Software Project Management

Lab 3

Student Name	Student ID
Hemshikha Sultoo	100670616
Ireni Ruthirakuhan	100657302
Shanjay Kailayanathan	100624670

Objective
This lab intends onto improving our skills in developing more detailed documentation about the project. It allows us to apply our knowledge on Project Estimation, Activity Planning and Risk Management.

Background
The iPad Restaurant Application will allow customers to place orders on an iPad from their table after viewing a menu consisting of item descriptions, prices, pictures, and promo videos. It'll incorporate AI to upsell items when possible and can also be used to call the waiter/waitress when needed. All menu items and orders placed will be linked to a database consisting of food inventory to ensure foods that aren't available don't get displayed to the customer and do decrement inventory after orders are placed. The database will also consist of accounting & financial information to track income & expenses.

Estimated Effort using the COCOMO Model
The iPad Restaurant Application is considered as a Semi-Detached Project. The team-size is not too big, team members are experienced and have sufficient knowledge on the project.

The Intermediate COCOMO Model is used to provide an estimated effort. Constants **a** and **b** for this model are obtained from the following table:

Software Project	a	b	c	d
Semi-detached	3.0	1.12	2.5	0.35

The estimated LOC = 16k = 16,000

$$E = (a(KLOC)^b)$$
$$E = 3 * (16)^{1.12} = 66.947656 = 67\ person-months$$

$$D = (a(E)^b)$$
$$D = 2.5 * (67)^{0.35} = 66.947656 = 10\ months$$

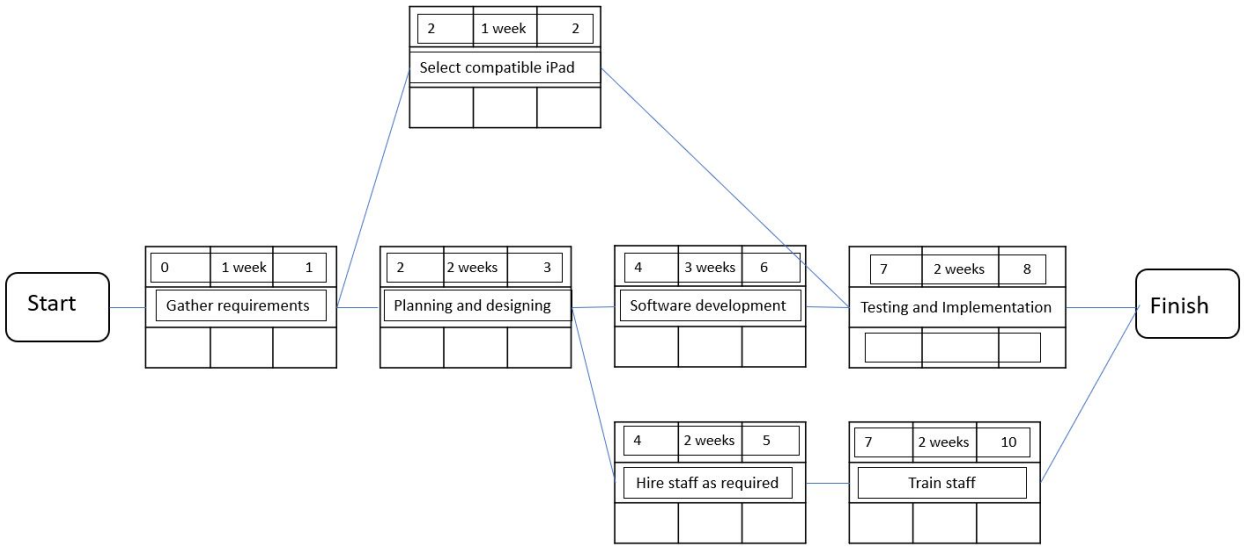
Therefore, it takes 67 person-months and 10 months.

Estimated method using Albrecht/IFPUG Function Points

1) Logical Interface File (LIF) - A file of order/transaction details for each customer: Medium
2) External Interface File (EIF) - An accounting information file managed by a separate system is accessed for transaction & billing details: Low
3) External Input Types (EI) - A transaction to allow modification to restaurant menu items, costs & inventory: High
4) External Output Types (EO) - A transaction that prints out order details to the kitchen staff and receipts for the customers: Medium
5) External Inquiry Types (EQ) - iPad ordering system that the user can place their orders on or call the wait staff: Medium

Function Point Counts	
1. Medium LIF	4 FPs
2. Low EIF	5 FPs
3. High EI	6 FPs
4. Medium EO	5 FPs
5. Medium EQ	4 FPs
Total:	**24 FPs**

Activity Network Diagram



Risk Assessment

1) The project might go over the estimated budget. Therefore, when evaluating the estimate, the team will make sure to allow for some additional expenses.
2) If some team members turn out to be unproductive and inefficient, the manager will be held responsible to remove them from the project and assign their roles to senior developers with more experience.
3) If the project is not completed by the deadline specified on the contract, a mutual variation to the contract should be made to request an extension.
4) If the iPads do not work as effectively as expected, the team will have to look for other similar devices and technologies to complete the implementation phase.
5) If any undesirable outcomes result from unclear requirement statements on behalf of the users, they will be liable to allocate the team extra time and financial support to develop the product.
6) A crash in the server may result in orders not being able to process so orders must be able to be placed in-store even without internet connectivity.
7) If the order of iPads is delayed, our team will not be liable to any sort of litigation and will be given extra time for installation.