

Department of Accounting and Business Information Systems
University of Melbourne

Systems Design & Development

Group Project Report

SUBJECT NAME: 306-620 Systems Design and Development

DUE DATE: Monday 23rd May, 2005

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EXECUTIVE SUMMARY

Jean Jacques Pty Ltd. is a company that is aiming to expand its operation of childcare centres geographically to Adelaide, South Australia and is seeking a system that will enable a more efficient and effective method of operating its business by having data to be centralised. In addition, the system they seek is to have several new functions which enhance their services for customers such as having programs tailored made and information accessible.

To design a system for Jean Jacques Pty Ltd. we first examined its business operations and found that there are three main functions in the business that needs to be taken into consideration. These are child related functions, financial functions and human resources functions. Based on a scenario with these functions and on Jean Jacques Pty Ltd's strategy which is to provide "parent friendly childcare centre", we performed a system analysis and design, and developed the Mock screens for the new system and made the implementation, maintenance and risk management plan.

This report recommends that Jean Jacques Pty Ltd. should implement a new ERP system rather than extending its current existing system. This new system should be implemented by outsourcing it rather than building it in-house. The specifications for the new system are outlined in detail in this report.

1 INTRODUCTION

Jean Jacques Pty Ltd. owns and operates 50 childcare centres in Victoria. Recently, its focus is to expand its business by opening another childcare centre in Adelaide, South Australia. Jean Jacques Pty Ltd's management has decided that the new centre should focus as a "parent friendly childcare centre." That is, this new centre is to provide a wide variety of personal services and special programs for members, and should it succeed, it will become the model for other centres. They have hired an IT consulting firm—Brookes & Braithwaite to help develop an information system for the new facility.

2 BUSINESS CASE DOCUMENT

2.1 STATEMENT OF SCOPE

2.1.1 Project Objectives

In order to create a wide variety of services in the childcare centres and to integrate all the childcare centres, Jean Jacques Pty Ltd. needs a new information system. This new information system will maximize the operational process occurring on a daily bases and give the company a competitive advantage in the future. To ensure this, the requirements of the company need to be realised with a new system.

2.1.2 Project Description

A new information system will be constructed for the new childcare centre. It will provide several new features such as online services, record for dropped off and picked up children, analytical features for managers and email service to communicate with customers, etc. As the management expects that the system will be implemented across all branches, it is imperative that the new system should have data integration capabilities.

2.1.3 Business Benefits

The new system implemented will give Jean Jacques Pty Ltd. several benefits as follows:

- The ERP system will improve operational efficiency and enable Jean Jacques Pty Ltd. to have capabilities to analyse the data gathered in the new system.
- The web based service will give Jean Jacques Pty Ltd. customers' the capabilities to access information in regard to the activities of their children in the childcare centre.
- The email service which the new system provides will widen the range of communication facilities so that customers will have more avenues in which to communicate with the childcare centre.
- The new services such as tailored fitness and education program will improve the range of services. This will become the advantage for Jean Jacques Pty Ltd. since these services are unique and different compared to other existing competitors.
- Integration of the system will enable the headquarter office to have more control over all branches' operational data.
- In the long run, Jean Jacques Pty Ltd. will have more economic benefits since their processes become more efficient.

2.1.4 Inclusion, Exclusion and Assumptions

2.1.4.1. Inclusion

- The system created only includes the services for childcare activities mentioned in the system description such as drop off-pick up activities, kid shop activities, tailored fitness program, and education class program.
- The financial activities covered in the new system only covers the financial activities related to childcare activities mentioned above.
- The new system includes some aspects of the human resource activities which is the record of employee working times.

2.1.4.2. Exclusion

- We only provide guidance for the implementation, maintenance, and training phase.
- The new system does not include the inventory system related to the whole childcare centres. It only includes the inventory system for the kids shop activities.

2.1.4.3. Assumptions:

- The new system only provides the services mentioned in the system description. More personalized services not included in the system description is not discussed in this report.
- Jean Jacques Pty Ltd. will use a new membership policy which is based on the children's details rather than that of parents. In this case, each parent might have more than one membership if they have more than one child registered as a member.

2.2 SYSTEM DESCRIPTION

2.2.1 Alternatives and Feasibility Assessment

There are two critical issues that need to be considered when choosing the most suitable system for Jean Jacques Pty Ltd.

1. Create new system vs Extend old system

As seen from the project description, Jean Jacques Pty Ltd. requires a system which can support data integration of all centres. It is clear that the old system using Quickbooks software will not be able to handle this requirement as the software does not have capabilities of collaborating data from each centre. Therefore, Jean Jacques Pty Ltd. should replace its old system with the new one that supports the data integration capabilities.

2. Build the system in-house vs Outsource

Jean Jacques Pty Ltd's current IT experience and resource does not provide the skills necessary for building the new system in-house. Therefore, Jean Jacques Pty Ltd. should outsource the resources for the project. However, Jean Jacques Pty Ltd. should have a few considerations in order to make the outsourcing successful. The analysis of this part will be discussed in the implementation plan (Section 5) and risk analysis (Section 6).

Based on these, we conclude that Jean Jacques Pty Ltd. should create a new system by outsourcing the IT resources (software, skills and people).

2.2.2 System Description of Recommended Solution

The recommended system should meet these requirements:

1. The recommended system must align with Jean Jacques Pty Ltd's strategy which is "providing parent friendly childcare centres"
2. The recommended system must be able to handle the new features that are offered in the Adelaide childcare centre.
 - Manage drop off/pick up activities
 - Manage tailored fitness programs
 - Online access to details related to child progress and well being
3. The recommended system must provide tools for managers
 - Analytical features for "what-if" scenarios
 - More frequent business analysis including trend analysis, profit and loss analysis
 - Manage employees' information
 - Produce better information for late payers and inactive customers
4. The recommended system must provide convenient environment to its customers, especially parents
 - Provide 24/7 online access
 - Provide detailed information regarding their kids' details and progress
 - E-mail communication with Jean Jacques
5. The recommended system must have scalability to handle all branches in the future.

2.3 BASELINE PROJECT PLAN

2.3.1 Work Breakdown Structure

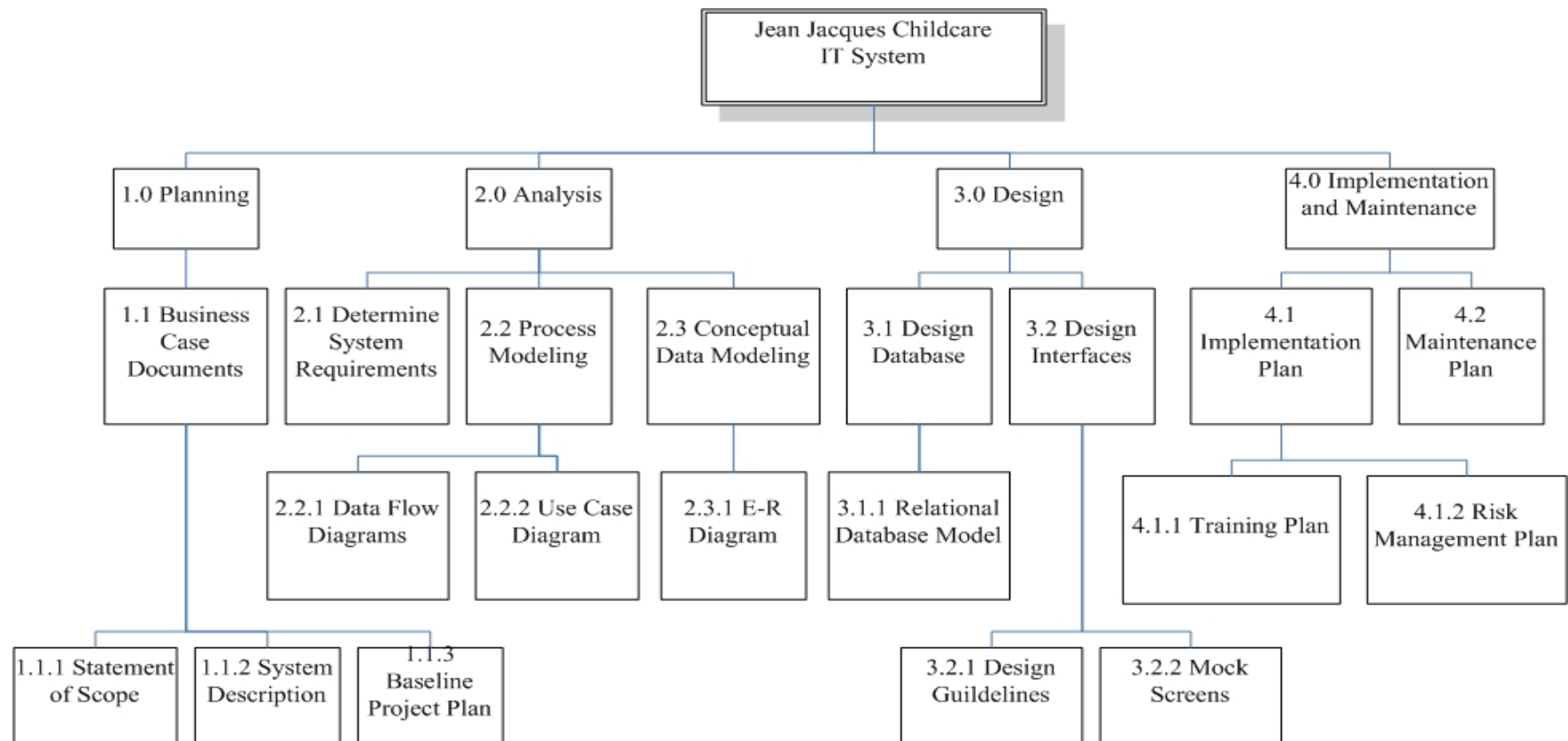


Figure 1 Jean Jacques’ System Development Work Breakdown Structure

2.3.2 Gantt Chart

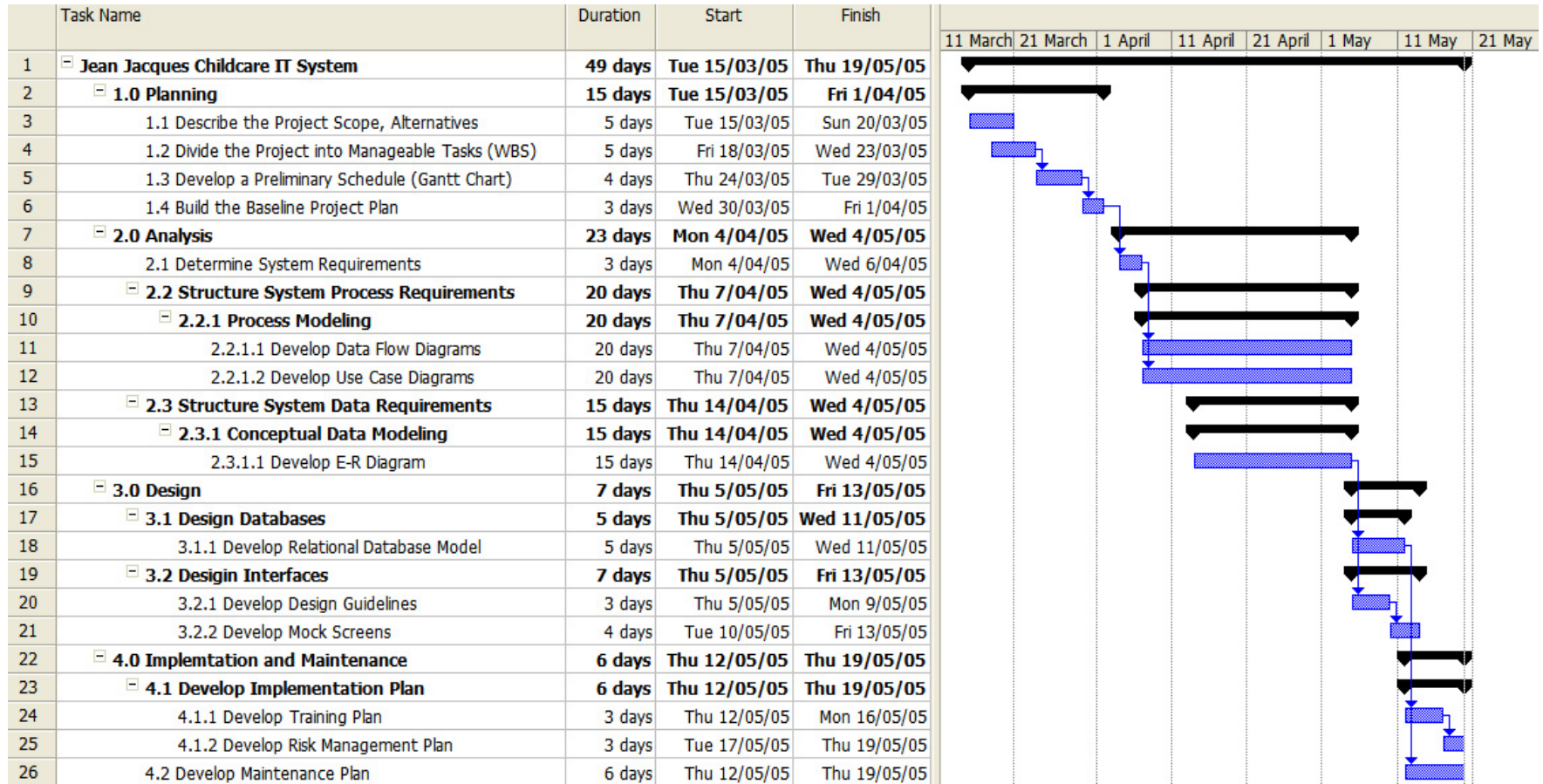


Figure 2 Jean Jacques' System Development Gantt Chart

3 SYSTEMS ANALYSIS AND DESIGN DOCUMENT

3.1 BUSINESS NARRATIVE

Jean Jacques Pty Ltd's new system is generally divided into three main functions which are:

- Child related functions
- Financial related functions
- Human Resource functions

3.1.1 Child Related Functions

Jean Jacques Pty Ltd. only provides services for registered members. Therefore, for customers to access any of the services, they have to register as a member first.

1 Registration

- Applicant (parent) gives 100 point of identification details, \$50 registration fee, child's details and chooses a type of membership.
- Receptionist inputs data and it is saved to member master data
- Financial staff processes the payment, and prints a membership card and an invoice
- Financial staff gives the invoice and membership card to applicant

2 Drop off

- Drop off person gives his/her name, the child's name, and the name of the authorized person who will pick up the child.
- Receptionist inputs data to pick up log database, prints slip and gives it to the drop off person.

3 Pick up

- Pick up person gives the child's name and parent's name, and shows an ID card to receptionist.
- Receptionist matches the name shown in the ID card to the recorded authorized person's name
- If it matches then the pick up person is permitted to take the child away.
- Receptionist updates pick up log database.
- Financial staff processes the payment, prints an invoice and gives it to the pick up person.

4 Retail

- Customer picks products from display and shows it financial staff (cashier).
- Financial staff (cashier) searches it in the inventory.
- Financial staff (cashier) scans the barcode and updates the inventory database.
- Financial staff processes the payment, prints an invoice and gives it to the customer

5 Tailored fitness

- Fitness instructor assigns available fitness program and updates fitness database.
- Parents evaluates the available fitness program.
- Parents gives child's name and the preferred program.
- Since fitness program is a regular activity, the payment will go straight to monthly payment.
- Receptionist updates the fitness database and sales database and the system updates monthly statement database.
- Financial staff (cashier) prints an invoice and gives it to the parent.

6 Education class

- Parents give child's name.
- Receptionist places the child in the suitable class based on age.
- Since education class is a regular activity, the payment will go straight to monthly payment.
- Receptionist updates the class database and sales database and system updates monthly statement database.
- Financial staff (cashier) prints an invoice and gives it to the parent.

7 Child progress and wellbeing

- Fitness instructor and education teacher update the child's progress database.
- Parents view the update through website.

8 Children pick up and drop off analysis

- Report is prepared once a month.
- The system retrieves drop off and pick up data from its logs and generates the report.
- For analysis purposes, managers may access this report anytime.

9 Programs analysis

- Managers may now analysis trend for tailored fitness program or education class program.
- Report is prepared once a month.
- The system retrieves program data from program and attendance database and generates the report.
- For analysis purposes, managers may access this report anytime.

3.1.2 Financial Related Functions

1 Payment

- If customer pays with cash,
 - Financial staff (cashier) puts the cash in cash register
 - The sales database is updated automatically
- If customer pays with credit card
 - Financial staff (cashier) validates the credit card
 - if validated, the sales database is updated automatically
- If customer is a member's parent, he/she can choose to put the transaction on member's credit account
 - Financial staff (cashier) validates the name given
 - if validated, sales database and monthly statement database are updated automatically

2 Monthly payment

- If customer pays with cash,
 - Financial staff (cashier) puts the cash in cash register
 - The monthly statement database is updated automatically
- If customer pays with credit card
 - Financial staff validates the credit card
 - if validated, monthly statement database is updated automatically

- 3 Prepare monthly statement
 - The system consolidates transactions in monthly statement database for each account and the customer can receive the monthly statement from the website or e-mail sent by Jean Jacques Pty Ltd.

- 4 Prepare late payer and exception report
 - Every month the system will consolidate the monthly statement and check the number of outstanding account.
 - Based on this information, the late payer report will be generated by the system for the manager.

- 5 Prepare sales report or profit
 - Financial report is prepared once a month.
 - The system retrieves sales data from sales database and generates the financial report.
 - For analysis purposes, managers may access this report anytime.

3.1.3 Human Resources Functions

- Headquarter human resource (HR) staff enters the employee data (i.e. name, address, id no., level) to the employee master database
- Employees need to swipe the ID card when they enter/exit the office and the data of time worked is automatically updated to the absence log database.
- HR manager prepares the employee's performance report according to the data stored in the absence log database.
- At the end of each month, the system will prepare the payroll from the information stored in the absence log data and employee master database.
- After the payroll generation, the system will update the account payable database and the payroll transfer cheque is sent to bank
- Employee will get pay check and payroll slip.

3.2 EXTERNAL ENTITIES' DEFINITION

The new system will consist of several entities. The entities requiring consideration for this system are as follows:

- **Drop Off Person**
Drop off person is every person who is responsible for delivering the child(ren) to the childcare centre.
- **Pick Up Person**
Pick up person is every person who is responsible for picking up the child(ren) from the childcare centre.
- **Education Instructor**
Education instructor is a person who is responsible for delivering the education program in the childcare centre, managing the education program, and monitoring the children's progresses.
- **Fitness Instructor**
Fitness instructor is a person who is responsible for delivering the fitness program in the childcare centre, managing the fitness program, and monitoring children's progress.
- **Branch Manager**
Branch manager is a person who is responsible for every activity happening in the childcare centre. He/she has the authority to make decisions regarding every activity.
- **Employee**
Employee is a person who is working in the childcare centre. Employee relates to financial staff, receptionist, etc.
- **Headquarter Human Resources Staff**
Headquarter Human Resources staff is a person who is responsible for inputting all the data about the employees in all branches.
- **Bank**
Bank is a place to deposit money for every daily transaction.
- **Late Payer**
Late payer is a parent(s) who still have outstanding balance in the childcare centre after the period of monthly statement payment ends.
- **Retail Customer**
Retail customer is every person who buys anything from the shop in the childcare

centre. It can be a member or a non-member.

- **Applicant**

Applicant is a parent(s) who want their children to become members of the childcare centre.

- **Parents**

Parents are people who already registered to childcare centre and who are responsible for every activity related to their children.

3.3 DATA FLOW DIAGRAMS (DFDs)

3.3.1 A Context Diagram

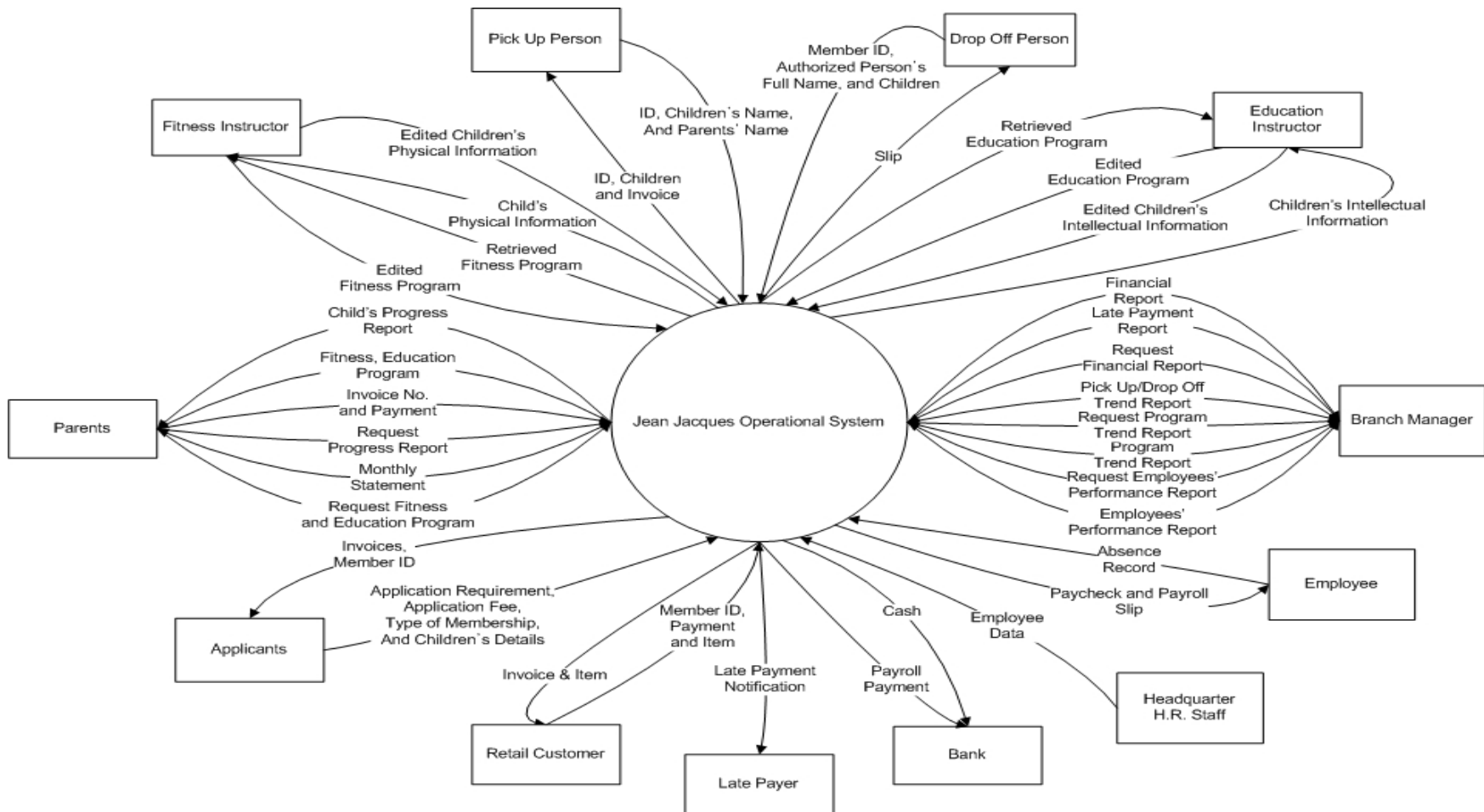


Figure 3 A Context Diagram

3.3.2 A Level 0 Logical DFD

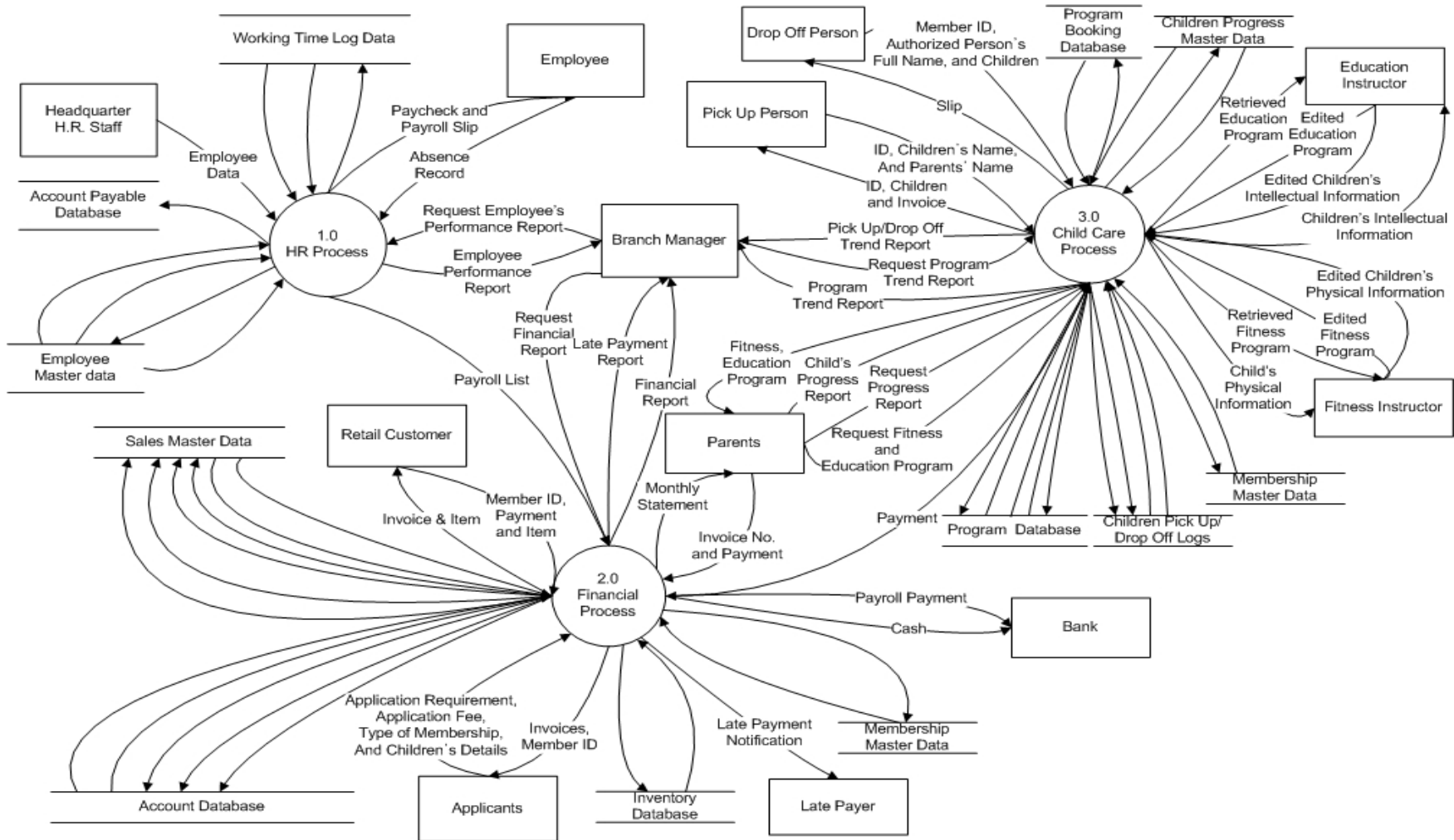


Figure 4 A Level 0 Logical DFD

3.4 A USE CASE DIAGRAM

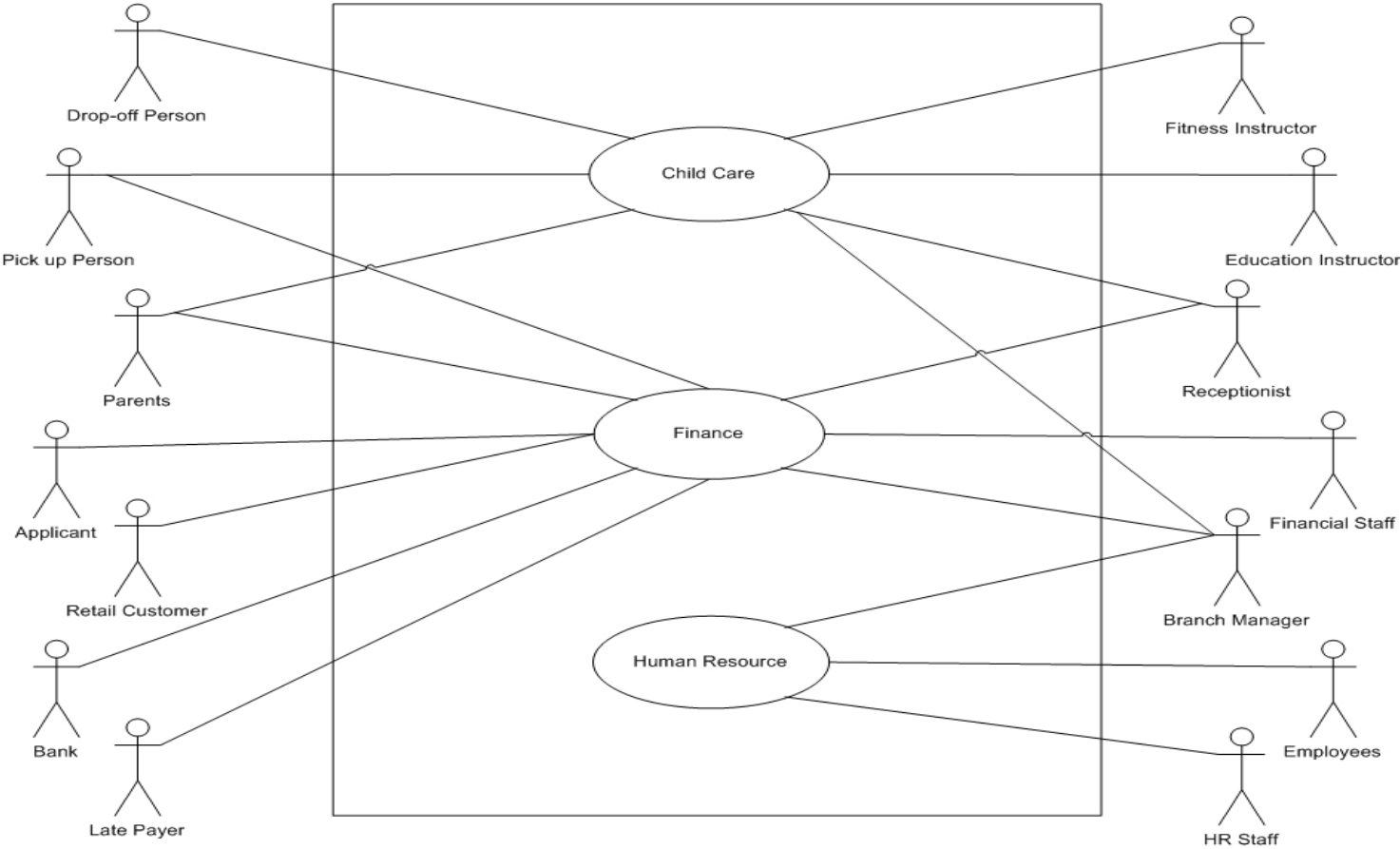


Figure 5 A Use Case Diagram

3.5 AN ENTITY RELATIONSHIP DIAGRAM (ERD)

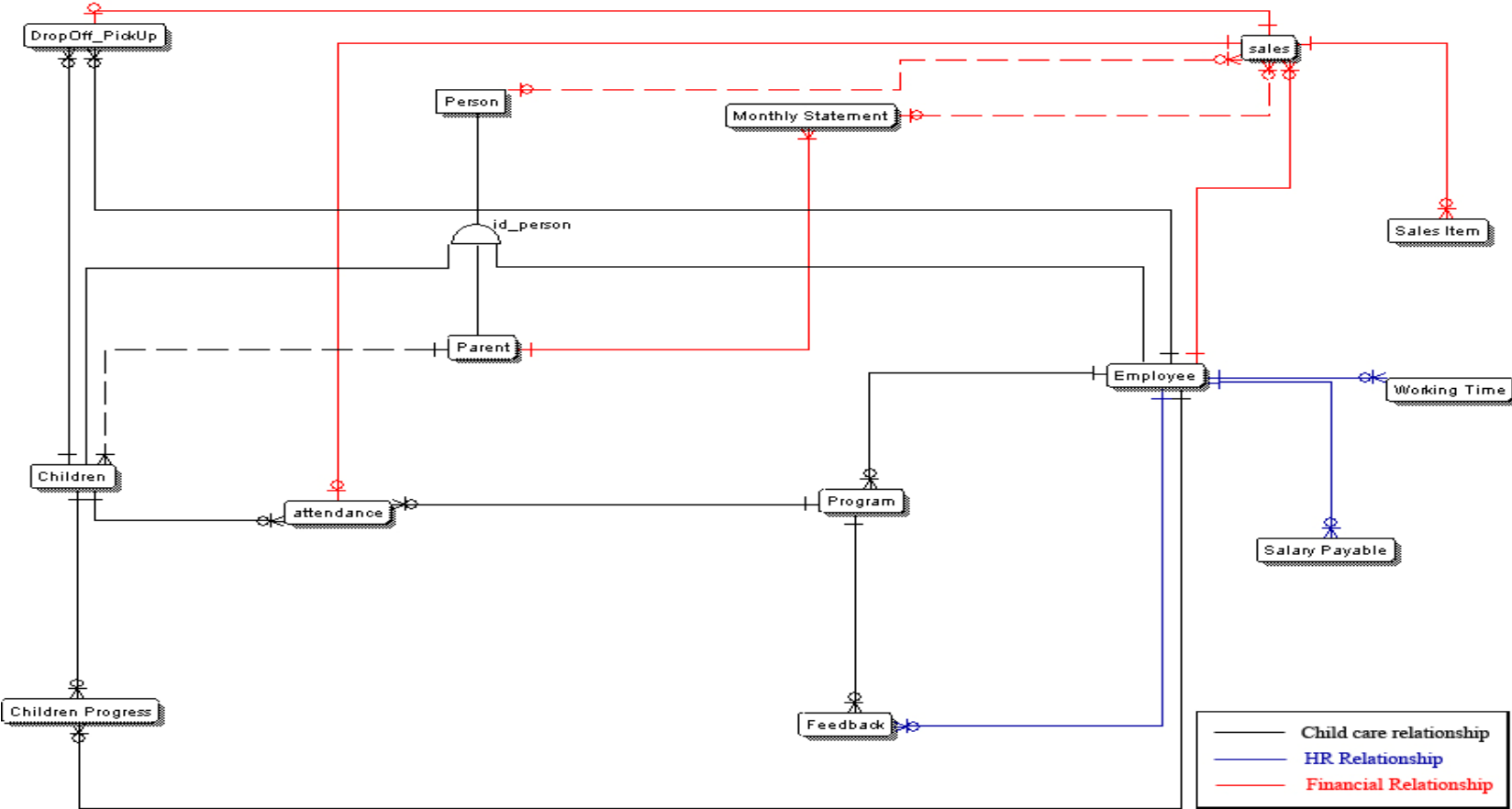


Figure 6 An Entity Relationship Diagram

This ER Diagram (Figure 6) shows the database design for the childcare, financial and HR functions. Foundation of the database is entity 'person' and its subcategory. Black coloured relationships signify childcare data relations. Red coloured relationships signify financial data relations. Blue coloured relationships signify HR data relations.

Entity 'person' is subcategorized as entity 'children', entity 'parent', and entity 'employee'. It is an overlapped subcategory, as 'employee' can be a potential customer as a 'parent' as well. 'Parent' has one to many relationships with 'children'. This is meant to be an identifying relationship, as 'children' is the entity dependent on 'parent'. However, since ER rule forbids a subcategory relationship to overlap with identifying relationship, only non-identifying relationship between 'parent' and 'children' can be designed.

Assumption and integrity constraints

The membership is based on each child not parents. Other assumptions and integrities are explained below.

- **Actors**

Entity	Description
Person	This entity records basic information regarding people. This is the supertype for people database.
Parent	This entity records information of parents. This is one of the subtypes of people database.
Child	This entity records information of children. This is dependent entity of 'parent'.
Employee	This entity records information of employee.

- **Childcare relationship**

Entity	Description
DropOff_PickUp	'DropOff_PickUp' records all drop off and pick up activities. It also relates to 'Sales' so that the system may have 'drill down' capabilities from sales to analyse drop off / pick up activities. Employees manage the drop off / pick up activities records.
Children_Progress	'Children_Progress' record all progress of each child. It also relates

	to employee so that the system may collect the information on who is inputting the progress information
Programs	'Programs' records all program information. This includes fitness and education programs. It contains the information of 'Attendance' so that system shows how many children attend the program and who they are. It also relates to 'Feedback' so that any feedback for programs can be recorded. Relation to 'Employee' is also needed because each program must be managed by an employee.
Attendance	'Attendance' records tailored fitness programs and education programs that are attended by children. It also relates to 'Sales' for sales records.
Feedback	'Feedback' records all feedback for programs and from employees.

- **Financial relationship**

Entity	Description
Sales	'Sales' records all sales activities. It may record sales of drop off / pick up activities, the program activities and the retail sales activities. Therefore 'Sales' may relate to 'DropOff_PickUp', 'Attendance' and Sales_Item. Sales relation to person signifies that this person is the buyer of the sales. Assumption is each sale may only be recorded as one transaction. Therefore, if one customer pays for retail sales and pick up sales, it has to be recorded as different sales.
Monthly_statement	Monthly statement group sales are recorded monthly and per person. Therefore, it relates to 'Parent' as well.
Sales_Item	'Sales_Item' is dependent (weak) entity of 'Sales'. It is used to record any retail sales.

- **HR Relationship**

HR entities in this design are fairly straightforward and no important constraints need to be identified.

3.6 A RELATIONAL DATABASE MODEL

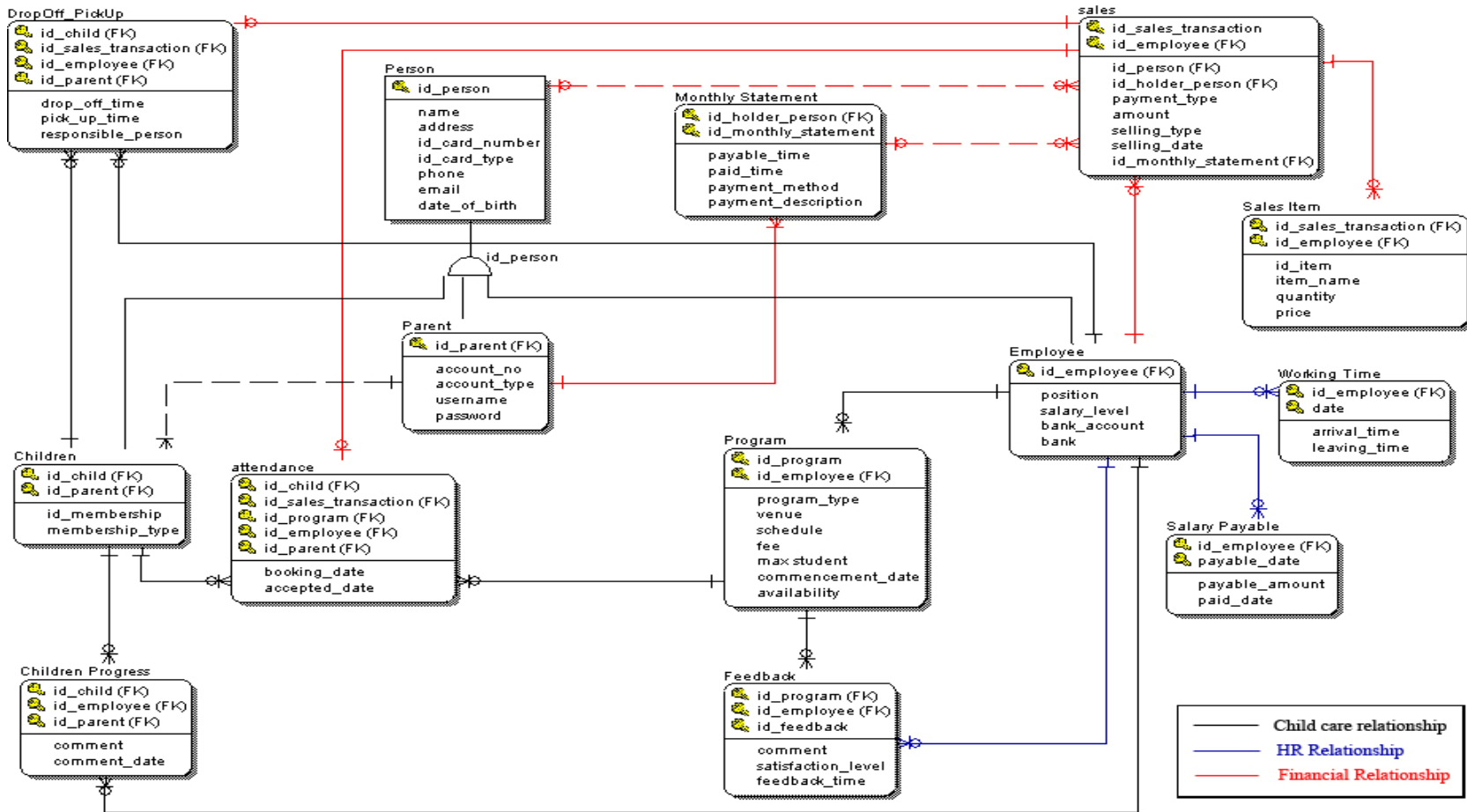


Figure 7 A Relational Database Model

Relational table (Figure 7) is configured using 3NF. Any attributes within each table must have the ability to stand on its own and not be dependent to other attributes. By focusing to this issue, this relational table can be ensured to satisfy the conditions of 3NF.

Attribute description

All the attributes in the design are fairly straightforward. The only issue to be considered is foreign key renaming. Due to conflict possibilities from similarity of the foreign key name, it has been decided to rename the foreign key so that it is not in conflict with each other. For example, in 'Children_Progress' table, if the foreign key of 'Children' is named as 'id_person' and it is also used as the foreign key of 'Employee', the attribute will conflict with each other.

Therefore, it has been decided to change the foreign key name in 'Children', 'Parent' and 'Employee' as follows: 'id_person' in 'Children' to 'id_child'. 'id_person' in 'Parent' to 'id_parent' and 'id_person' in 'Employee' to 'id_employee'. This way, 'id_person' in its subcategory does not conflict with each other.

Another renaming is in 'Monthly_statement'. Foreign key 'id_parent' is renamed to be 'id_holder_person'. Therefore, the key name is more meaningful. Due to this change, table 'Sales' now may differentiate the actors in sales activity. 'id_person' is the actor who creates the transaction, 'id_employee' is the actor who is responsible in Jean Jacques Pty Ltd. 'id_holder_person' is the actor who pays for the transactions.

4 MOCK SCREENS FOR THE NEW SYSTEM

4.1 DESIGN GUIDELINES

4.1.1 Main Menu Design Guidelines

Completed main menu interface design is shown in Section 4.2. The main menu design interface consists of four sections as follows:

1. Main section to provide beginners' guideline to the system.
2. Top section for nested menu and displaying menu navigation and user's name.
3. Left section for shortcuts menu.
4. Bottom section displaying added information.

1. Main section

Main section in the menu design is shown below;



Figure 8 Main section as beginner's guideline

The purpose of the main section's design is to guide beginners in understanding the system's flow. There are big buttons with eye catching icons and detailed and meaningful description to capture users' interest and then guide them in navigating through the system.

2. Top section

When users become more familiar with the system, they will realize that navigating with upper menu (Figure 9) will be faster compared to using the big buttons in the main body. With nested menu design, all the options are sorted and provide easier navigation. Top section also displays user's name, so that they know who is currently logged in. It also provides the location where the user is currently located.



Figure 9 Top section

3. Left section

Left section is dedicated to shortcut menu (Figure 10). The left section will always remain the same, showing only the most useful functions. Therefore, users will always be one click away from those functions. This is convenient for users. For example, parent's left section interface will always provide a link to their children's details and account details.

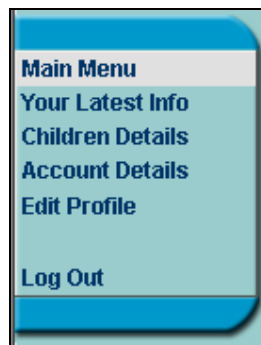


Figure 10 Left Section

4. Bottom section

Bottom section (Figure 11) provides additional information when it is required. By putting added information at the bottom, it is not mixed with the upper section which provides the main information. When users are interested in reading more information, they can always scroll down to view it.



Figure 11 Bottom section

4.1.2 Data Entry Design Guidelines

To ensure users that they are keying in the correct data, there are five features implemented in the data entry interface:

1. Putting related fields under the same category
For example, 'date of birth' and 'nationality' are put in 'personal information' category. Therefore, it will reduce ambiguity during key in activities.
2. Putting dependent fields in an orderly fashion
For example, 'id card type' is put under 'id card number' because both of them are dependent.
3. Putting examples underneath ambiguous fields
For example, 'phone' number can be written in many ways. By putting examples under the field, users can interpret the rule when inputting their 'phone' number.
4. Use dropdown format for limited answers
For example, 'date' format is limited and fixed. By using dropdown format, the input accuracy will be increased.
5. Added information is displayed in the right section of the form so that the user can understand better about the field's purposes.

Completed data entry interface design is shown in Section 4.3. The data entry design interface consists of four sections:

1. Form's Title
2. Categorized fields
3. Right section for added information regarding the fields
4. Navigation tool at bottom

1 Form's Title

This section (Figure 12) is crucial as users need to know what kind of form that they need to fill in. Inserting wrong data into the system cause inaccurate data analysis. This section also shows which step they are taking in the process. In this ways, users can know when the process ends and the status of their process.



Member Registration Form
Parent Detail (1 / 4)

Figure 12 Form's title

2 Categorized fields

Categorizing fields (Figure 13) helps to reduce ambiguity for users when they put in data.



Date of Birth *	dd mm yyyy	Personal Information Customer identification when needed
Nationality *	Australia	
ID Card Number *		
ID Card Type *	Driving License	

Figure 13 Related fields are put under same category

3 Right section

Right section of the fields (Figure 13) describes the meanings of the fields. This way, users can understand better what information and why they should put it into the system.

4 Navigation tool

Navigation tool (Figure 14) should also be designed to reduce error risk. By putting 'cancel' button away from 'navigation' buttons reduces the incidence for users to accidentally click 'cancel' button. Changing 'next' button with 'submit' button after the input process is finished is more convenient for users.



Registration procedure:

1. Parent Detail *
2. Children Detail
3. Payment Detail
4. Online User Detail

Prev Next (1 / 4) Cancel

Figure 14 Navigation tools

4.2 A MAIN MENU SCREEN



Figure 15 A Main Menu Screen

4.3 A DATA ENTRY SCREEN

Jean Jacques Child Care Centre		"Friendly environment to kids and parents"				
		Home	Centres	Members	News	About Us
Welcome, Ms. Parker		>> Main Menu : Members : Registration				
Member Registration Form						
Parent Detail (1 / 4)						
Name *				Customer Name		
Phone *		-		Communication Communication means to contact customer		
		ex: 03 - 98872228				
Email						
		ex: yourname@yourdomain.com				
Street Address *						
City *		Melbourne				
State *		Victoria				
Postcode *						
Date of Birth *		dd mm yyyy		Personal Information		
Nationality *		Australia		Customer identification when needed		
ID Card Number *						
ID Card Type *		Driving License				
Number of Children * to be Registered		1		Children to Register		
				Only number of children that would like to be registered to the center		
* means mandatory						
Registration procedure:						
1. Parent Detail *						
2. Children Detail						
3. Payment Detail						
4. Online User Detail						
		Prev		Next (1 / 4)		
				Cancel		
Jean Jacques Pty Ltd, 24 King Street, Adelaide, Australia 2500. Contact us at: jeanjacques@jj.com.au						

Figure 16 A Data Entry Screen

5 IMPLEMENTATION AND MAINTENANCE PLAN

5.1 IMPLEMENTATION PLAN

The implementation of the system in Jean Jacques Pty Ltd. requires six processes to be carried to ensure its success. The first four processes are listed below in detail. The training and supporting activities in the implementation process are described in detail in section 5.2 and 5.3

1 Coding

The coding of the system is recommended to be outsourced since Jean Jacques Pty Ltd. currently does not have the resources in expertise IT skills and knowledge required for coding. However, the staff at Jean Jacques' is recommended to be involved in the coding process so they can oversee and ensure that the coding fulfil the requirements of the new system.

2 Testing

Testing is an important aspect of the implementation process. Master test plan should be made as a guideline for tests to be carried out. The tests recommended are the unit, system and integration tests and after these are performed, the acceptance test should be performed. For the new Adelaide centre, the alpha test can be carried out using the data from other branches as there is no existing information about the business activities of the new centre. When the new system is implemented in the other 50 centres, alpha and beta acceptance tests should be performed.

3 Installation

For the new Adelaide centre direct installation is beneficial as the centre currently does not have a system. However, for other centres, it is recommended to have a parallel installation as they currently are operating business. Overall, Jean Jacques Pty Ltd. would benefit from a single-location installation for all centres. It is important that installation should be done for all centres as soon as possible so as to avoid complexity in using two different systems.

In terms of data conversion, customer, sales and inventory data are the main data and it is also important to consider the business cycle and the times at which the business operations can be affected by installation activities.

4 Documentation

There are two types of documentation to be made which are system and user documentation. For the system documentation, it will be mainly used by the IT staff who will maintain the ERP system in headquarter. It should contain system's design specification, its internal workings and its functionality in detail. For the user documentation, it should be delivered online in HTML format as well as paper manuals since it will be used by staff and customers in all centres. Moreover, it is recommended that Jean Jacques Pty Ltd.IS department, and the centre users (staff) are involved in making the user documents.

5.2 TRAINING PLAN

Sufficient training for the new system is essential because it would help users to familiarize with and adapt to the new technology, and this will ensure that the new installed system is utilised efficiently and effectively.

IT staff and branch managers should have the highest level of priority for training because they need to understand the details to encourage and help others to use the new system. Next is the frontline operational and financial staff as they are directly involved in the system. Last is the Human Resource staff who plays a supporting role.

The training needs to be divided into two steps: first pilot project and then the whole organisation. For the pilot project training, IT staff from headquarter and frontline staff in the new centre would be taught by the resident experts from outsourced company through intensive courses. In this step, the training would not only address the issue of how to use the system but also the installation and maintenance related to the system, e.g. backup recovery solutions. Hence IT staff would gain sufficient knowledge to train colleagues in the future. Next the training would spread to the whole organisation site by site following the single location implementing strategy. In this step, IT staff would teach the frontline and supporting staff in each branch on how to use the new system instead of experts, which will reduce the cost for the implementation.

5.3 MAINTENANCE PLAN

For maintenance, Jean Jacques Pty Ltd. should have the guidelines for performing corrective, adaptive, perfective, preventive maintenance. These guidelines also should contain details on how to deal with the maintenance requests from the 50 centres in terms of the request flow and the implementation process for accepted requests.

Organisational structure of maintenance should be “separate” since development activities will be outsourced. Therefore, it is important for the IT department in Jean Jacques Pty Ltd. to have enough information about the new system and to have a contract with the outsourced party in relation to after service maintenance support such as support for emergency situations.

Since the new system will provide 24 hours, all year round accessibility for staff and customers, it should have a business disaster plan and daily backup policy for central and local database as well.

6 RISK MANAGEMENT PLAN

6.1 INTERNAL RISK FACTORS

6.1.1 Technical issues

Due to the large scale of the system, data migration from all the branches into the new system may be challenging. Therefore, detailed data migration plan including contingency plan must be developed

Lack of skills, unfamiliarity with new environment may lead to Jean Jacques Pty Ltd. employees’ resistance. In order to overcome this risk, intensive training on the skills required to operate the system with an emphasis on the benefits will encourage a positive mindset towards the new system.

Unrealistic expectations may lead to miscalculation of budgeting and in the worst scenario; it could lead to project failure. Therefore, it is recommended for Jean Jacques Pty Ltd. to have realistic and achievable goals about the new system.

6.1.2 Organisational Issues

Organisation cultures such as the level of bureaucracy, restricted communication between managers and employees may slow down information sharing. These behaviours may be fatal when critical information regarding implementation error/mistakes are late to arrive to project team. To overcome this risk, it is recommended for Jean Jacques Pty Ltd. to encourage active and open communication across the organisation.

Failure to recognise changes may lead to resources not properly assigned, budget overrun, flawed system design made, and even it may lead to the project failing. Management must be critical and responsive in gathering information to increase their capabilities to detect and to identify changes.

6.1.3 Project Management Issues

Single location strategy that is chosen will reduce risks but may increase cost and time allocation. Hidden costs for training and maintenance may lead to budget overrun. It is recommended that training costs be calculated more specifically and in detail.

6.2 EXTERNAL RISK FACTORS

6.2.1 Subcontractor Issues

Although the outsourced companies are supposed to have sufficient credibility and viability, there is still potential risk in terms of contract and the performance of the project. Therefore, Jean Jacques Pty Ltd. should have control over the whole project phase to decrease the likelihood of the risks occurring..

6.2.2 Competitive Environment Issues

The ability of the competitors to imitate the strategy will lead to another level of competition. Jean Jacques Pty Ltd. as the first mover will have the competitive advantages such as economies of scale and lower operational cost. However, they still need to emphasize their ability to provide unique services based on the data analysis acquired by the new system.

6.2.3 Collaborative Environment Issues

Customer satisfaction is very important in the service industry. The implementation of the new system will create an unfamiliar environment for customers and this may potentially lead to customers leaving and migrating to competitors. Therefore, Jean Jacques Pty Ltd. should have a promotion plan that highlights the benefits of the new system to its customers. The plan should focus on encouraging its customers to use the system and how the organisation can provide support for its customers to ensure that they become familiar and comfortable in using the new system.

6.3 SCALABILITY AND GROWTH ISSUES

After the success of the pilot project in Adelaide, Jean Jacques Pty Ltd. will decide to expand the use of the ERP system for all centres' operation. When this situation occurs, two main issues may arise.

First, since Jean Jacques Pty Ltd. has 50 branches across Victoria and 120 members for every centre, the number of transactions for the ERP system will rise dramatically. Therefore, it is essential that the system has high scalability in terms of server, database capacity and network bandwidth to perform the high number of transactions required.

Second, since the central ERP system will be used for the operation of all centres, it is crucial that Jean Jacques Pty Ltd. has a well designed disaster recovery plan for the central ERP system. This will ensure its business operation to be maintained continually even in emergency situations.

7 CONCLUSION

A new system is recommended for Jean Jacques Pty Ltd. The features in this new ERP system is based on the business case document made according to Jean Jacques Pty Ltd's requirements. As a process to make this ERP system, we developed process modeling documents which are Data flow diagram (DFD) and a Use case diagram. Following this, data modeling and database designing were performed. Entity relationship diagram (ERD) and a relational database model are the outputs of these processes.

Also, mock screens for the main menu and data entry screens have been designed which are user friendly and provide the required information sought by the management at Jean Jacques Pty Ltd.

Finally, we addressed the plans in relation to the issues of the last two steps in the system development life cycle (SDLC) which are implementation and maintenance phase. These include implementation, training, maintenance and risk management plans.

Overall, we believe that Jean Jacques Pty Ltd. will benefit by implementing the new ERP system as proposed in this report.

APPENDIX

1 LEVEL 1 LOGICAL DFDs (HR, Financial and Childcare Activities)

1.1 HR Activities

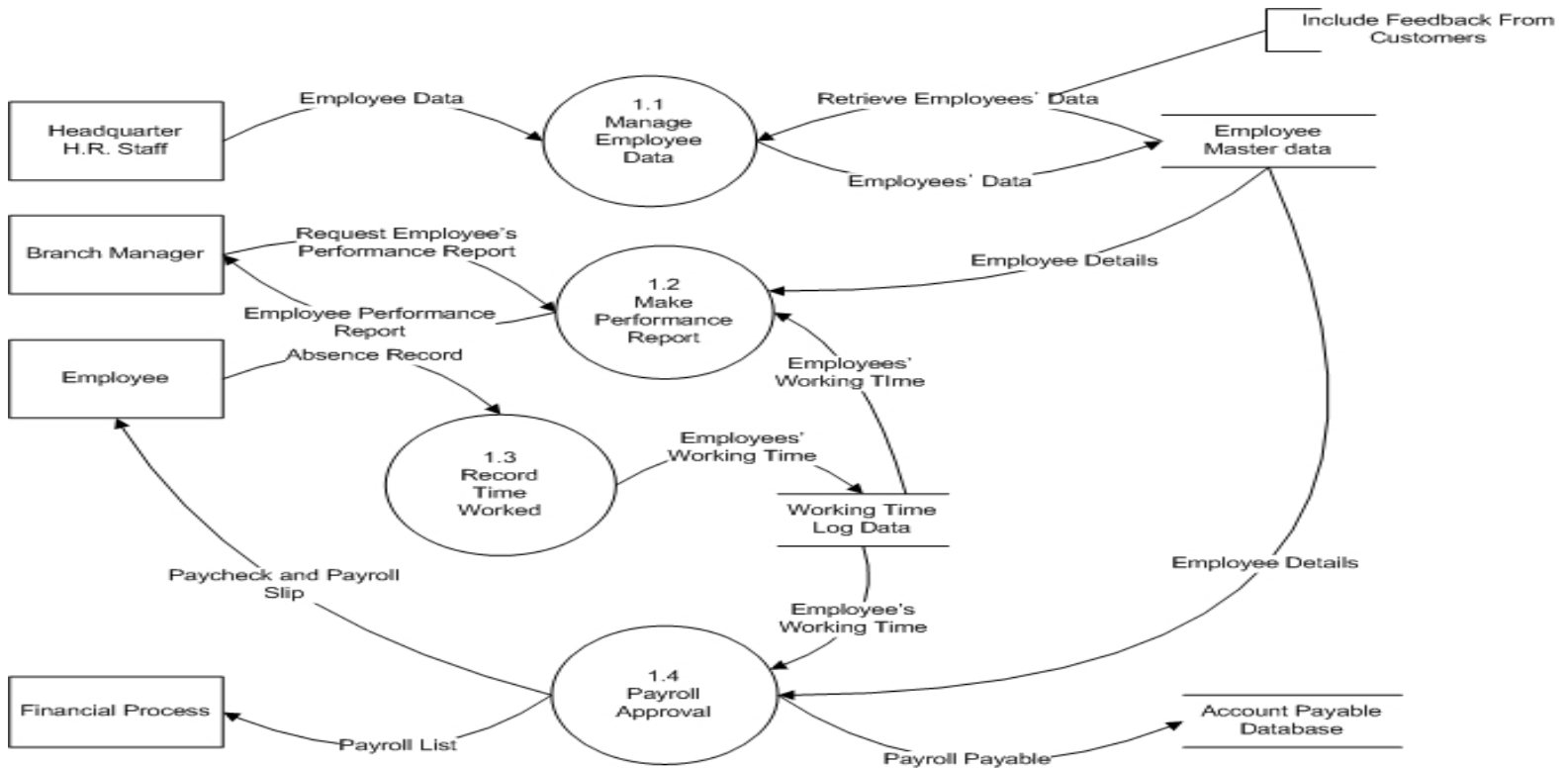


Figure 17 HR Activities Level 1 Logical DFD

1.2 Financial Activities

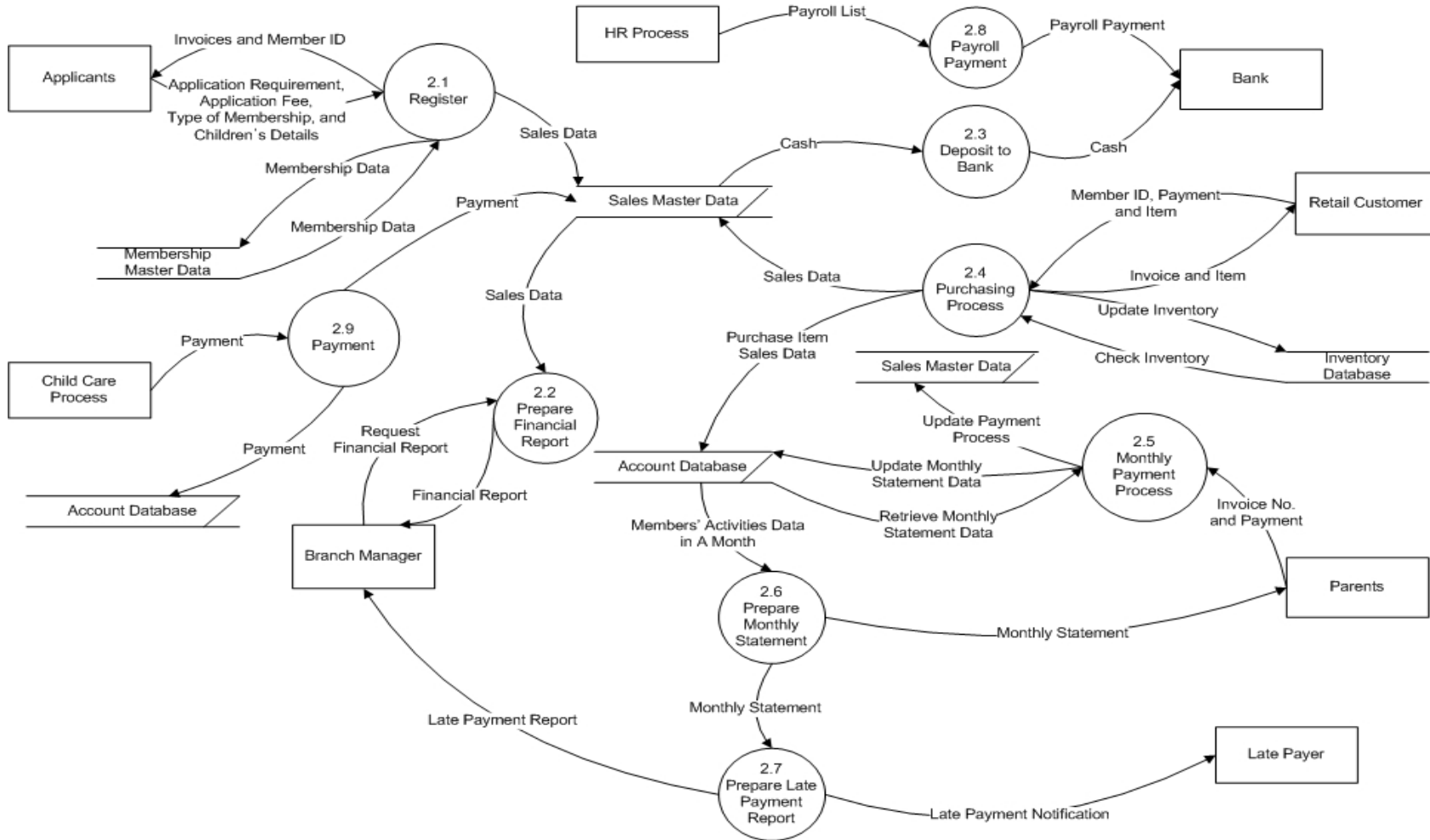


Figure 18 Financial Activities Level 1 Logical DFD

1.3 Childcare Activities

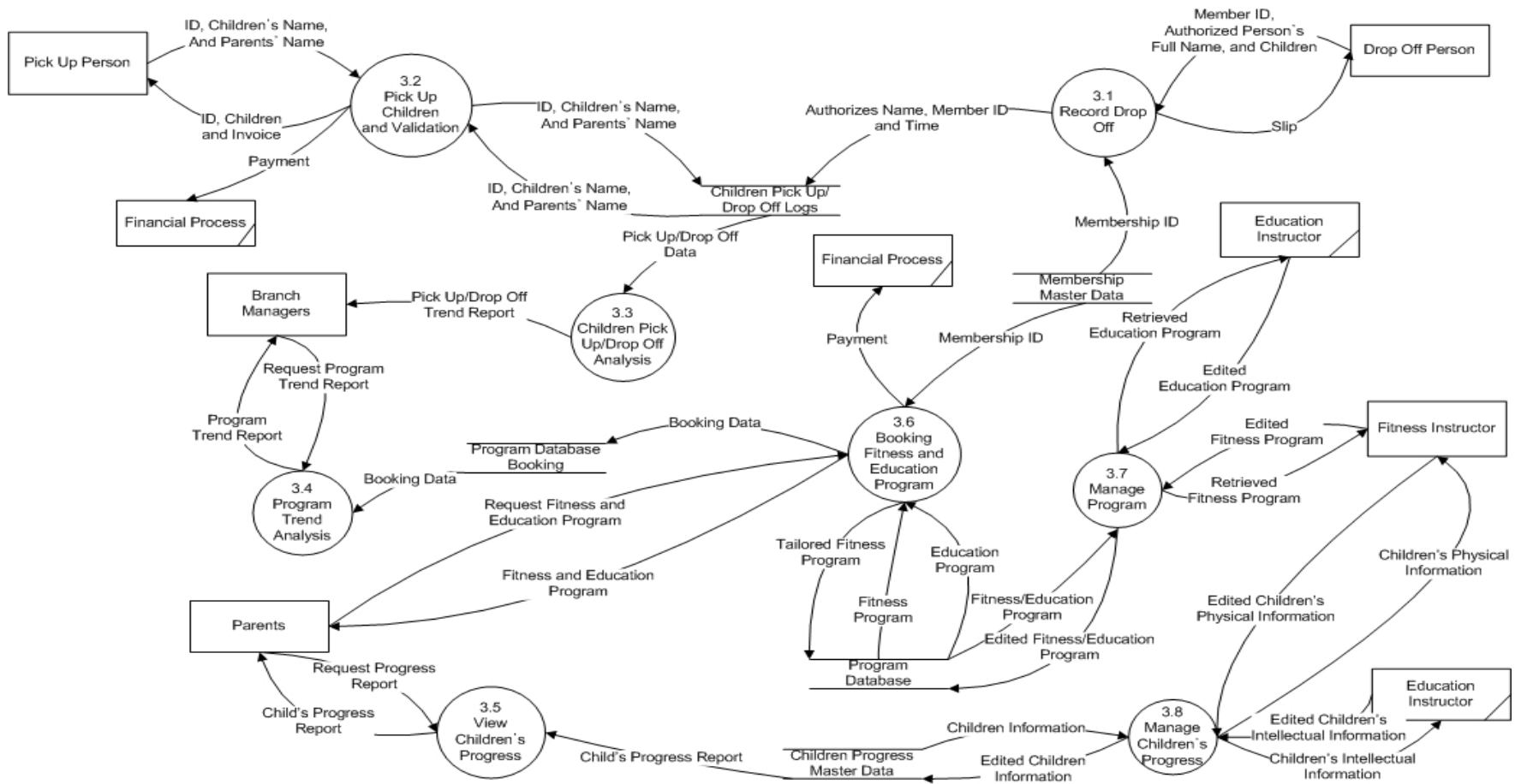


Figure 19 Childcare Activities Level 1 Logical DFD

2 USE CASE (HR, Financial and Childcare Activities)

2.1 HR Activities

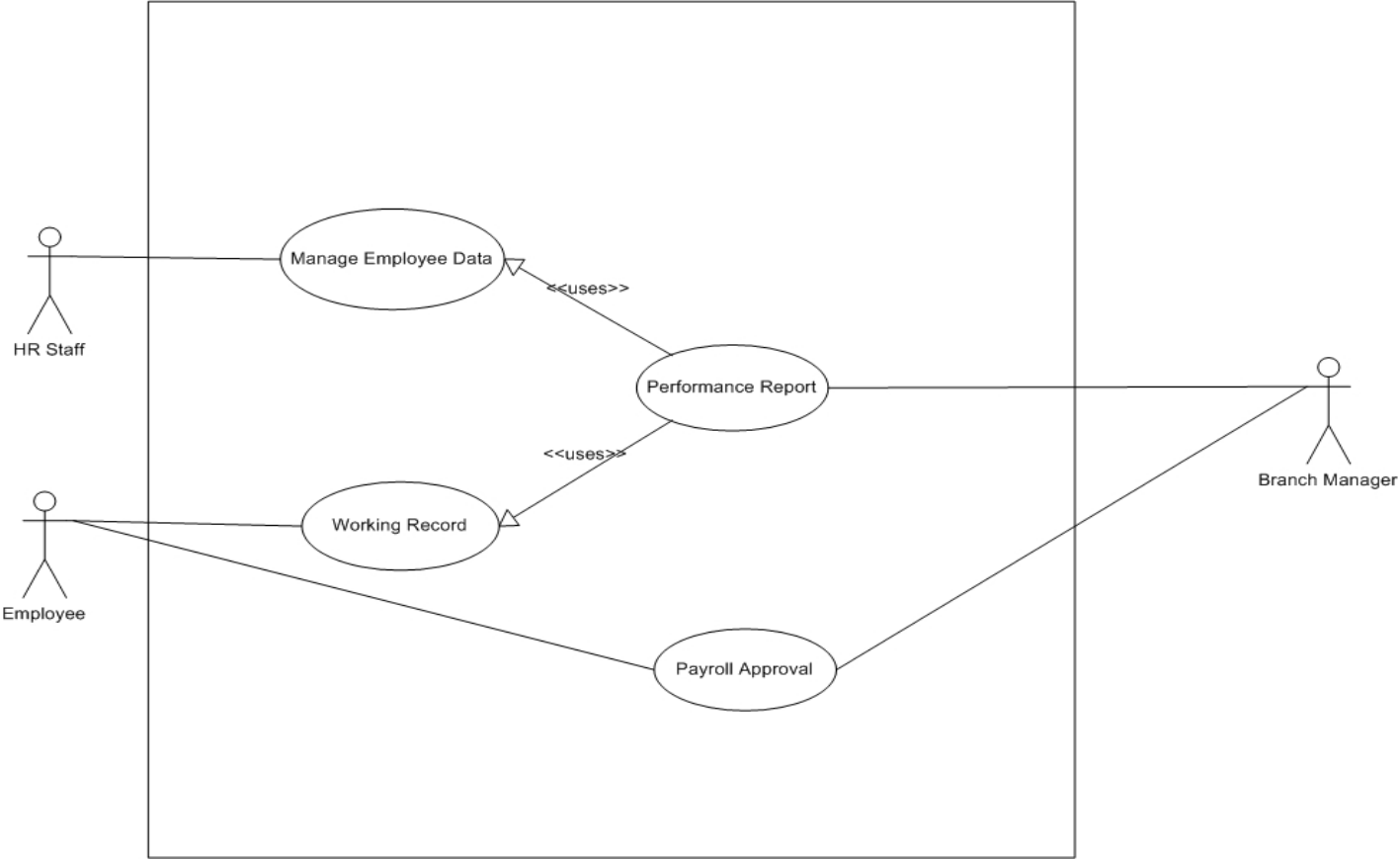


Figure 20 HR Activities Use Case

2.2 Financial Activities



Figure 21 Financial Activities Use Case

2.3 Childcare Activities

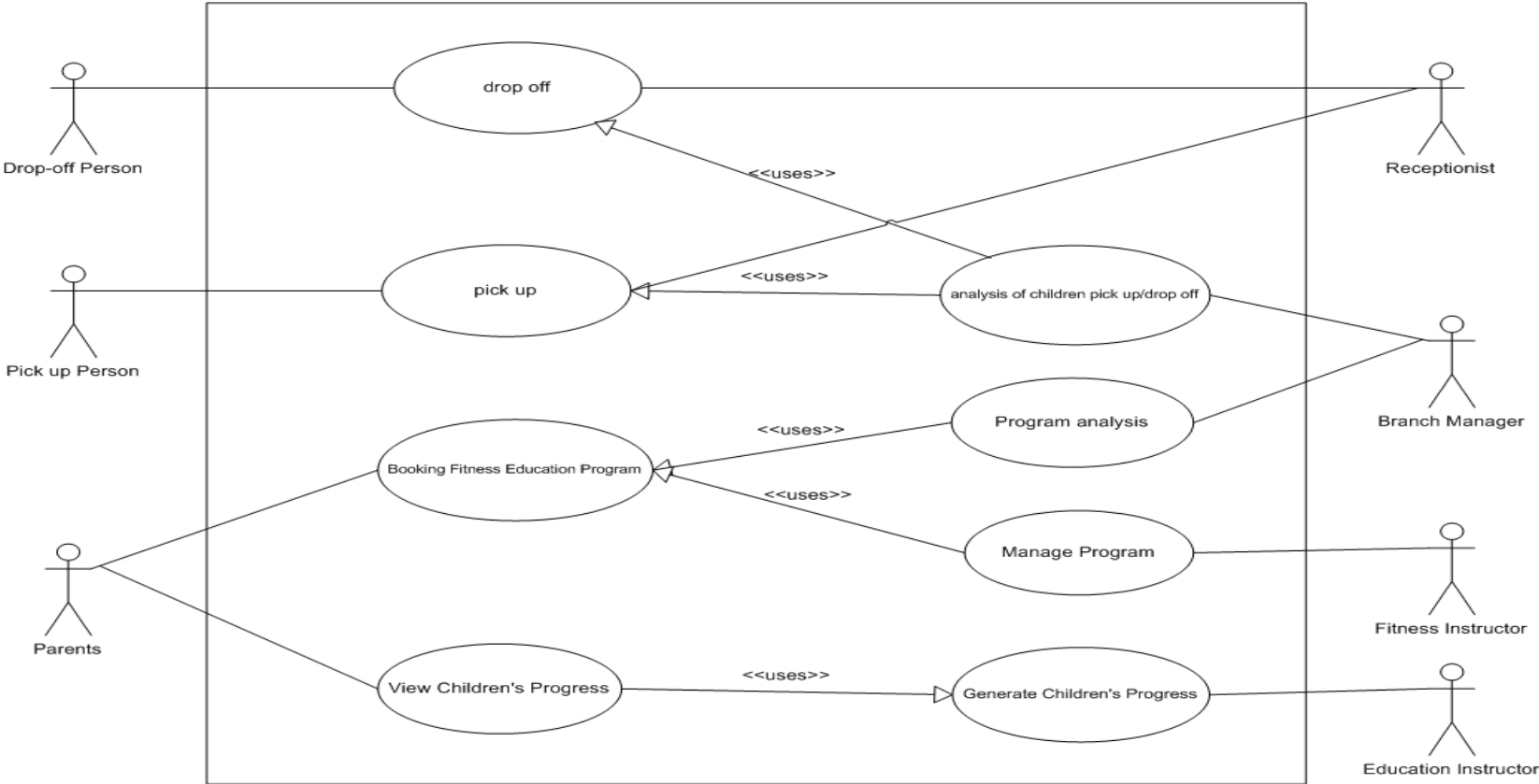


Figure 22 Childcare Activities Use Case

3 PROJECT MANAGEMENT

In order to fulfil the requirements of the project, our group members set out a guideline that would ensure the project to be completed by the required date. We considered project organisation for our group to delegate roles and responsibilities. In addition, we confirmed a project deliverables and schedule, and to ensure its success, we had a project risk management plan. The method we approached in relation to our group dynamics and communication was through a group work conduct and project standards and procedures guideline.

3.1 PROJECT ORGANISATION

Specific roles have been identified for the group project, and the responsibilities of each role are summarised as follows:

3.1.1 Project Organisation

Role	Description	Responsibilities	Person
Project Manager	Leads project team; responsible for project deliverables.	<ul style="list-style-type: none"> ● Keep in touch with every member progress. ● Ensure each member finish their task on time. ● Deal with issue such as team harmony. ● Ensure that all changes to be made are followed up. 	Sandy
Review Group	To consist of 2 people who be responsible for conducting document reviews and audits.	<ul style="list-style-type: none"> ● Integrate document sections ● Maintain copies of all documents produced. ● Ensure all documents are proofread, edited and reviewed. 	All
Secretary	The Secretary is responsible for maintaining the group log, and recording the minutes of meetings	<ul style="list-style-type: none"> ● Minutes of meetings must be typed and posted on the group discussion board. ● This role is to be circulated amongst all team members 	All

3.2 PROJECT SCHEDULE

3.2.1 Project Deliverables

Deliverables – Components	Delivery Date
The First Progress Report	11/04/2005
The Second Progress Report	02/05/2005
The Final Group Project Report	23/05/2005

3.2.2 Project Work Breakdown Structure

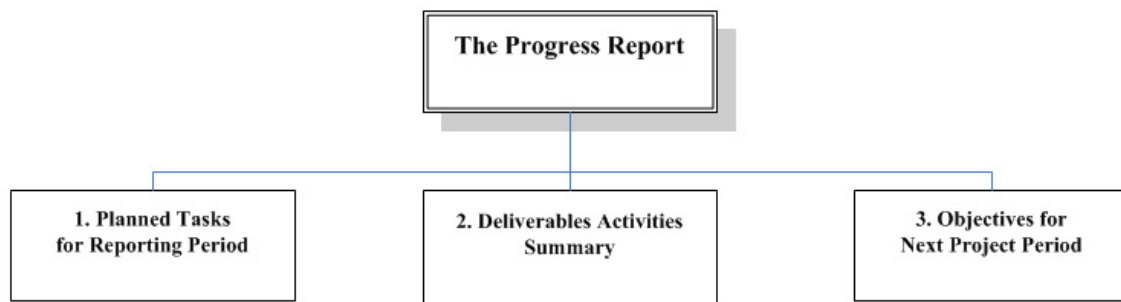


Figure 23 The Progress Report Breakdown

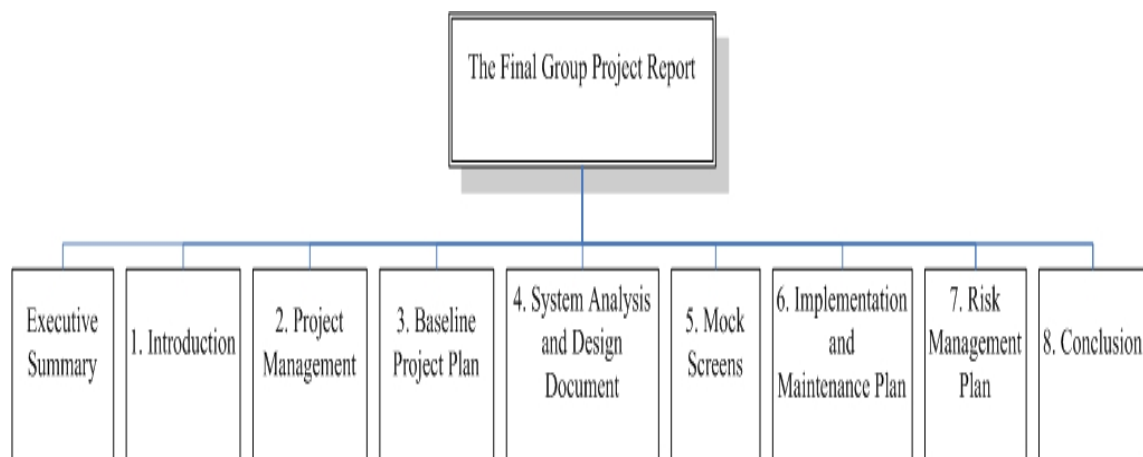


Figure 24 The Final Group Project Report Breakdown

3.2.3 Project Gantt Chart

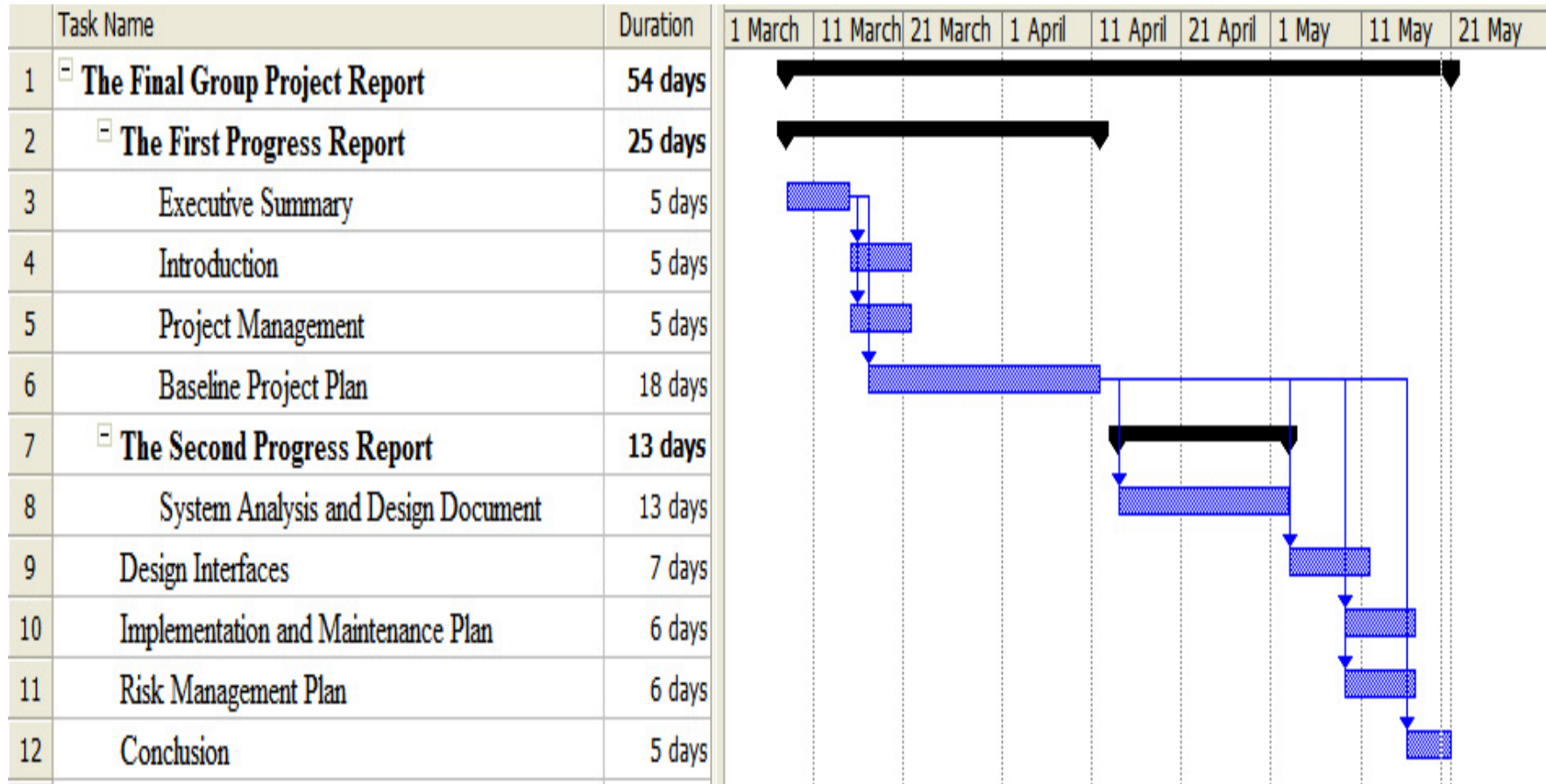


Figure 25 Project Gantt Chart

3.3 PROJECT RISK MANAGEMENT

This section identifies some of the risks associated with the project at hand, and the set of risk reduction strategies/contingency plans to minimise their impact. The table below identifies the probability and impact of a risk, followed by the level of risk exposure to the group as a result.

Impact Values	Risk Exposure
Negligible	0-1, Little or no risk to the project
Marginal	1-3, Monitor risk closely
Critical	3-4, Develop risk reduction strategies
Catastrophic	5, Monitor risk closely and develop risk prevention strategies

Risk	Prob.	Impact	Risk Exposure	Contingency Plan
Group related risks				
Personal shortfall	30%	3	0.9	Personal shortfall by any group member is to be resolved by the group as a whole. In severe cases this may include redistribute tasks amongst group members. The first step here will be to assess how much of the project is completed. In the case where a member withdraws from the project team late during the semester, then a redividing the workload is necessary.
Time shortfall	50%	4	2	The project schedule provides a great deal of flexibility between due dates and chosen end dates. If due dates are surpassed, the group is to conduct a meeting and decide on one of the two possible options. Finish report and suffer penalty marks. Hand in incomplete report.
Communication problems	40%	4	1.6	Everyone is to be open with any problems and raise them as early in the project as possible to prevent deterioration of the problem

Conflicting group ideas	40%	3	1.2	Group meetings will be held and conflicting issues discussed. The best reasoning or majority vote wins!
Computer problems	40%	3	0.6	Store hardcopies, email to others, upload on the group discussion board, and perform backups.
Project related risks				
Misunderstanding of the project	50%	4	2	Have regular meetings to discuss project requirements. Keep in regular contact with Carla to discuss any issues.

3.4 PROJECT GROUP CONDUCT

3.4.1 Communication Methods

The general aim of the communication method is to provide guidelines for record keeping amongst the group members. Efficient record keeping is fundamental to the production of an accurate logbook detailing the historical details of the project. These are guidelines only and are not meant to be policy.

3.4.1.1. Group Discussion Board

The group discussion board (http://www.sywon.com/eng/bbs/zboard.php?id=306620_SDD1) is used for all members to put up information, documents and report, rather than emailing to everyone. This is the main communication medium for the group

3.4.1.2. E-mail

Supplementary to the group discussion board, E-mail is to be used.

3.4.1.3. Phone Calls

For urgent messages and questions, phones are to be used. All members exchanged their contact numbers on the first day of collaboration.

3.4.1.4. Meeting Schedule

The entire group has decided to meet regularly once a week to keep everyone updated on each

section and the research. Most meeting venues and time shall be announced either in the previous meeting or over group discussion board on online.

3.4.2 Meeting Protocols

Meeting will generally follow standard practices as amended and noted below:

1. Secretary: The person allocated to take the minutes of the meeting and forward the typed minutes to them members of the group.
2. Agenda: Generally will not be set in advance as the meeting topics will be self-evident in relation to the project's performance.
3. Quorum: Majority of the group is required for a meeting however if there are apologies or the available members feel that they can still have a productive meeting, the scheduled meeting should proceed.

3.5 PROJECT STANDARDS AND PROCEDURES

3.5.1 Version Control

The team is fairly large and there is only one report, so this necessitates that a proper methodology is put in place to ensure identification of different versions of documentation. The following section illustrates the methodology that is to be used.

The following procedure is what our group used to track the changes of the documents.

1. The modifier gets the latest version of document off the group discussion board.
2. The modifier announces on the board that modification of document is started.
3. The modifier makes the changes. The format of file name is <document_name>_<date>_<version_number>_<modifier> c.f) for example DFD_20050512_Ver3_Idol
4. The final changed document is placed on the group discussion board.
5. The modifier announces on the board that modification of document is completed. The subject of the message should be <name of document>-<version_number>. c.f) for example DFD – Ver3.

The rationale behind this methodology is the size of the group all changing a single document, and also everyone is responsible for different parts so they will be changing essentially different sections to each other.

3.5.2 Review Process

The review process is an essential component to maintain the quality of the documentation within the project. The review process is broken in two stages:

1. The preliminary reviews are conducted by all members of the team and are by increments. As each member reviews the document, he/she will highlight the changes and the author of the section will make the required changes. In the process both the reviewer and the author will need to discuss any problems and misunderstandings in the review section.
2. The final editing or review will be done to ensure that the whole report flows and minor problems resolved.

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