

System top-down design and algorithm procedures

Completed, tested, debugged, and finalized initial food ordering system code

Clear and concise food ordering system report

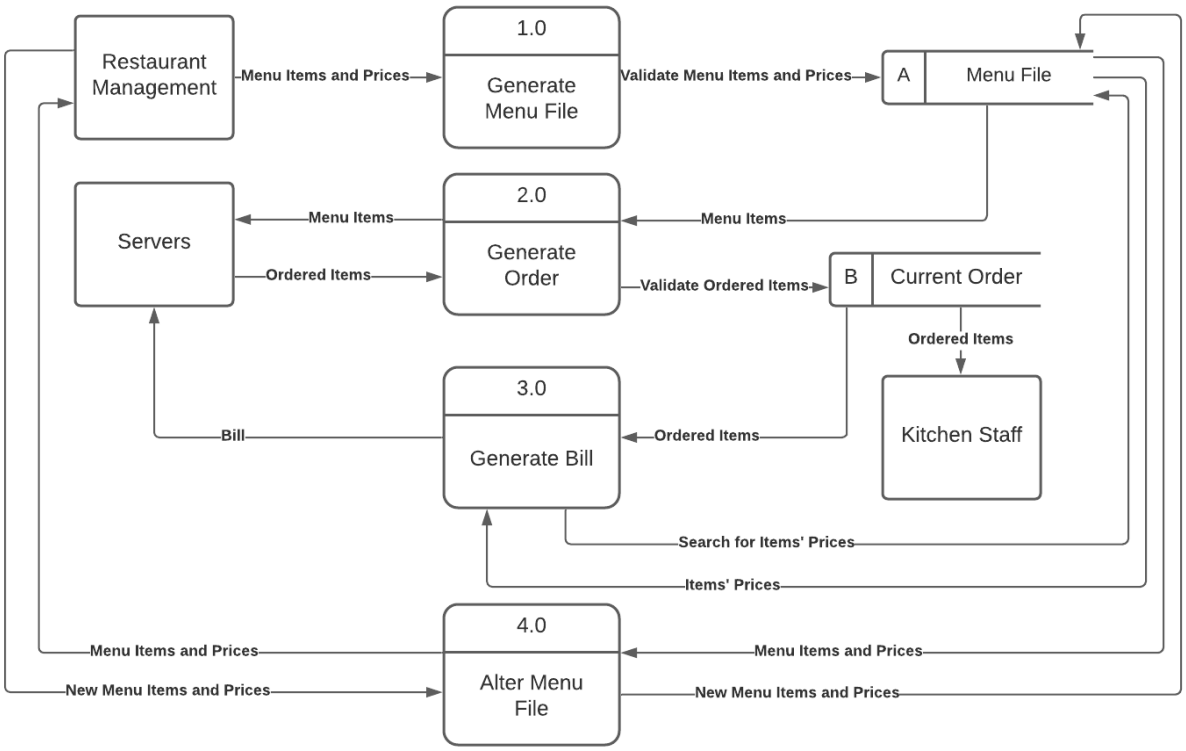
Team communication preparation for upcoming team and stakeholder meetings

Proper adjustments on system code and report based on alpha and beta testing meetings

Estimated Project Duration:

33 days

E. Level 0 Data Flow Diagram -


Restaurant Management
Menu Items and Prices
1.0
Generate Menu File
Validate Menu Items and Prices
A
Menu File
Servers
Menu Items
2.0
Generate Order
Menu Items
Ordered Items
Validate Ordered Items
B
Current Order
Ordered Items
Kitchen Staff
3.0
Generate Bill
Bill
Ordered Items
Search for Items' Prices
Items' Prices
4.0
Alter Menu File
Menu Items and Prices
Menu Items and Prices
New Menu Items and Prices
New Menu Items and Prices