

CAMPUS RESOURCE MANAGEMENT SYSTEM

Subject: System Analysis and Design

Code: SECD2613

Section: 07

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Github repository URL:

(https://github.com/EyadAimen/AEOA_Project1_SAD_20232024)

The screenshot shows the GitHub repository page for 'EyadAimen / AEOA_Project1_SAD_20232024'. The repository is public and has 26 commits. The main branch is 'main'. The repository contains several files and folders, including 'Module 3', 'module 1', 'module 2', 'module_5', 'README.md', 'Systems' CBA.xlsx', 'proposal.docx', '~\$oposal.docx', and '~WRL0003.tmp'. The 'README' section is visible at the bottom, showing the repository name 'AEOA_Project1_SAD_20232024'.

Repository: EyadAimen / AEOA_Project1_SAD_20232024

26 Commits

File	Commit Message	Time Ago
Module 3	Testing	5 days ago
module 1	Updated Proposal	5 days ago
module 2	module 1 and 2 done	last week
module_5	adding module 5	5 days ago
README.md	Update README.md	now
Systems' CBA.xlsx	Minor updates	13 hours ago
proposal.docx	Adding the proposed system summary	5 minutes ago
~\$oposal.docx	fixing gant chart in proposal	9 hours ago
~WRL0003.tmp	Adding the proposed system summary	5 minutes ago

README

AEOA_Project1_SAD_20232024

Introduction:

The management of the university recognized some issues in the current system related to students, teachers and staff members. So, the management decided to do some changes to solve the current problem.

This project is designed to solve this university systems issues. The main focus of the project is to deliver IS that handles the large amount of data and automates most of the processes to reduce errors.

Problem statement:

The current system suffers from frequent input errors and delaying of processes and the system output is usually similar or close to its input due to lack of critical processes. The system also lacks some essential technical hardware equipment, while depending mainly on human workforce without much computerized intervention.

Not to mention that the system is difficult to use for new users.

Issues:

1. A lot of manual processes.
2. Many inputs error.
3. Many human interventions.
4. Incorrect output.
5. Redundant storage.

Scope:

The project main focus is to solve problems in these areas (by creating computerized subsystem for each area):

1. Facility and booking management.
 - Developing the reservation and booking management by installing a new software hardware system.
2. Event management.
 - Enhancing the event management by modifying and automating some processes and develop a new user interface.
3. Student management.
 - Develop a new website for students to register for the university and use the same website to manage the requests by staff.
4. Communication and notification.
 - Add new ways to communicate with different stakeholders including teachers, students, and etc...

Objective:

1. Automate all the manual processes.
2. Minimize and detect input errors.
3. Minimize human intervention.
4. Reduce output errors.
5. Reduce redundant storage.

Proposed solution:

To develop more advanced subsystems that can function together to maximize the output of the program, reduce the input errors, speed up the processes and can ease the management processes.

Technical feasibility:

- the technical hardware and software resources in the old system are not sufficient, new hardware equipment should be purchased.
- This time the university will rely on their last year students and post graduates to develop the software rather than purchasing a new software package

Operational resources:

- The required human resources of software engineering, I.T. specialists and system analysts will be available to operate once the system is installed and the user's feedback will be obtained.
- The users are happy with the change since it will decrease the effort when doing their work, so they will use the new system.

Economical resources:

Estimated development costs:

Cost of hardware = 20000\$

Cost of software development = 10000\$

Installation cost = 5000\$.

Training cost = 5000\$.

Data conversion cost = 7500\$.

Estimated production costs:

Cost of upgrades = 500\$ PER/YEAR.

Cost of system maintenance = 2000\$ PER/YEAR.

Salaries of I.T. specialists and software engineers = 20000\$

Estimated benefits:

Increase productivity = 50000\$

Improved service = 25000\$

(For PV analysis, the discount rate is 20%)

Cost Benefit Analysis (CBA):

COSTS		Year 0	Year 1	Year 2	Year 3
Development Cost (One-time)					
Hardware	20000	20000			
Software	10000	10000			
Installation	5000	5000			
Training	5000	5000			
Data conversion	7500	7500			
Total (Development Cost)		47500			
Production Cost					
Upgrades	500		500	500	500
Maintenance	2000		2000	2000	2000
salaries	20000		20000	20000	20000
Annual Production Costs			22500	22500	22500
(PRESENT VALUE)			18750	15625	11574
ACCUMULATED COSTS			66250	81875	93449
BENEFITS		Year 0	Year 1	Year 2	Year 3
Increase roductivity	50000		50000	50000	50000
Improved service	25000		25000	25000	25000
total	75000		75000	75000	75000
(PRESENT VALUE)			62500	52083	43403
ACCUMULATED BENEFITS			62500	114583	157986
GAIN OR LOSS			-3750	32708	64537
PROFITABLE INDEX			1.358674		
Since the PI Is more than 1 it is a good investment					

Project planning:

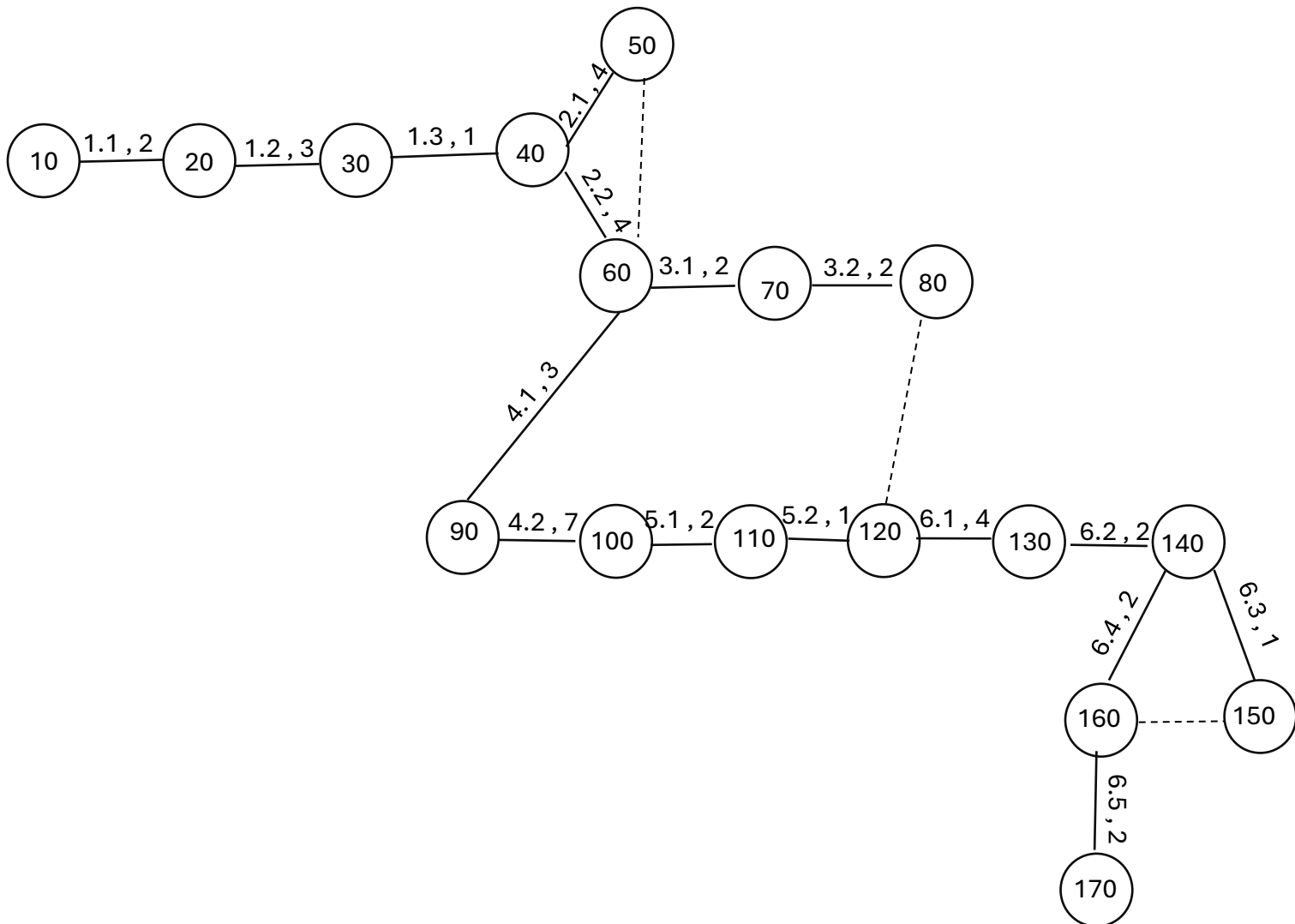
1. Human resources:

The project will have 5 teams, the first 4 teams will work on each subsystem and the last team will mainly ensure clear communication between the other teams that may interact during the project duration. Each team will have a leader that will manage them and ensure they are on track.

2. Work Break down Structure (WBS):

1. identify the Problem:	Duration in weeks	Predecessors
1.1 gather information.	2	none
1.2 Analyze the information	3	1.1
1.3 Determine the problems and objectives	1	1.2
2. Determine the resources:		1
2.1 Determine and gather the required resources.	4	1.3
2.2 Assess human resources.	4	1.3
3. hardware deployment:		2
3.1 Identify the required hardware.	2	2.1 and 2.2
3.2 Purchase the required hardware	2	3.1
4. software development:		2
4.1 Analyze the required software	3	2.1 and 2.2
4.2 Develop the required software	7	4.1
5. software testing		4
5.1 Test the new software (ensure that it is free of both syntax and logical errors)	2	4.2
5.2 Test the software on users	1	5.1
6. system installation:		5
6.1 Install the new system	4	5.2 and 3,2
6.2 Evaluate the new system	2	6.1
6.3 Get the user feedback	1	6.2
6.4 Data conversion to the new system	2	6.2
6.5 Integrate the old system with the new system	2	6.4 and 6.3

PERT diagram:



Paths:

1. Path1: 1.1 – 1.2 – 1.3 – 2.1 – 3.1 – 3.2 – 6.1 – 6.2 – 6.3 – 6.5

Length: $2 + 3 + 1 + 4 + 2 + 2 + 4 + 2 + 1 + 2 = 23$ weeks

2. Path2: 1.1 – 1.2 – 1.3 – 2.1 – 3.1 – 3.2 – 6.1 – 6.2 – 6.4 – 6.5

Length: $2 + 3 + 1 + 4 + 2 + 2 + 4 + 2 + 2 + 2 = 24$ weeks

3. Path3: 1.1 – 1.2 – 1.3 – 2.1 – 4.1 – 4.2 – 5.1 – 5.2 – 6.1 – 6.2 – 6.3 – 6.5

Length: $2 + 3 + 1 + 4 + 3 + 7 + 2 + 1 + 4 + 2 + 1 + 2 = 32$ weeks

4. Path4: 1.1 – 1.2 – 1.3 – 2.1 – 4.1 – 4.2 – 5.1 – 5.2 – 6.1 – 6.2 – 6.4 – 6.5

Length: $2 + 3 + 1 + 4 + 3 + 7 + 2 + 1 + 4 + 2 + 2 + 2 = 33$ weeks

5. Path5: 1.1 – 1.2 – 1.3 – 2.2 – 3.1 – 3.2 – 6.1 – 6.2 – 6.3 – 6.5

Length: $2 + 3 + 1 + 4 + 2 + 2 + 4 + 2 + 1 + 2 = 23$ weeks

6. Path6: 1.1 – 1.2 – 1.3 – 2.2 – 3.1 – 3.2 – 6.1 – 6.2 – 6.4 – 6.5

Length: $2 + 3 + 1 + 4 + 2 + 2 + 4 + 2 + 2 + 2 = 24$ weeks

7. Path7: 1.1 – 1.2 – 1.3 – 2.2 – 4.1 – 4.2 – 5.1 – 5.2 – 6.1 – 6.2 – 6.3 – 6.5

Length: $2 + 3 + 1 + 4 + 3 + 7 + 2 + 1 + 4 + 2 + 1 + 2 = 32$ weeks

8. Path8: 1.1 – 1.2 – 1.3 – 2.2 – 4.1 – 4.2 – 5.1 – 5.2 – 6.1 – 6.2 – 6.4 – 6.5

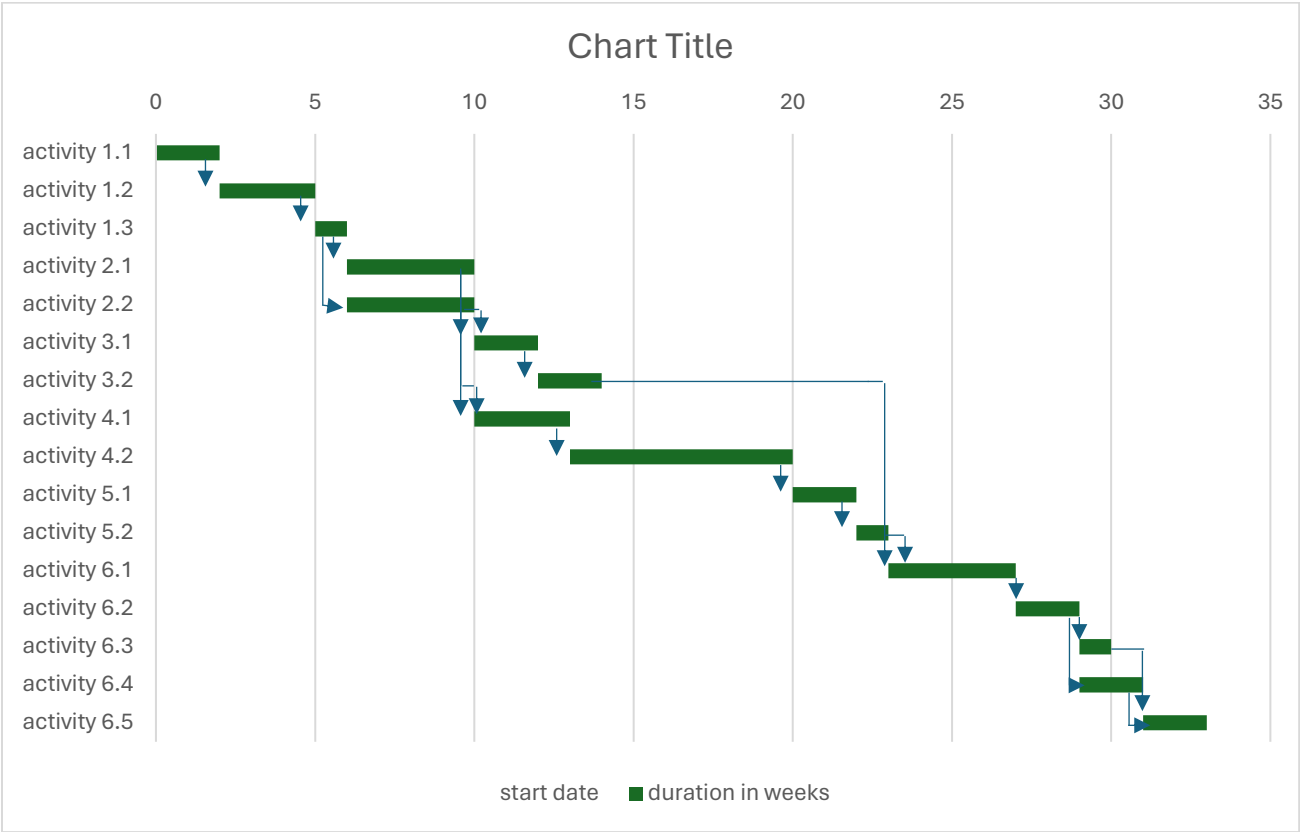
Length: $2 + 3 + 1 + 4 + 2 + 2 + 4 + 2 + 2 + 2 = 33$ weeks

Critical paths are:

1.1 – 1.2 – 1.3 – 2.1 – 4.1 – 4.2 – 5.1 – 5.2 – 6.1 – 6.2 – 6.4 – 6.5

1.1 – 1.2 – 1.3 – 2.2 – 4.1 – 4.2 – 5.1 – 5.2 – 6.1 – 6.2 – 6.4 – 6.5

With lengths of 33 weeks



Proposed systems summary:

The proposed system will solve major problems in the current university system. It also will improve the performance (decreasing time for data retrieval, process, and transmission), improve reputation and decrease the costs of current system. Also, the Profitable Index (PI) of the proposed system is above 1 so it will be profitable for the university.