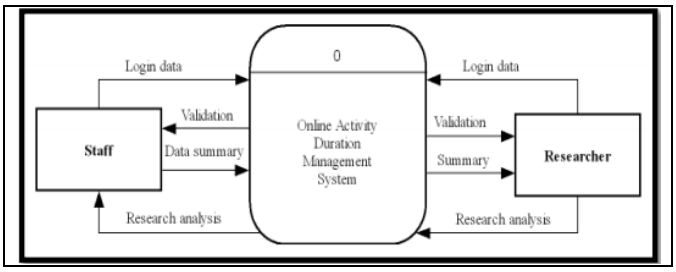

Figure 7: Context diagram of OADMS

Figure 7 show the context diagram for the OADMS for manufacturing company. DFD Level 0 describes the overall process that occurs between the proposed OADMS system and its external entities which are staff and researcher of the manufacturing company.

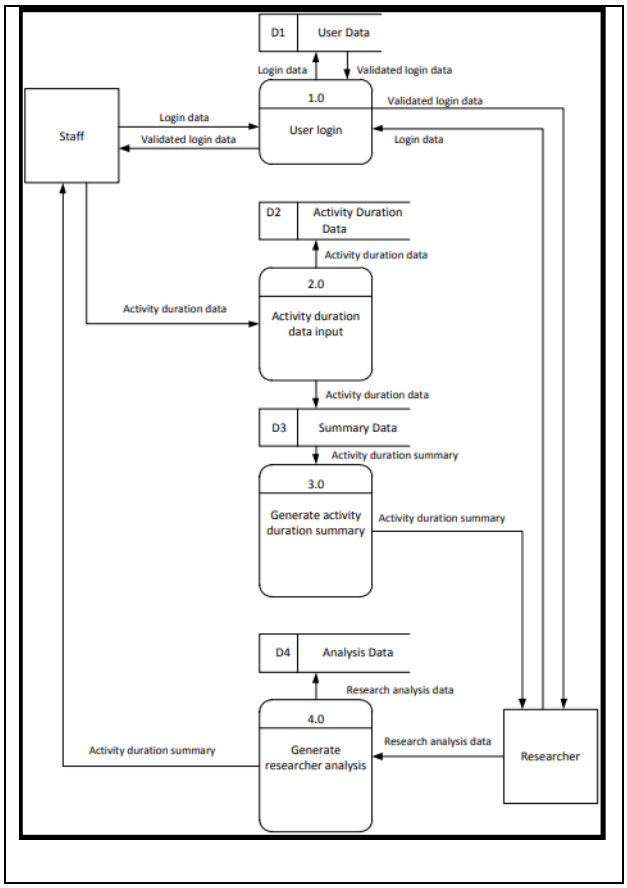

Figure 8: DFD level 0 of the OADMS

Figure 8 shows DFD level 0 of the OADMS. There are four main processes, namely User Login, Activity duration data input, generate activity duration summary and generate research analysis. Aside from that, there are also four types of data involved, which are Users data, Activity duration data, summary data and analysis data.

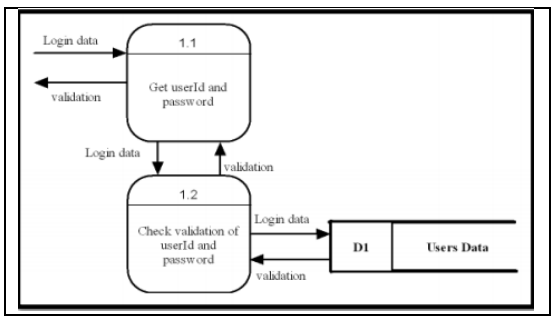

Figure 9: DFD level 1 of the OADMS for the process 1.0

Figure 9 shows the DFD level 1 of the OADMS for the process 1.0.

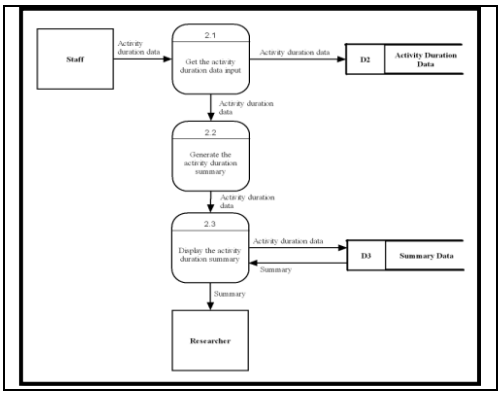

Figure 10: DFD level 1 of the OADMS for the process 2.0

Figure 10 shows the DFD level 1 of the OADMS for the process 2.0

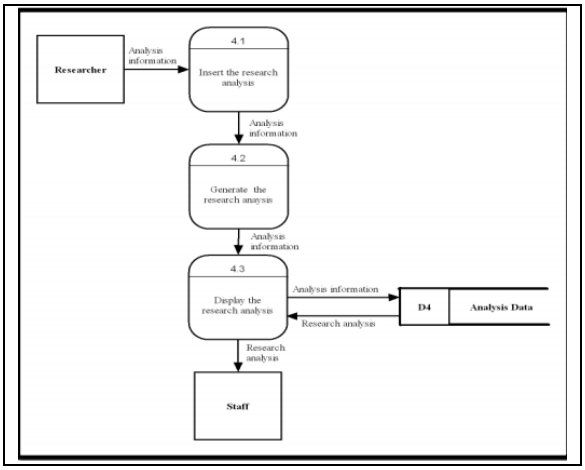

Figure 11: DFD level 1 of the OADMS for the process 4.0

Figure 11 shows DFD level 1 of the OADMS for the process 4.0. An ERD illustrated the relationship between all existing entities in a database. The tables for the proposed OADMS system are namely user, summary, process and analysis.

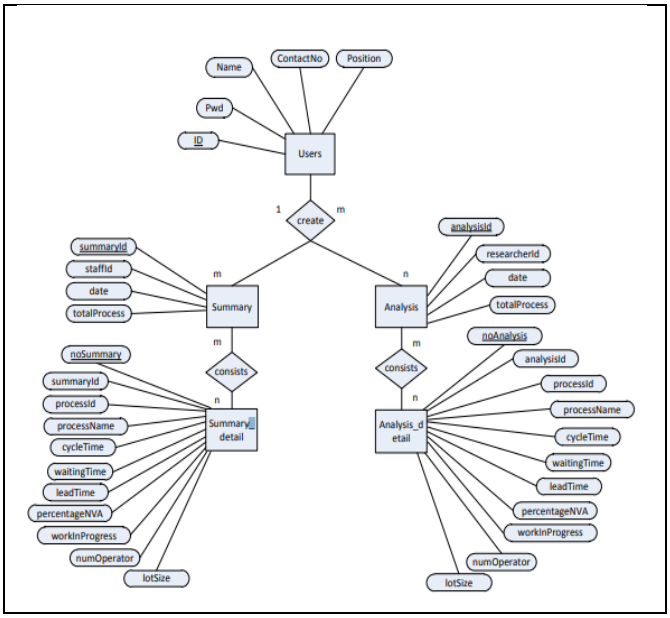

Figure 12: ERD of the OADMS

Figure 12 is the ERD of the OADMS. Users communicate to the system by using Graphical User Interface (GUI) on the screen of the computer. Therefore, the design of interfaces must be easy to understand and user-friendly. Other than that, the design of the interface should not confuse the user. Instead, it should provide a clear indication in using the proposed

system and it is able to guide user while they are using the proposed system.

Figure 13: Main interface of the OADMS

Figure 13 shows the main interface of the OADMS.

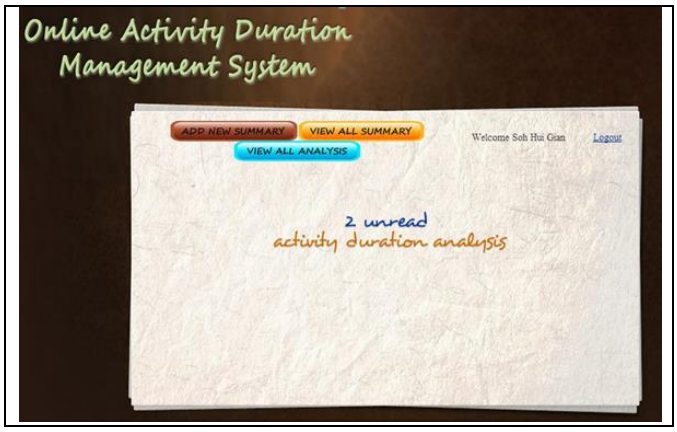

Figure 14: Interface of the homepage after staff logged on OADMS

Figure 14 shows the Interface of the homepage after staff logged on OADMS.

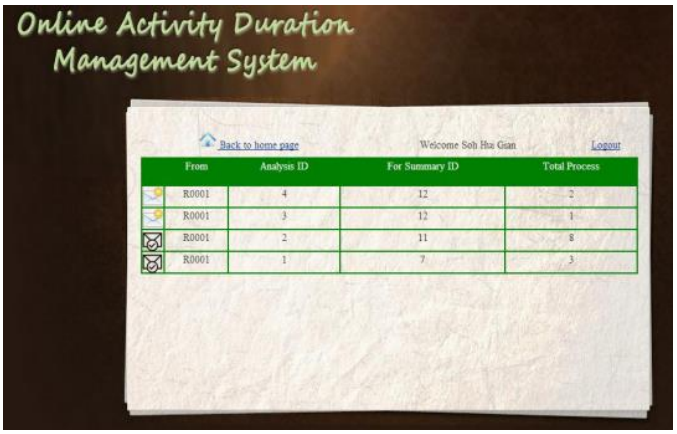

Figure 15: Interface of list of analysis that received from the researcher

Figure 15 shows the interface of list of analysis that received from the researcher.

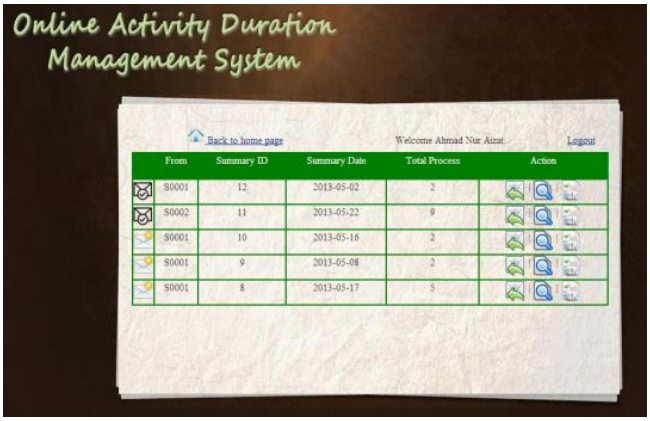

Figure 16: Interface of researcher in review the summary list that sent by staff

Figure 16 shows the interface of researcher in review the summary list that sent by staff. Functional testing is testing of all the features and functions of a system which called as black box testing. It is based on the test plan and test cases specification of each system component to ensure that the functions perform well. The following sections was describing the functional testing for OADMS.

Table 1: Test plan for the OADMS

Test Cases	**Expected Output**	**Actual Output**
User Login	Redirect to the respective page based on user position	Redirect to the respective page based on user position
Create new summary	Summary successfully created and added into database without any empty field in add new summary form	Summary successfully created and added into database without any empty field in add new summary form
- No data inserted	Show alert message	Show alert message
- Empty field(s) found in the form	Show alert message	Show alert message
- Form is not filled properly	Show alert message	Show alert message
View summary	Data retrieved from database and display in GUI	Data retrieved from database and display in GUI
Edit summary detail	Summary successfully updated and stored inside the database without any empty filed in add new summary	Summary successfully updated and stored inside the database without any empty filed in add new summary

- Empty field(s) found in the form	Show alert message	Show alert message
- Form is not filled properly	Show alert message	Show alert message
View analysis	Data retrieved from database without any empty filed in replying summary form	Data retrieved from database without any empty filed in replying summary
Create new analysis	Analysis successfully created and added into database without any empty field in add new summary form	Analysis successfully created and added into database without any empty field in add new summary form
- No data inserted	Show alert message	Show alert message
- Empty field(s) found in the form	Show alert message	Show alert message
- Form is not filled properly	Show alert message	Show alert message
Edit analysis details	Analysis successfully updated and added into database without any empty field in add new summary form	Analysis successfully updated and added into database without any empty field in add new summary form
- Empty field(s) found in the form	Show alert message	Show alert message
- Form is not filled properly	Show alert message	Show alert message
Restriction of users access	User access the system based on their position	User access the system based on their position
Generated summary report	Generated and display in GUI	Generated and display in GUI
SMS functionality	A SMS will be send automatically by system once staff created a new summary	A SMS will be send automatically by system once staff created a new summary

Table 1 shows the test plan for the OADMS. Based on the test have been made, all the objectives are achieved and can be used.

3. RESULT AND DISCUSSION

OADMS was satisfactory fulfil the overall objectives based on the accepting testing in the previous stage. The objective of this proposed system is to develop an activity duration management system that automated the manual procedure that exists in the ACM currently. The system is able to keep data of summary and analysis in the database. Users are allowed to add, update, delete and view the data of summary or analysis by using the system.

4. CONCLUSION

Online activity duration management system was successfully developed to fulfil the objectives that to manage the activity duration summary and analysis in a systematic way. The system is able to manage the activity duration and generate summary in web-based platform. The objectives have been satisfied after the development and received a good response from the stakeholders through the user acceptance testing. Although the main objectives were achieved, but there are several improvements that can be applied for produce a more functional and useful system, yet easy to use and compatible. Improvement can be done to be enhancing the OADMS with suggestion and requirements from users in the future.

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