Syracuse University

ywca IS ON A MISSION

Requirements Elicitation and Analysis I

IST 654 - Information Systems Analysis
Professor Lu Xiao

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Requirement Overview

Interview Details

- Group conducted the interview in the fourth week of the class. We prepared a list of questions and designed an Interview outline prior to the decided date for the meeting.

- The first meeting was conducted at YWCA office, Syracuse with Ms. Liz Wierbinski. The meeting went on as a discussion more than an interview. It lasted for almost one hour.

- Two students (Raghav Raheja, Rajat Varshney) from the group were given the responsibility to interview the client and the other two (Niti Saluja, Ashmin Swain) were assigned to jotting down the points discussed.

- We also recorded the interview with prior permission from the client. We also got the consent form signed before the beginning of the session.

- The meeting with Ms. Wierbinski helped us understand the programs run by YWCA, it also gave us a clear understanding of what is expected from the project.

- We tried to allocate time to each topic relevant to the project, the topics were selected keeping in mind the discussion client had in the class and understanding that we required from the meeting.

- The discussion touched on topics related to the working in the organisation (Hierarchy, Vision), the relevance of data with the programs, present data collected by the organisation, desired state after the completion of the project, and the meaning of data for each member in the organisation. The detailed outline can be seen in the annexure at the end.

- The group also had a second meeting on a call to understand the data shared by the organisation. During this call, we got a better understanding of the information shared. The organisation representative Ms. Wierbinski also mentioned about the physical data form formats that will be shared in some days.

Collected Information

YWCA has been very cooperative in their efforts of sharing information throughout. They have shared many documents with us to get us acquainted with the kind of information the organisation deals in. There are still some documents awaited apart from the ones that are received.

Document	Description	Status
2017 DOC Comprehensive Spreadsheet	This document gives a detailed understanding in terms of the sponsor involvement with the organisation	Received
Girls Inc. Programs 2017 demographic data	This file shows the framework of what all information is captured for different programs in Girls Inc. for the year 2017.	Received
Girls Inc. total numbers 2016	Filled in data for the parameters in the framework with graphical representation that is generated by the organisation for 2016.	Received
Poverty Tool 2017	This excel document shows, the basis, on which the organisation justifies a family below poverty line or above poverty line.	Received
STYA Demographics Mar-Aug 2016	The document offers the demographic data (Gender and Race) that is collected for STYA.	Received Additional Data Expected
SU Intern Database	This is the work of the students from the same course who worked with the organisation last year.	Received
UW Annual Report - YWCA Girls Inc. Year 3	This document shows the format of the annual report that is generated for Girls Inc. program by the organisation	Received
UW Annual Report YWCA Women's Residence Year 3	The file shows the format of the annual report generated for women's residence program by the organisation.	Received More Data Expected

*Apart from the data received, additional data is expected in terms of the physical forms in which the organisation collect the data.

Observations

The team went through the data and realized that: to integrate the data, there will be a lot of things that the team will need to figure out. The first and foremost is how to design a framework that takes in data for all the programs and create visualization and the same time does not get slow.

After going through the data, team tried to think over the options to ease their process. One observation from the data was that some of the data collection parameters were common like, demographics (Race, Gender, and Area) and attendance. We tried to develop a sample model that might be helpful for the organisation.

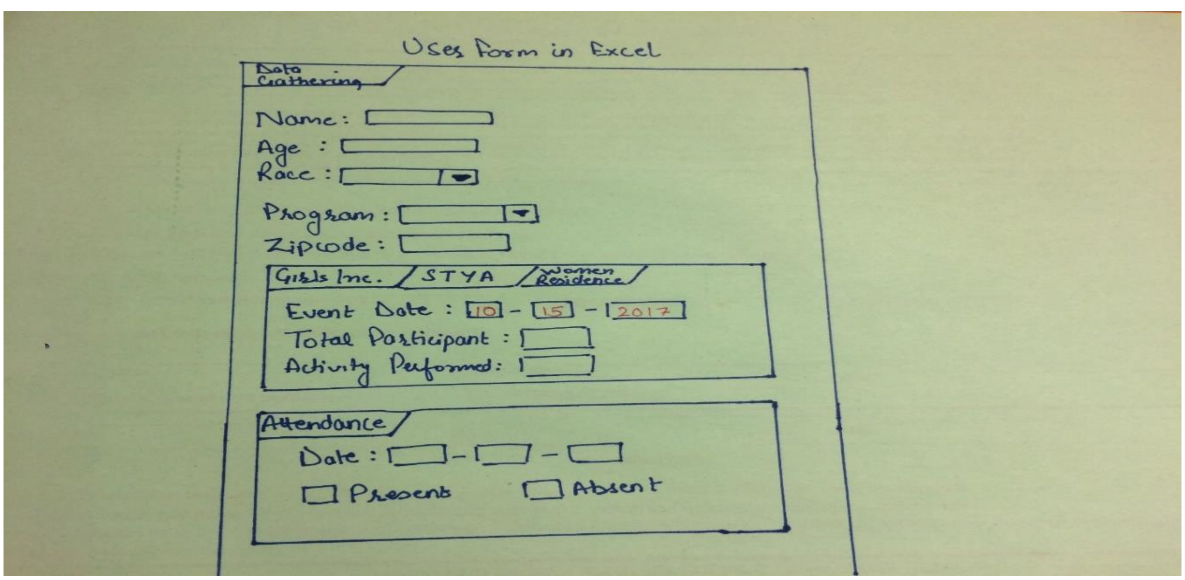
Paper Prototype

To put in the observations by the team, we tried to map it across papers to see how the system would work.

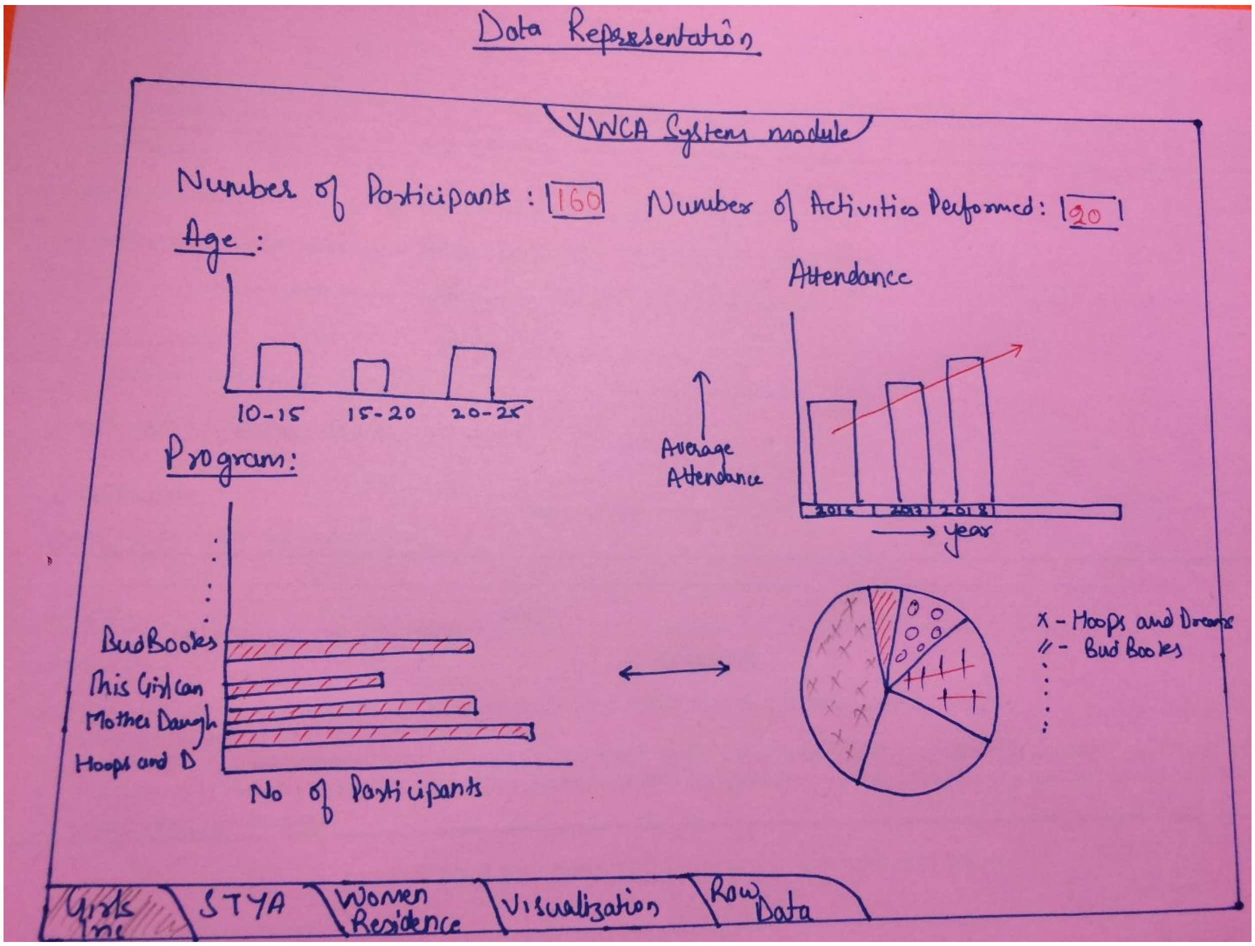
The idea is to cover, three high level topics:

- Data Gathering
- Data Representation
- Ease of Use

Data Gathering: We thought gathering of data gets difficult when we have to manually enter the data in each excel cell. To reduce the work and ease the process of entering the data, we propose using excel forms to input data and if the data is collected through google drive, that data can just be copied in these excel sheets. The excel form could something like this:



Data Representation: Our focus is on this step as majority of the work is being done in this step. The representation of the data becomes difficult considering the programs of the organisation. It becomes really challenging to display the data that is so extensive in a way that is useful and easily understandable by the organisation. We thought of creating common table for subprograms in a program, and a common attendance sheet for all the programs. This would help as it would reduce the number of sheets in the worksheet, thereby making the file light.



Ease of use: To ease the organisations move to the new tool, we plan to create a training manual that would explain the step by step working of the system. This training module will cover the screenshots from the actual project, so that the system can be understood just by reiterating the steps as shown in the module.

Requirements Representation

Use Case Overview

After having the discussion and going through the documents sent by the organisation, we all brainstormed to figure out the major events in the whole process. We listed down all the events in a chronological order. It can be depicted as:

1) Registering a new beneficiary and collecting his/her details on a physical form.
2) Entering the details of all the beneficiaries into the system.
3) Receiving requirements from the funder and the Executive Director for data.
4) Generating graphical visualizations to depict the progress of the organisation
5) Submitting the report to the funder or the Director

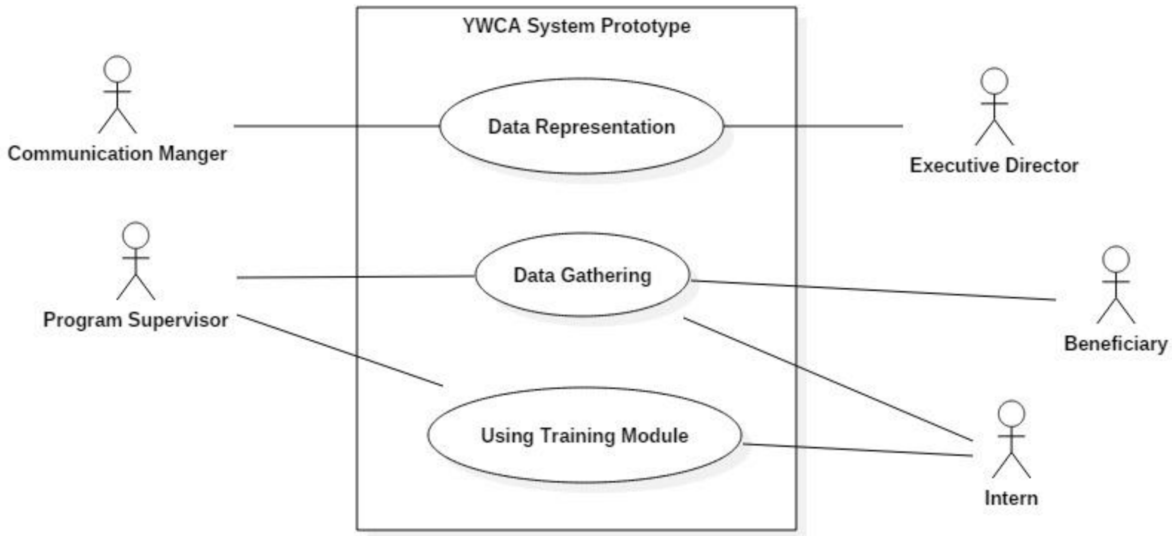
In this we have added one more activity that is missing and is important for the organisation i.e. training the existing employees using training module.

6) Using Training module

The list mentioned above covers the overall working of the organisation in terms of the tasks that are necessary for the organisation in our perspective. When we tried to study these activities, we could put them in different baskets of:

1) Data Gathering (Register beneficiary and data entry in the system)
2) Data Representation (Creating graphical representation for the reports from the metrics)
3) Training employees on new system (Training)

Based on this, we selected our Use Cases because we feel that these are the main events in the organisation that takes place and they cover the overall picture



Data Gathering

<u>Use Case Diagram</u>

Use Case Title: Data Gathering
Primary Actor: Beneficiary, Program Supervisor
Level: Sea Level
Stakeholders: Department Manager, Beneficiary, Executive Director,
Precondition: Interested customer should able to get in touch with the YWCA Manager.
Minimal Guarantee: Registration Forms are filled with the beneficiary details.
Success Guarantee: Data is successfully entered in the excel sheets.
Trigger: A new beneficiary arrives at YWCA or existing beneficiary wants to register for a new program
Main Success Scenario: 1. New beneficiary fills in the initial registration (answering name, address, race, gender) form for the selected program. 2. The beneficiary's identity proof is verified by the Supervisor. 3. The Supervisor confirms the successful registration of the beneficiary. 4. The Supervisor then provides the beneficiary with a complete schedule of the program and the upcoming events. 5. The Program Supervisor provides the bunch of registration forms to the intern. 6. The interns manually enter the customers information to the excel sheets depending on the program names.
Extensions: 1) The Program Supervisor falls short of Registration forms for a specific program a) The Supervisor checks with other staff members for the availability of forms. b) The Supervisor gets new forms printed for the customer. 2) The Beneficiary does not have the identity proof while registration a) The Program Supervisor tags the Beneficiary's registration form as "Document Verification Pending". b) The Supervisor requests the beneficiary to check his email for the availability of softcopy of the required documents. 3) While the interns try opening the excel sheet for data entry, excel does not open a) Clicking on excel file, the file shows an error saying there is something wrong with the excel file. b) Supervisor checks the expiry of the software, verify the format in which the file was saved or contact an external expert to resolve the issue.

Use Case Name: Data Gathering	ID: UC-1	Importance Level: High
Primary Actor: Beneficiary, Program Supervisor		
Short Description: This use case describes how the prospect beneficiary information is collected and stored for reporting purposes.		
Trigger: A new customer arrives at YWCA or existing customer wants to register for a new program **Type**: External / Temporal		

Major Inputs:

Description	Source
Name and Phone Number	Beneficiary
Problems	Beneficiary
Registration Form	Beneficiary

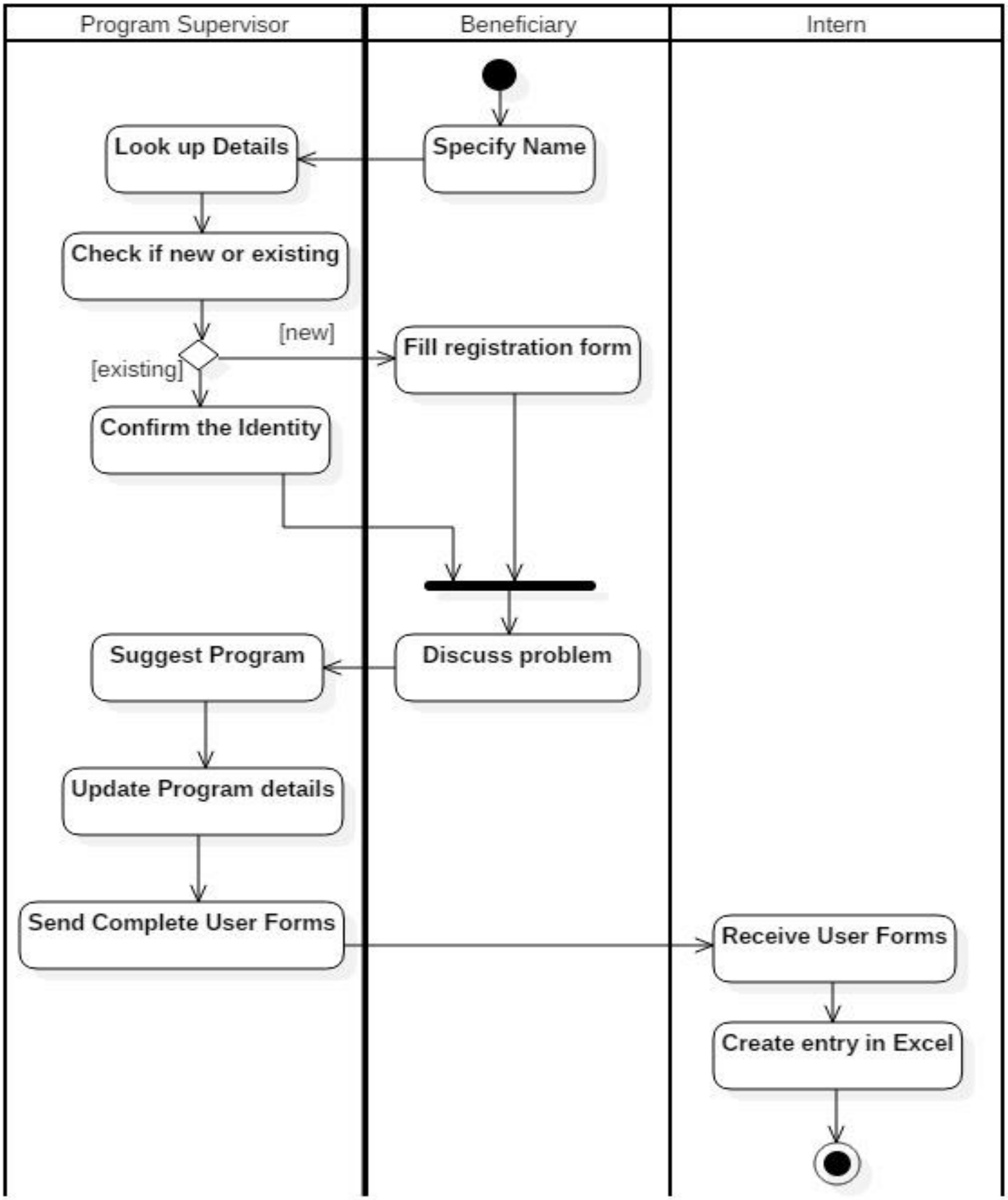
Major Outputs:

Description	Destination
Status	Program Supervisor
Verification Notification	Beneficiary
Program Name	Beneficiary
Success Notification	Beneficiary
Excel Sheets	Program Manager

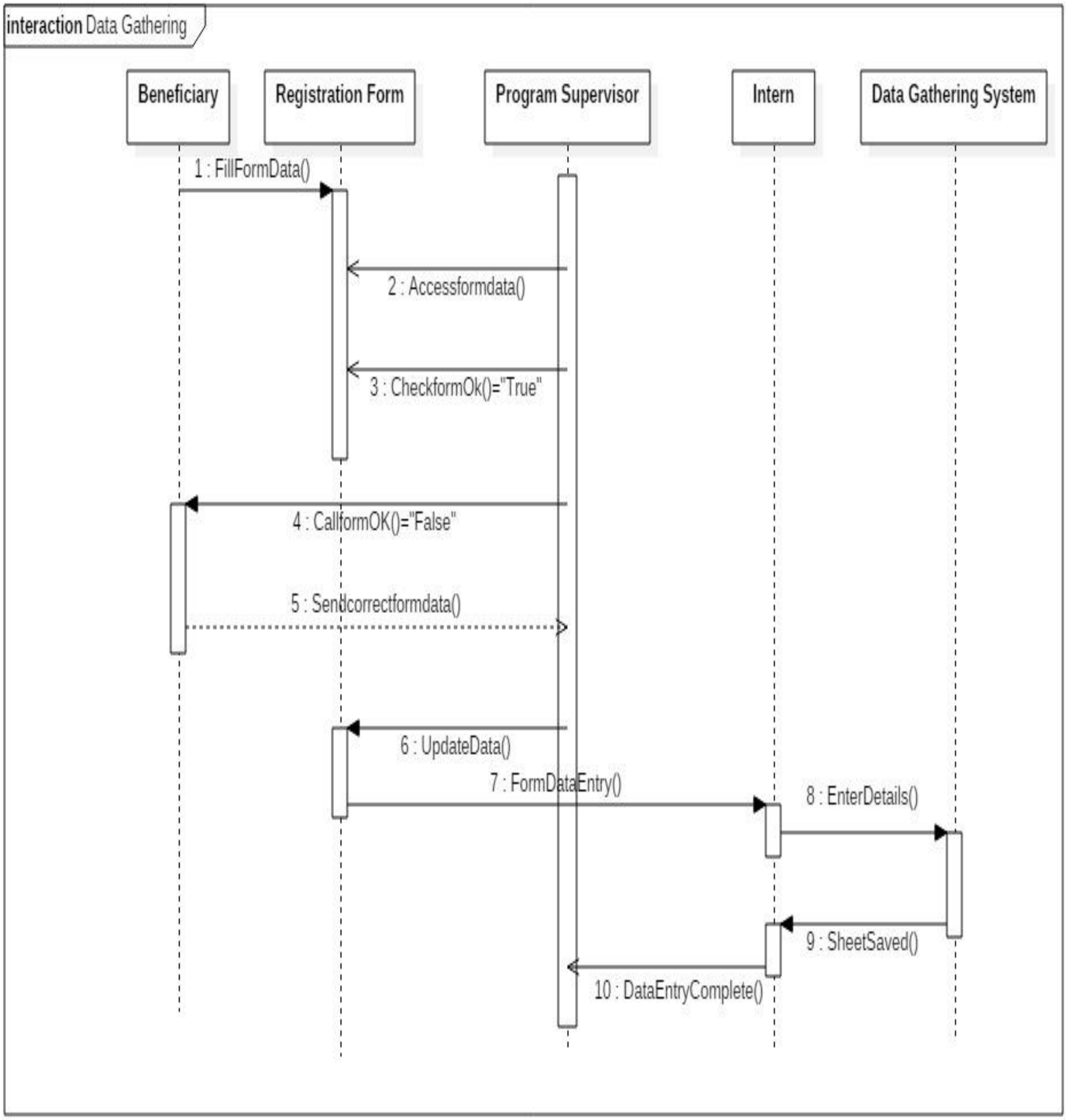
Major Steps Performed:

1. The Beneficiary specifies the Name and Phone Number to the Program Supervisor.	← Name and Phone Number
2. The Program Supervisor looks up the details of the beneficiary and check if he/she is old or new.	→ Status(New/Existing)
3. If it is an old beneficiary, supervisor verifies the details and updates the same.	→ Verification Notification
4. The beneficiary then discusses his/her problems with the supervisor.	← Problems
5. The supervisor suggests a program which would best fulfill the needs of the beneficiary.	→ Program Name
6. The beneficiary then fills out a registration form for the program.	← Registration Form
7. The Supervisor verifies the form for completeness and validates the values of all the fields which is notified to the beneficiary.	→ Success Notification
8. The intern then manually enters all the customers information in the excel sheets based on the registered program which is used by the Program Manager for generating reports.	→ Excel Sheets

Activity Diagram



Sequence Diagram



Data Representation

Use Case Diagram

Use Case Title: Data Representation
Primary Actor: Development and Communication Manager
Level: Sea Level
Stakeholders: Executive Director, Development and Communication Manger, Funders
Precondition: Development and Communication Manger should have data loaded in Excel
Minimal Guarantee: Data is consistent even if Excel stops working abruptly
Success Guarantee: Proper visualization of the collected data
Trigger: Report Request
Main Success Scenario: 7. Session time created when the manager opens the excel sheet. 8. Manager loads the data in the excel workbook. 9. Manager selects the domain sheet from the excel workbook to see all the parameters. 10. Manager selects from the program option from the drop down in the analysis sheet to develop charts for that specific program. 11. Manager add filters or specify further details to be shown in the graph (e.g. Total number by age, total number by race, and so on). 12. Manager adds aesthetics to the visualization (changing colors, increasing/decreasing the size of the chart, adding/removing legends, and so on). 13. Manger copies the chart and paste it into the qualitative report for further presentation. 14. Manager closes the excel sheet; excel sheet ask to save the file or not. If no, the original file is saved without visualization and the session expires. If yes, the new file with visualization is saved and the session time expires.
Extensions: 4) Session time cannot be created or excel does not open a) Clicking on excel file does not open or shows an error saying there is something wrong with the excel file. b) Manager checks the expiry of the software, verify the format in which the file was saved or contact an external expert to resolve the issue. 5) Data not getting loaded in excel workbook a) Manager gets a message saying that the file is corrupted. b) Manager tries to load the earlier version, it works. c) If the earlier version does not work, data has to be entered again. 7) Copy and Pasting the data changes the data in the qualitative report a) Once the manager paste the visual chart created on excel, the aesthetics of the chart might change. It might also happen that changing the filters in excel will affect the chart in this report also. b) Manager changes the template of the qualitative report that changes the aesthetics of the charts. c) Manger closes the report file and then add filters on the excel chart, the data is not affected.

<table>
<tr><td colspan="2">Use Case Name: Data Representation</td><td>ID: UC-2</td><td>Importance Level: High</td></tr>
<tr><td colspan="4">Primary Actor: Development and Communication Manager</td></tr>
<tr><td colspan="4">Short Description:
This use case describes how data will be represented after it has been collected in the organizational system</td></tr>
<tr><td colspan="4">Trigger: Report Request
Type: External / Temporal</td></tr>
<tr><td colspan="2">Major Inputs:
Description — Source

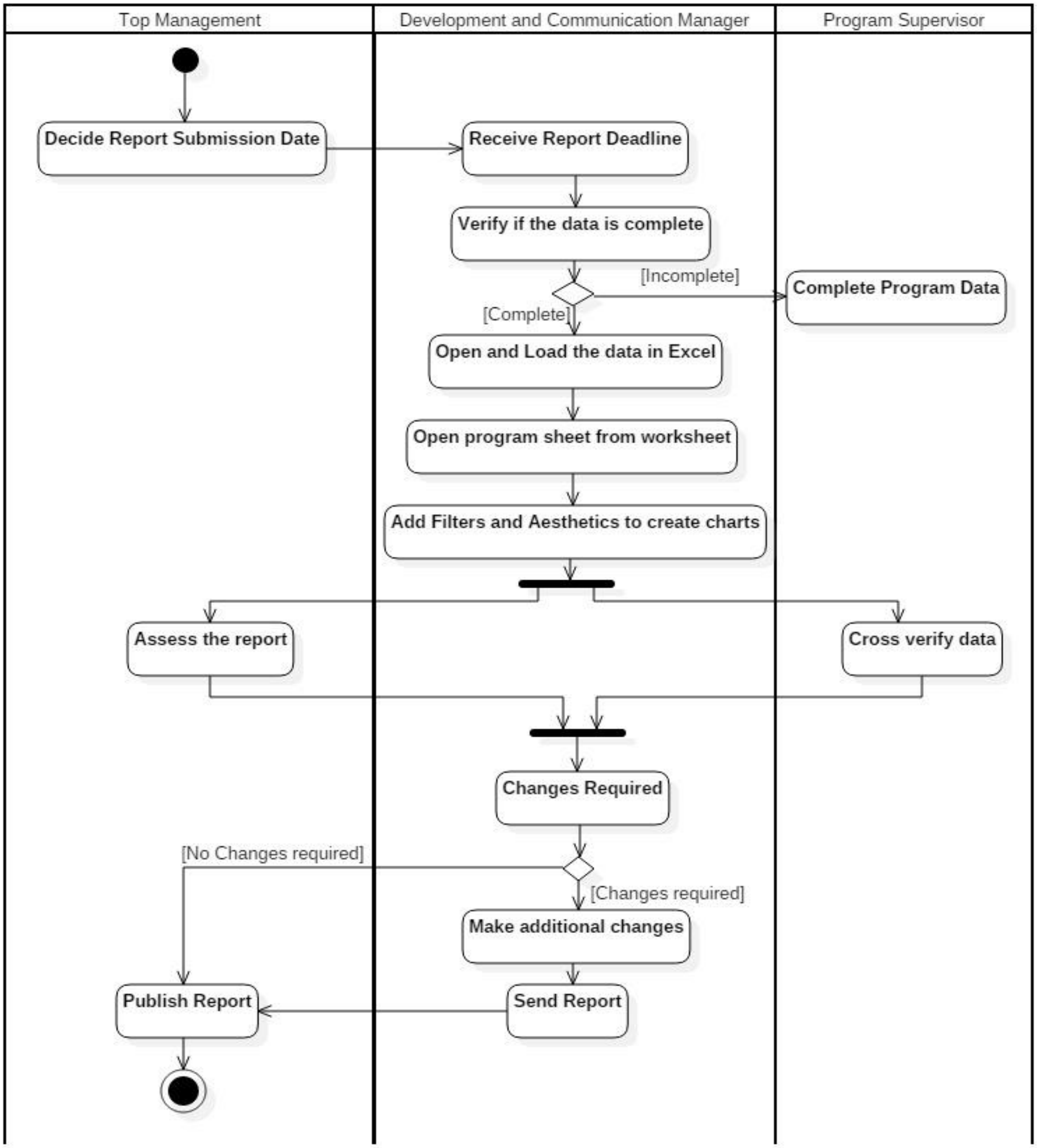
Collected Data — Program Managers
Program Selection — Dev and Com Manager
Adding Filters — Dev and Com Manager</td><td colspan="2">Major Outputs:
Description — Destination

Excel Workbook — Computer
Metrics — Collected Data
Visual Graphs — Report</td></tr>
<tr><td colspan="3">Major Steps Performed:

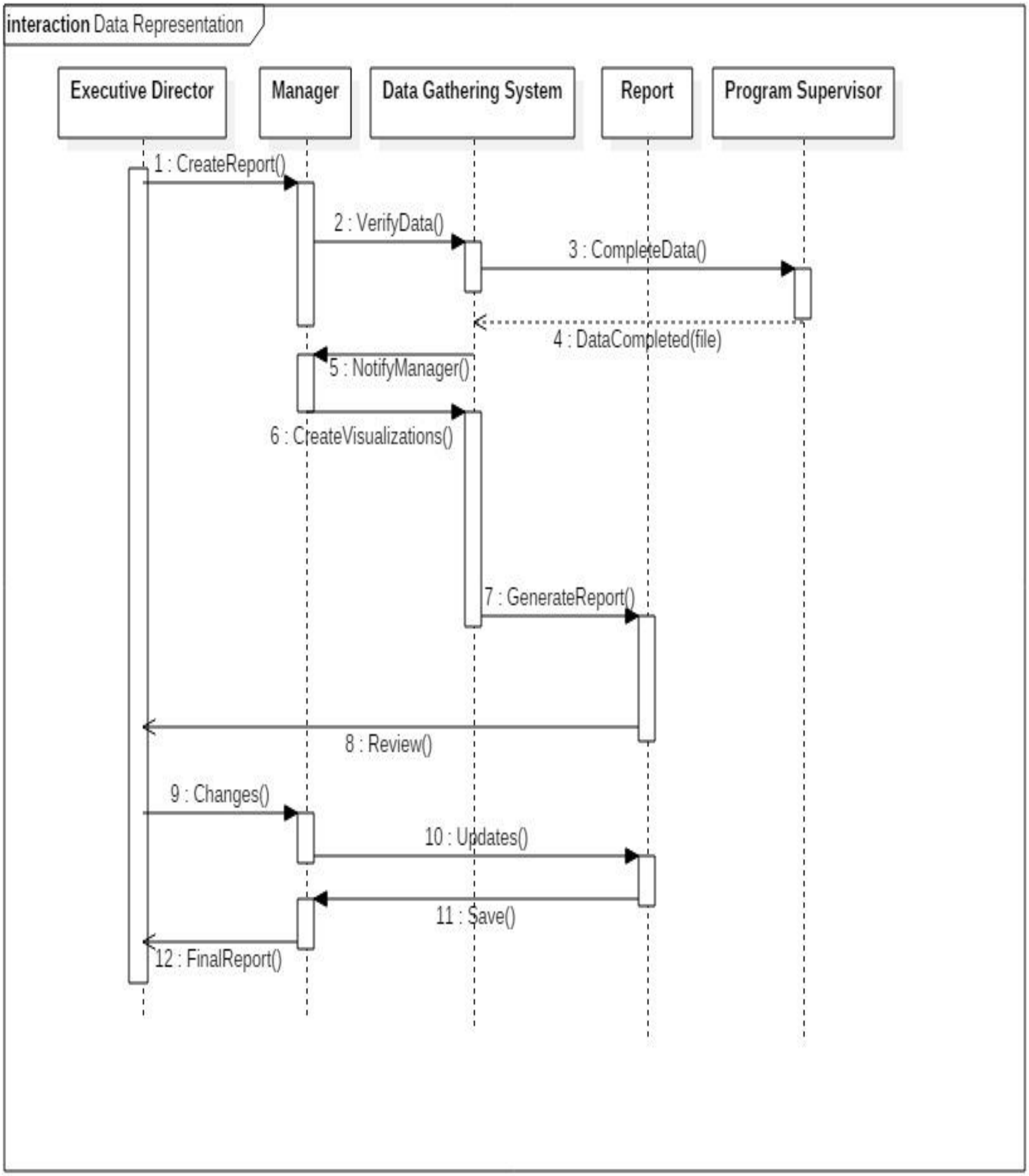
1. Interns enter the data collected on physical forms to data frames created in excel ←
2. Development and Communication Manager open the excel workbook to generate Reports →
3. Director specifies the metrics to be considered in the report →
4. Development and Communication Manager selects the program(activity) for which the report is to be created ←
5. The excel shows the output in visual graphics →
6. Development and Communication Manager adds filter, to get data on specific field and present it to the director ←</td><td>

Collected Data
Excel Workbook
Metrics
Program Selection
Visual Graphs
Filter</td></tr>
</table>

Activity Diagram



Sequence Diagram



Using Training Module

<u>Use Case Diagram</u>

Use Case Title: Using training manual
Primary Actor: Employee, Program Manager, Intern
Level: Sea Level
Stakeholders: Program Manager, Administrative assistant, Executive Director
Precondition: Training manual is present
Minimal Guarantee: Training manual is accessible to intern
Success Guarantee: Training manual solves the issue in Information System
Trigger: Issue faced by employee in using Information system
Main Success Scenario: 1. Employee faces some issue using training manual 2. Employee send the report to Program Manager 3. Program Manager asks interns to look for a solution from training manual 4. Interns can read the manual and start using the system. 5. All possible scenarios of using the system are covered in training manual. 6. Training manual has all steps required to run the system, with FAQs. 7. Interns provide a solution from the training manual 8. Employee has no more issues in using the Information system.
Extensions: 1) Employee's issue with system still persists. a) Intern finds another way to solve the issue. b) Employee is not able to use the system, stops using the manual, contacts program manager. 2) System is upgraded a) Manual is still consistent with system, Employee can solve IS issues with manual. b) Training manual is outdated, Intern is asked to update the manual 3) Employee faces an issue that is not provided in the manual or the manual provides wrong solution to the issue. a) Employee finds external source to tackle the issue. b) Employee searches for other possible methods, then stops using the training manual.

Use Case Name: Using Training Manual	**ID**: UC-3	**Importance Level**: High
Primary Actor: Employee, Program Manager, Intern		
Short Description: This use case describes how the employees of YWCA can use the training manual to solve issues with Information system (IS).		
Trigger: Employee faces issue in using IS **Type**: External		

Major Inputs:

Description	Source
Problem	Employee
Program Manual	Program Manager
Specific Issue	Training Manual
Update Manual	Intern
Implementation	Employee

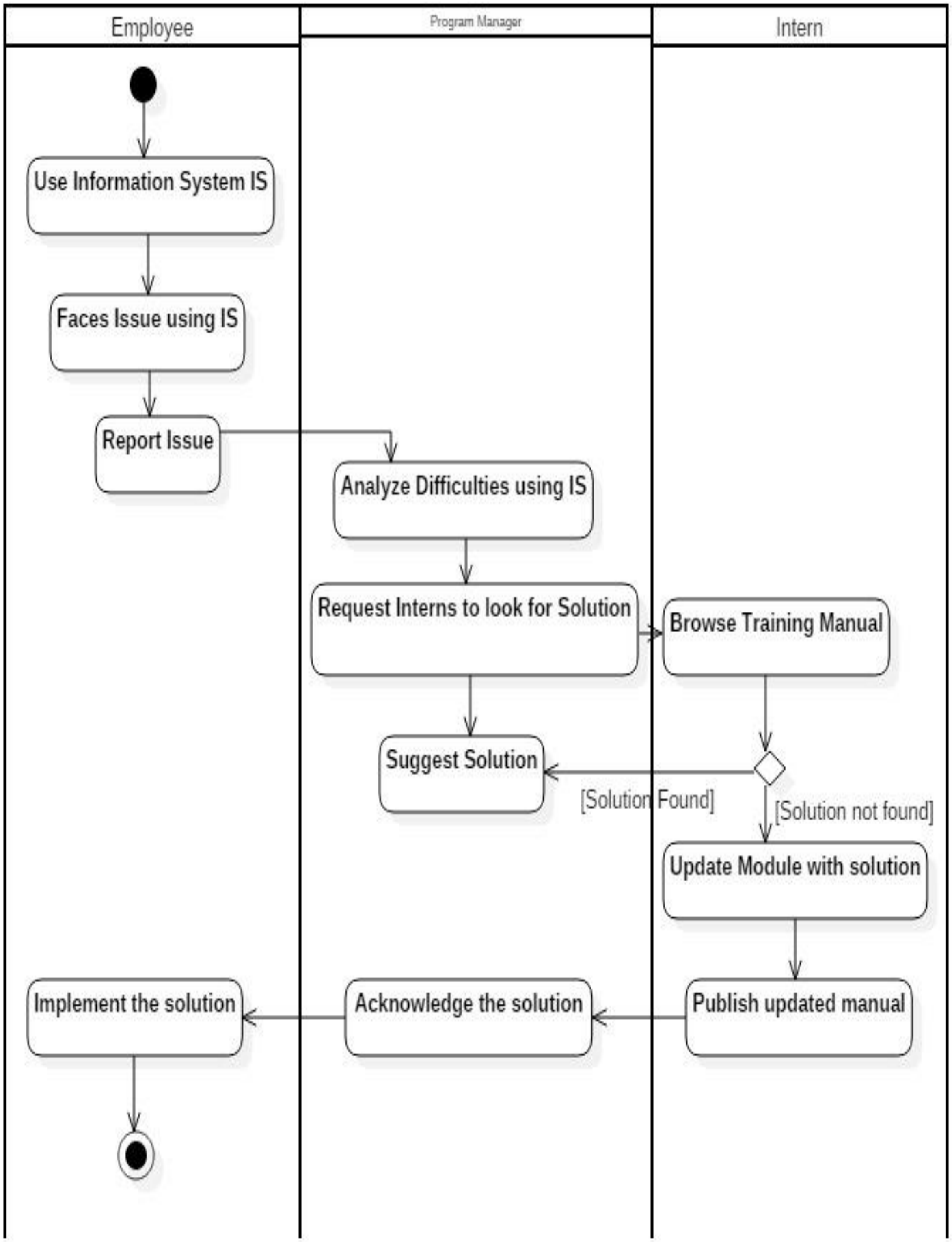
Major Outputs:

Description	Destination
Report	Program Manager
Solution	Program Manager
Method	Program Manager

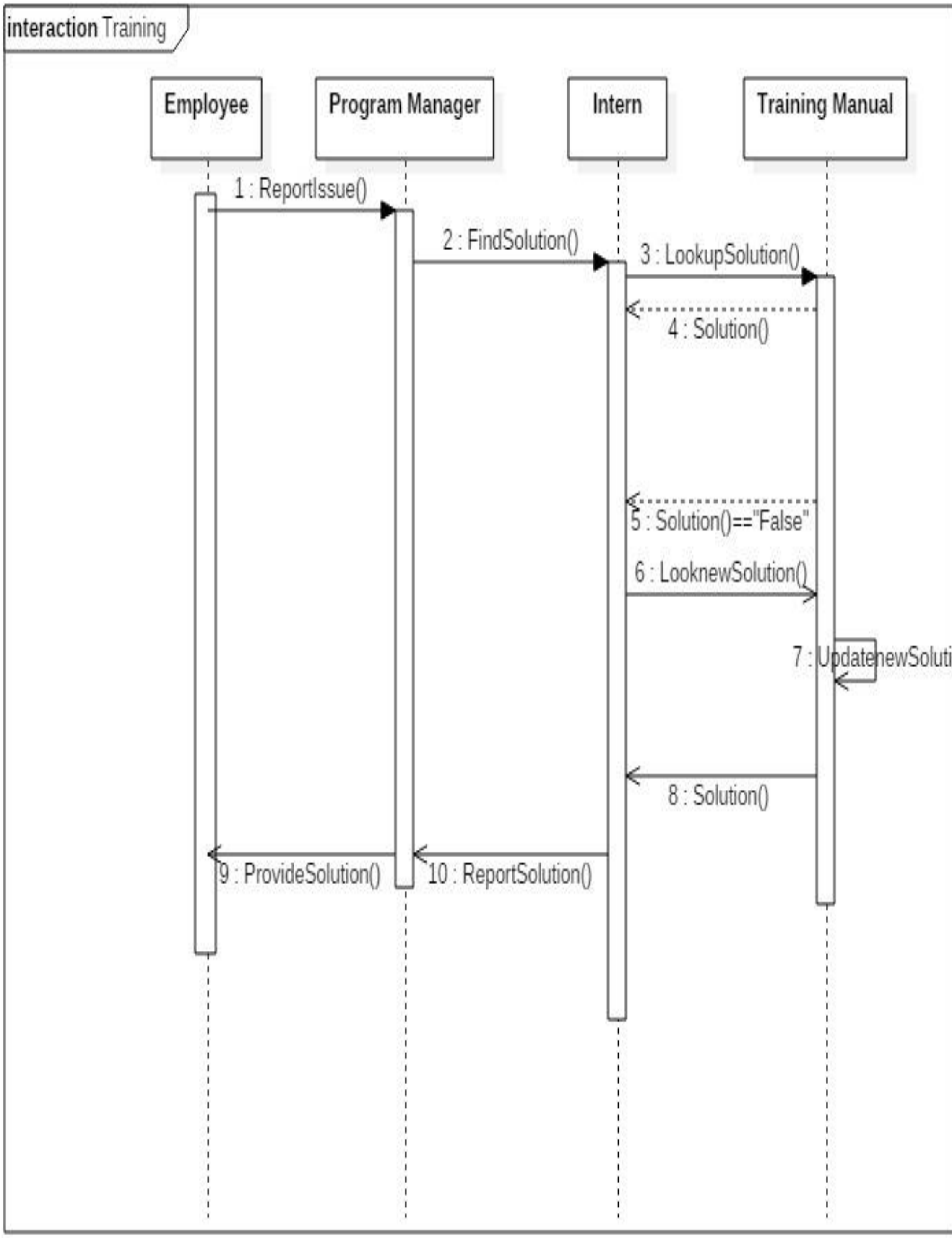
Major Steps Performed:

Step	Information for Steps
1. Employee faces problem with information system	← Problem
2. Employee reports issue to program manager	→ Report
3. Program manager hand intern the manual to look for a solution	← Program Manual
4. Intern looks in training manual for the specific issue	← Specific Issues
5. Intern finds the solution, provides it to program manager	→ Solution
6. Solution is not found, intern updates training manual, provides updated manual and solution to program manual	← Updated Manual
7. Program manager acknowledges the method and provides it to employee	→ Method
8. Employee implements the solution	← Implementation

Activity Diagram



Sequence Diagram



Annexure

Interview Outline

Interviewee: Ms. Liz Wierbinsk	Interviewer: Raghav and Rajat
Location/Medium: YWCA OFFICE	Appointment Date: 09/22/2017 Start Time: 12:00 PM End Time: 12:45 PM
Objectives: 1. Understand the working of the organization 2. Get more clarity on the expectations from the project 3. Develop a timeline of the process	Reminders: 1. Ask who uses the data 2. What is the data used for?

Agenda:	Approximate Time:
Introduction	4 min
Clarity on the project	3 min
Overview of Interview	
1. About the Organisation	3 min
2. Present State of data	2 min
3. Current Problems	2 min
4. Desired State	2 min
5. Objective from data	2 min
6. Success Metrics	2 min
7. Identify who will use it	2 min
Summarize the understanding	3 min
Questions from Interviewee	3 min
Close	1 min

About the Organisation

1. What all activities does the organisation perform?
2. How many members are there?
3. What is the hierarchy/How does information flow in the organisation?
4. Any specific incident that you would want to share?

Present State of data

1. Who uses this data?
2. What form of data is collected currently?
3. How is it collected?
4. How do you use this data?

Current Problems

1. What was the most frustrating moment interfacing with the system?
2. What do you think about the current system?
3. What problems should the new system solve?
4. Do you see any areas where data gathering is difficult?

Desired State of Data

1. How would you like information to be captured?
2. What functionalities do you need from the system?
3. Who will have access to the data?
4. Is the decision metric already decided?

Objective from Data

1. What is the reason behind getting this system?
2. What is expected from the system?
3. How is the data supposed to look after capturing?
4. How is the data projected? (Tables, graphs, and so on)

Success Metrics

1. How is the metrics decided?
2. What is to be accomplished to make this system a success?

Identify who will use it

1. Identify the users/administrator?
2. How much technical knowledge do they have?
3. How much are they open to learn?
