

CHAPTER 1: INTRODUCTION

A. BACKGROUND OF THE ORGANIZATION:

Independent University, Bangladesh (IUB) was established in 1993. It is one of the oldest Private Universities in Bangladesh, currently has more than an estimation of 7,048 undergraduate and graduate students and over 10,455 alumni. This student population is lately predicted to grow at about 10% annually. Since its inception, IUB has shown remarkable outcomes in producing graduates with marketable skills by being sincere, staying disciplined and up to date with the on-going curriculum and progress system.

IUB has five main school distinctions within under its name and they are as follows:

1. Business & Entrepreneurship
2. Engineering, Technology & Sciences
3. Environment and Life Sciences
4. Liberal Arts & Social Sciences
5. Pharmacy and Public Health.

IUB also provides massive percentage based tuition fee waivers and scholarships for a huge proportion of this students, more than most private universities of the country. This greatly helps the financial guarantors of the students to keep up with the expenses of studies.

Furthermore, IUB is also constantly developing and improving its lab facilities and flourishing on its curriculum according to current corporate world demands, greatly diminishing the outraging gap between academic curriculum and the professional job market.

B. BACKGROUND OF THE PROJECT:

Currently, the student marking monitoring system of IUB students are done completely manually through the means of excel files and previously determined PLOs and COs from

the IEB, UGC and mapped by the respective department of each major. The stakeholders, department or any higher authorities does not have an automated system through which they can visualize the performance data of the students throughout the semesters. So we have to change that to an automated process for everybody's convenience.

C. OBJECTIVE OF THE PROJECT:

The Student Performance Monitoring System (SPMS) that we are going to build will get all student performance data from the respective faculties and departments and vividly summarize and present all the performance data including various sorts of graphs to make it crystal clear for the Stakeholders and all the higher authorities to understand without much effort. The faculties no longer have to create vast excel sheets representing all the marks and CO/PLO achievements of each student manually, instead the faculty will just have input the marks of each student onto the SPMS and it will automatically do all the work for the faculty, making it tons more easier, faster and less hectic for the individuals. As it is all done by computer systems, the process will be instantaneous, unlike a very lengthy process from before, and all the stakeholders that has access to the system will be able to see the data right away without any issues.

D. SCOPE OF THE PROJECT:

As we have done a thorough analysis of the existing marking and evaluation system, and found out that there are several issues within the entire process which can lead to serious amounts waste in time and resources. Our proposed Web Application system known as the Student Performance Monitoring System (SPMS) will eradicate all these unnecessary consumption of resources and throw them to be done automatically at the system backend. The system will include a Relational Database Management System (RDBMS) server to store and edit/update all the performance information of the student in the

enrolled courses. The Web Application will have seamless and intuitive User Panels or Graphical User Interfaces (GUIs) to make it easily operable for every stakeholder involved. Each individual user type will be able to observe and download all the student data in the way that is visualized extremely vividly and also that fits most suitable for them to understand. Moreover, all the data will be stored on server protected by high tier cyber security means, and each user type will have access to the specific data that is relevant to only them in order to maintain the best quality privacy for every user or stakeholder.

CHAPTER 2: REQUIREMENT ANALYSIS

A. Existing Business System:

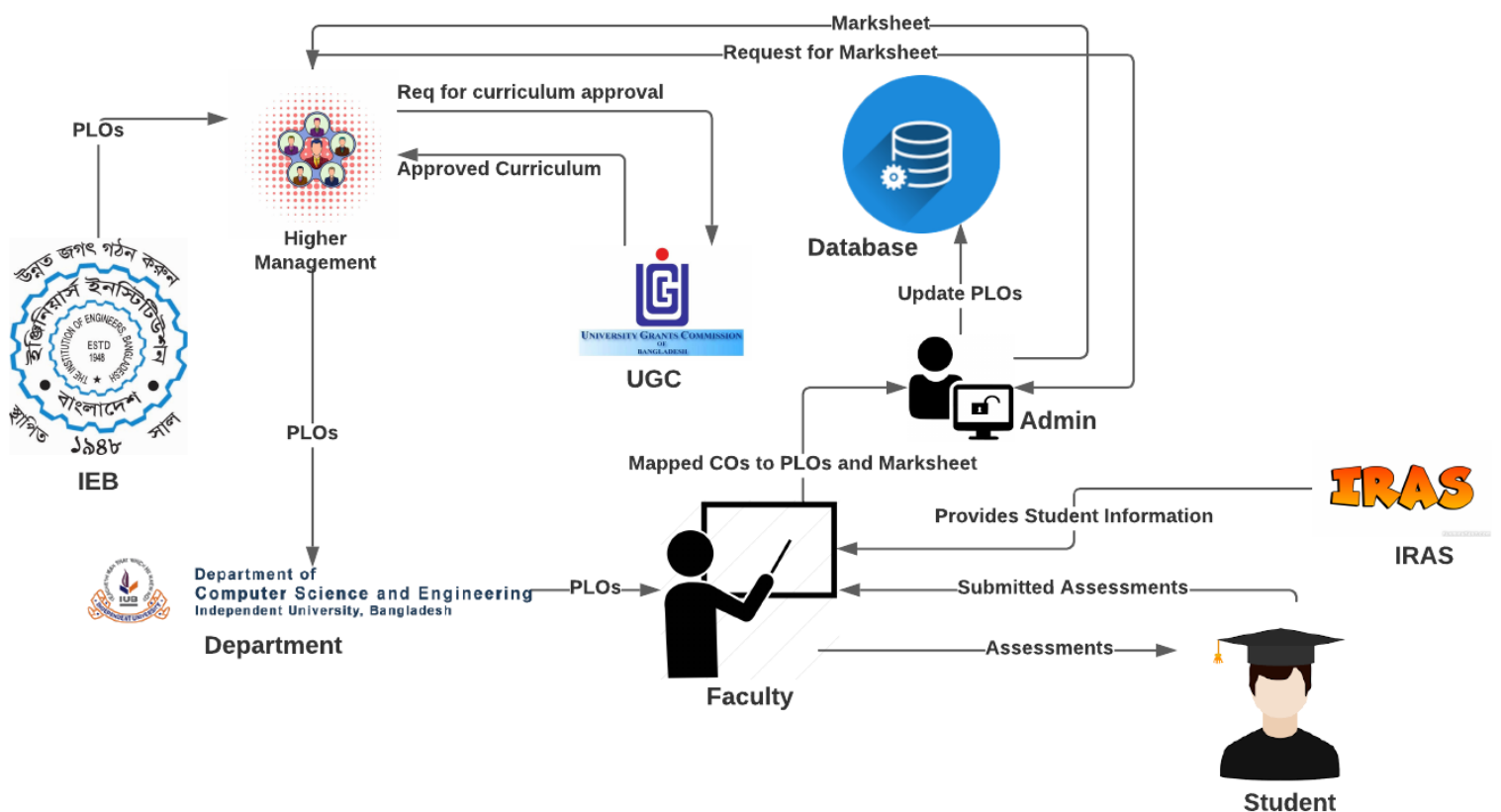


Figure 1 Rich Picture (AS_IS)

B. Six Element Analysis of Existing Business:

process	Human	Non-computing Hardware	Computing Hardware	Software	Databases	Communication & Network
STUDENT'S ASSESSMENT	<p>1.Faculty :</p> <p>a) Create Question Paper.</p> <p>a) Takes exam of students in the form of quizzes, midterm and final term by providing questions.</p> <p>b) Create assessment report.</p> <p>c) Send the assessment report to admin</p> <p>2.Student:</p> <p>a) Answers the questions provided by Faculty.</p> <p>b) submit the answer</p>	<p>Paper:</p> <p>a) Used to prepare hardcopy of question papers that are used to assess students in exams.</p> <p>b) Used to prepare hardcopy assessment report.</p> <p>c) Used to provide hardcopy of answer script to the faculty.</p> <p>2.Stationery:</p> <p>a) Used to check hardcopy of answer script provided by students.</p> <p>b) Used to fill</p>	<p>1.Computer:</p> <p>a) Used to prepare softcopy of question papers that are used to assess students in exams.</p> <p>b) Used to prepare softcopy assessment report.</p> <p>c) Used to prepare softcopy of answer script to the faculty.</p> <p>d) Used to store all softcopy of questions, answer scripts and assessment reports.</p> <p>2.Printer:</p>	<p>1.Microsoft Word:</p> <p>a) Used to prepare softcopy of question papers that are used to assess students in exams.</p> <p>b) Used to prepare softcopy of answer script to faculty.</p> <p>2.Microsoft Excel :</p> <p>a) Used to prepare softcopy assessment report.</p> <p>3.Gmail :</p> <p>a) Used to send</p>	<p>1.Google Drive:</p> <p>a) Used to store and backup all softcopy of questions, answer scripts and assessment reports on the internet.</p>	<p>1.ISP:</p> <p>a) Provides Internet service so that the use of Gmail, Google Drive and Dropbox is possible.</p>

	<p>paper to the faculty.</p> <p>3.Admin :</p> <p>a) Receives and stores assessment report of students provided by Faculty.</p> <p>b) Store the marks of the student in the Database.</p>	<p>answer scripts that are to be provided to faculty.</p> <p>3.Store Room:</p> <p>a) Used to store all hardcopy of questions, answer scripts and assessment reports.</p>	<p>a) Used to print the questions on to paper.</p> <p>b) Used to print the assessment report.</p> <p>c) Used to print the answer script.</p>	<p>softcopy of questions, answer scripts and assessment reports to designated personnel.</p>		
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Processes	Human	Non-computing Hardware	Computing Hardware	software	Database	Communication & Network
Curriculum Approval by UGC	1.Higher Management: a) Forms a committee of faculty to prepare a curriculum in accordance to the guideline provided by UGC. b) Receives proposed curriculum provided by the designated faculty committee. c) Requests UGC for approval of curriculum. d. Receives approval or necessary correction details from UGC. e) Sends confirmation of approved/corrected curriculum to	1.Paper: a) Used to prepare hardcopy of faculty committee details, UGC guidelines, proposed/corrected curriculum, approved curriculum. 2.Stationery: a) Used for handwritten mind mapping in regards to faculty committee details, proposed/corrected curriculum, approved curriculum. 3.Store Room: a) Used to store hardcopy of approved curriculum.	1.Computer: a)Used to receive, store and analyze UGC guidelines. b) Used to prepare and store softcopy of faculty committee details, proposed/corrected curriculum, and approved curriculum. 2.Printer: a) Used to print hardcopy of faculty committee details, UGC	1.PDF Reader: a) Used to view and store the softcopy of received guidelines from UGC, faculty committee details, proposed/corrected curriculum and approved curriculum in PDF format. 2.Microsoft Word: a) Used to prepare, view and store softcopy of faculty committee details, proposed/corrected curriculum and approved curriculum in word format. 2.Microsoft Excel: a) Used to prepare softcopy for the	1.Google Drive: a) Used to store and backup all softcopy of faculty committee details, UGC guidelines, proposed/corrected curriculum, approved curriculum on the internet.	1.ISP: a) Provides Internet service so that the use of Gmail, Google Drive and Dropbox is possible.

	<p>admin for storing.</p> <p>2.UGC: a)Receives request from higher management for approval of curriculum. b) Sends approval or necessary correction details of curriculum to higher management. c) Provides guidelines to higher management for preparing the curriculum.</p>		<p>guidelines, proposed/corrected curriculum, approved curriculum.</p>	<p>mapping of CO to PO while creating courses for the curriculum. 3.Gmail : a)Used to send softcopy of faculty committee details, UGC guidelines, proposed/corrected curriculum, approved curriculum to designated personnel.</p>		
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Processes	Human	Non-computing Hardware	Computing Hardware	software	Database	Communication & Network
Collecting PLOs from IEB	<p>1. IEB: a) Send PLOs to higher management.</p> <p>2.Higher Management: a) Receives PLOs from IEB b) Send PLOs to the department.</p> <p>3.Department: a)Send the PLOs to the Faculty</p> <p>4.Faculty: a) Receives PLOs from the Department.</p>	<p>1.Paper: a) Used to prepare hardcopy Of the PLOs</p> <p>2.Stationery: a) Used for handwritten assessment to create PLO report.</p> <p>3.Store room: a) Used to store hardcopy of PLO report.</p>	<p>1.Computer: a) Used to prepare and store softcopy of PLO report.</p> <p>2.Printer: a) Used to print hardcopy of PLO report</p>	<p>1.PDF Reader: a) Used to view and store the softcopy of PLO report</p> <p>2. Microsoft Excel: a) Used to prepare, view and store softcopy of PLO report in Excel Shit.</p> <p>3.Gmail: a. Used to send/receive softcopy of PLOs from IEB to Higher management to faculty to Admin personnel.</p>	<p>1.Google Drive: a) Used to store and backup all softcopy of PLO Report on the internet .</p>	<p>1.ISP: a) Provides Internet service so that the use of Gmail, Google Drive and Dropbox is possible.</p>

Process	Human	Non-computing Hardware	Computing Hardware	software	Databases	Communication & Network
Mapping of COs to PLOs	<p>1.Faculty Member a) Maps the COs from PLOs based on the syllabus covered in the course. b) Sends the mapped COs to the admin through email.</p> <p>2.Admin a) Receives the mapped COs from the faculty member. b) Updates it in the excel file.</p>	<p>Paper a) Used if the faculty member or the admin wishes to print out the mapped COs.</p>	<p>1.Computer a) Used to edit the COs' Excel file.</p> <p>2.Printer a) Used to print out the COs for hardcopy storage backup in case something happens to the digital version.</p>	<p>1.Microsoft Excel: a) Used to store the mapped COs.</p> <p>2.Web Browser: a) To send and receive the COs through email.</p>	<p>1.Google Drive: a) Contains the mapped COs.</p> <p>2.Hard Copy storage: a) Contains the hardcopy version of the COs' Excel file for backup.</p>	<p>1.ISP: a) Provides Internet service so that the use of Gmail, Google Drive and Dropbox is possible.</p>

C. Process Diagram (AS-IS):

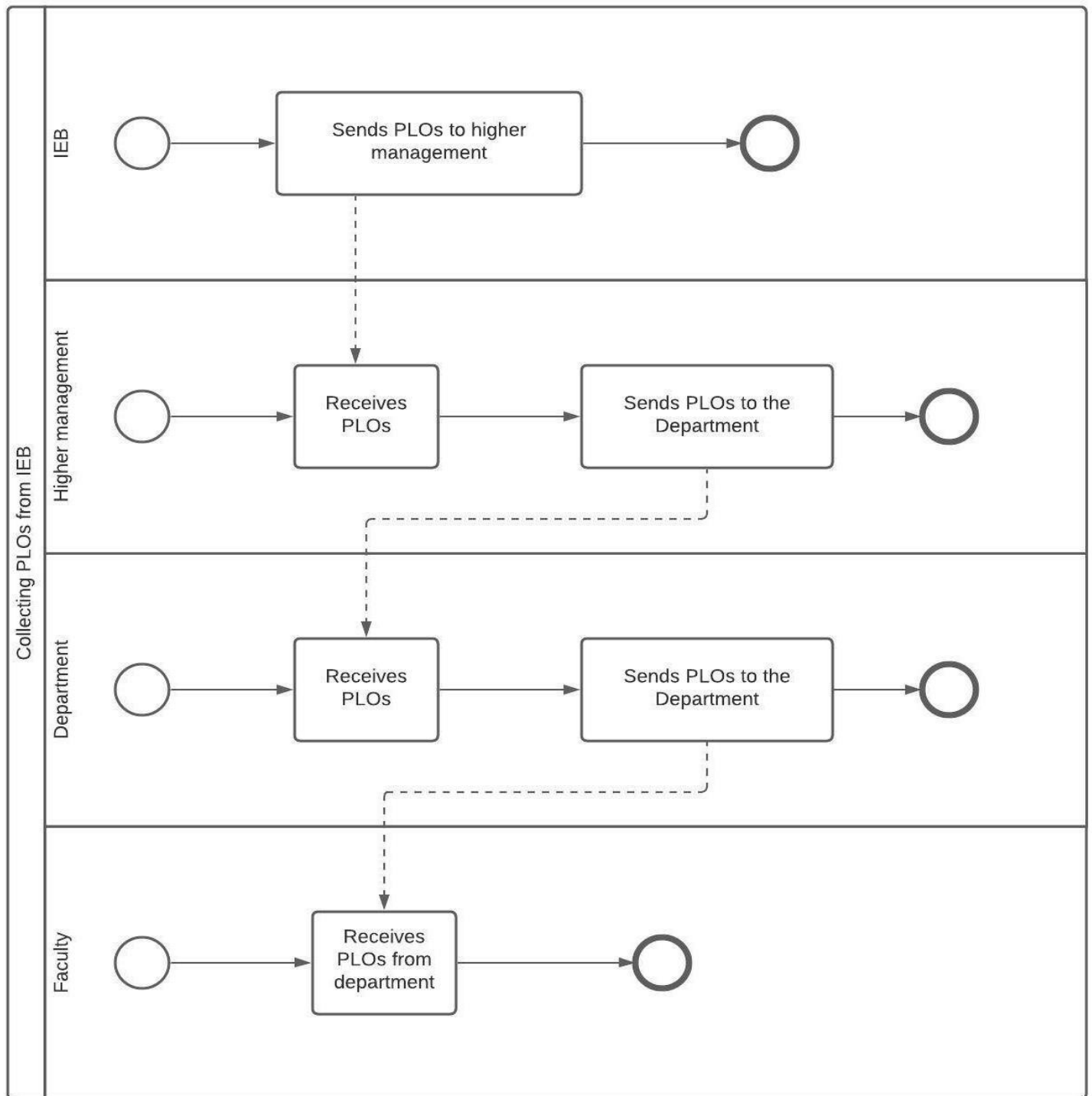


Figure 2: Collecting PLOs from IEB

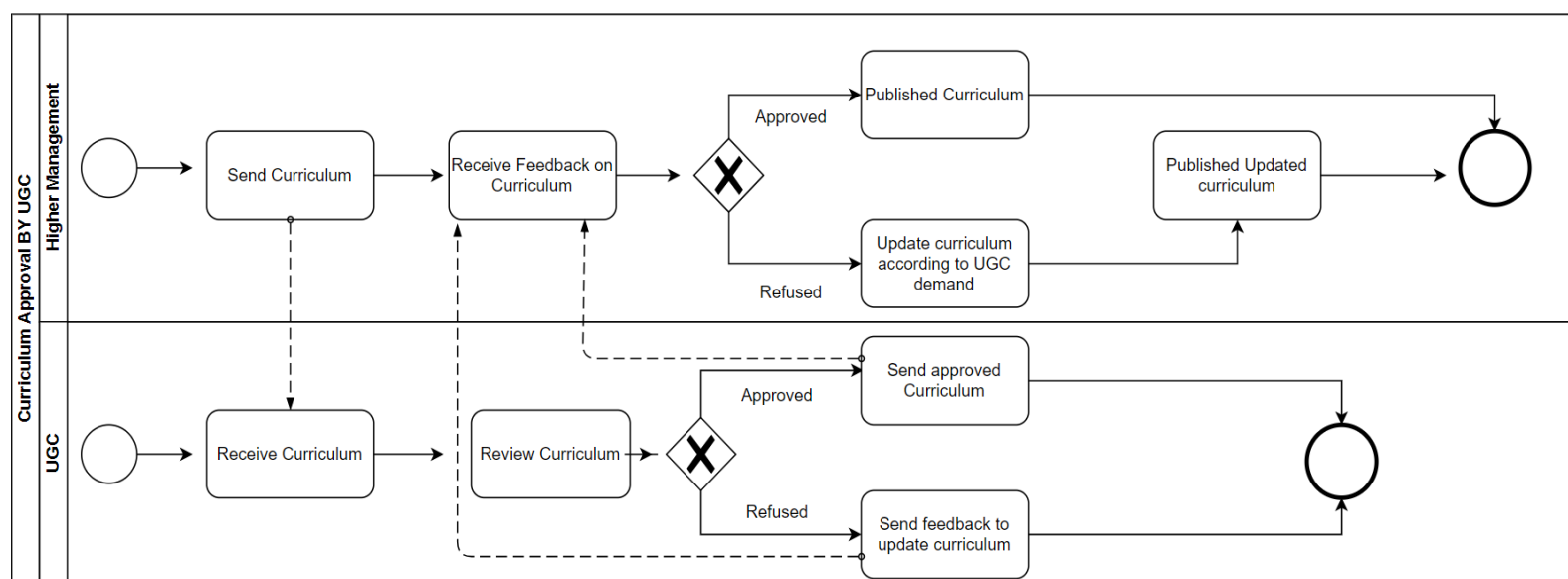


Figure 5 Curriculum Approval by UGC

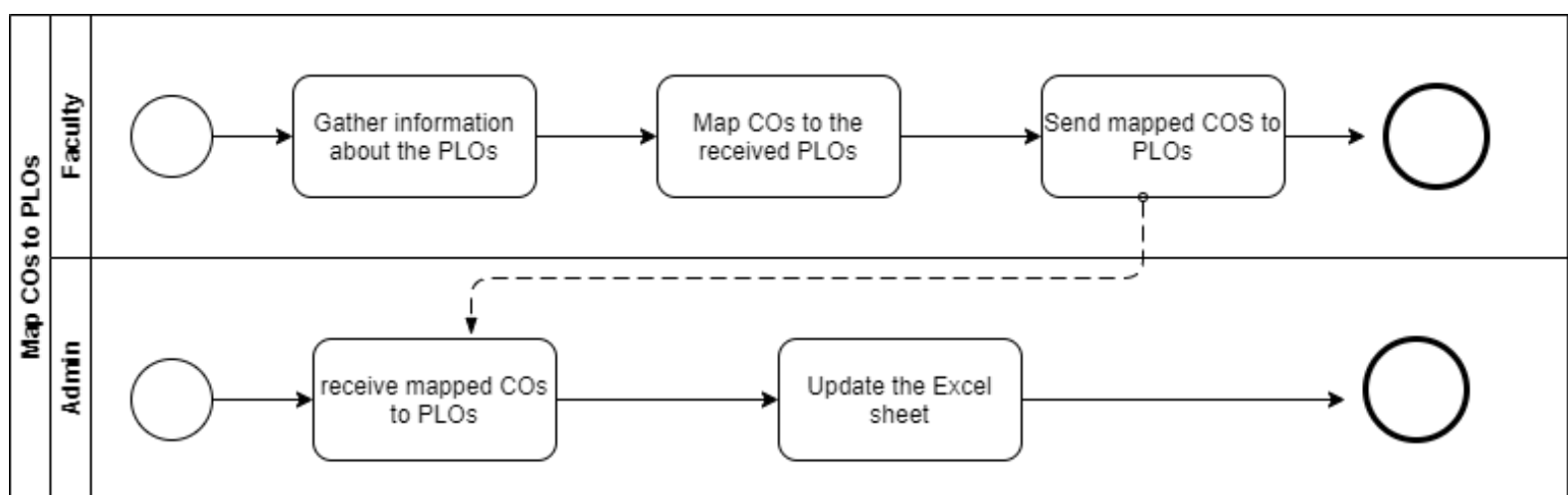


Figure 4 Mapping of COs to PLOs

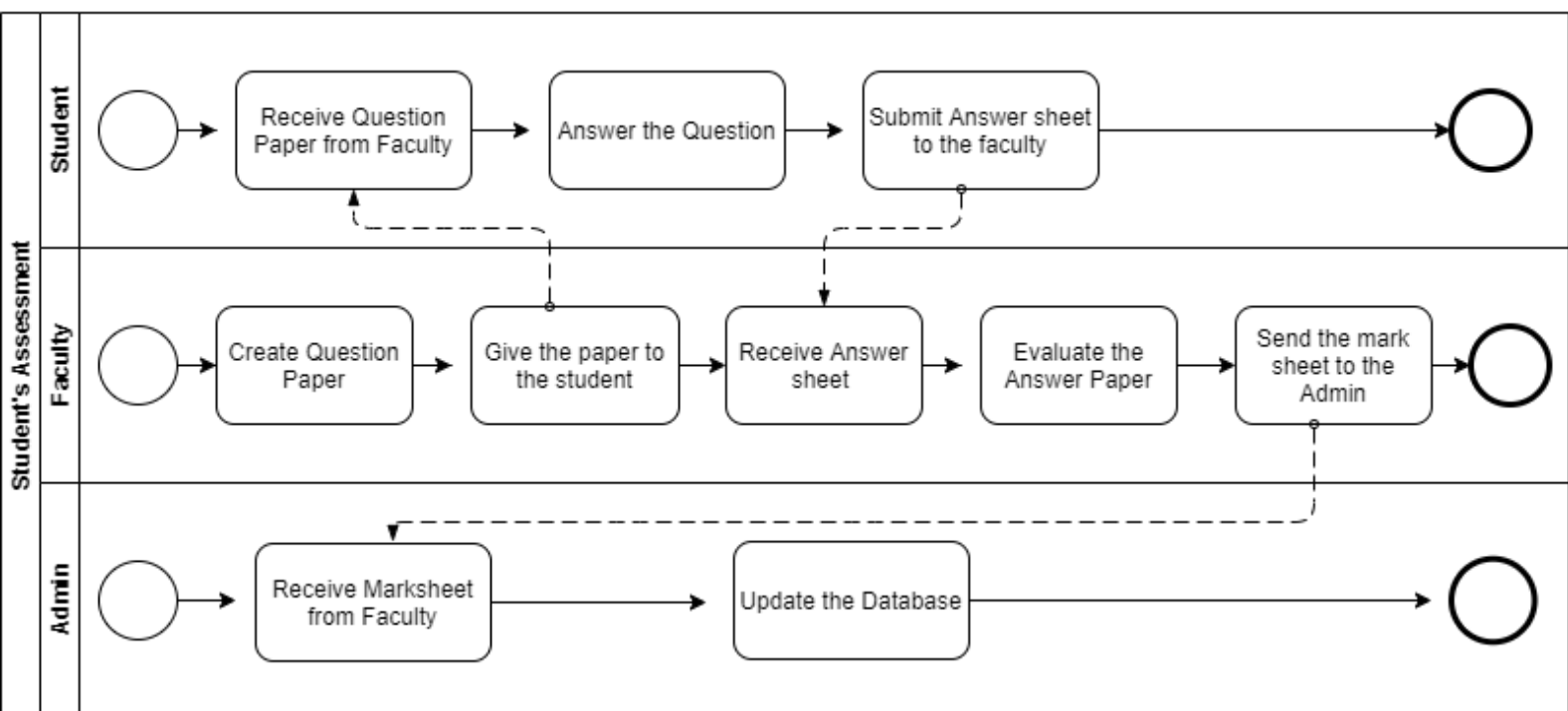


Figure 3 Assessment of Students

D. Problem Analysis of the Existing System:

Process Name	Stakeholders	Concerns (Problems)	Analysis (Reason of the Problem)	Proposed Solution
STUDENT'S ASSESSMENT	1.Faculty 2.Admin	The Faculty members have to provide mark sheet to Admin and then the Admin enters the mark sheet into the Database. This process becomes too time consuming and uses up a lot of extra resources.	Since the faculty has to send the mark sheet all the way to the admin before getting uploaded to the database, it takes up much of the time and also uses unnecessary resources.	Our software allows the faculty to directly update the marks to the database. Hence, the use or participation of admin is not required.
PLO/CO Achievement Analysis	1.Faculty	The CO, PLO achievement analysis has to be done by the faculty by manually entering marks of each student to finalize whether they pass or fail. The analysis has to be sent to the admin to be uploaded to the database.	The entire CO, PLO achievement analysis table and the passing of the data is extremely time consuming.	Our software is designed to do the entire CO, PLO achievement analysis by itself. All the faculty has to do is enter the marks in the desired field.

E. Rich Picture of Proposed System:

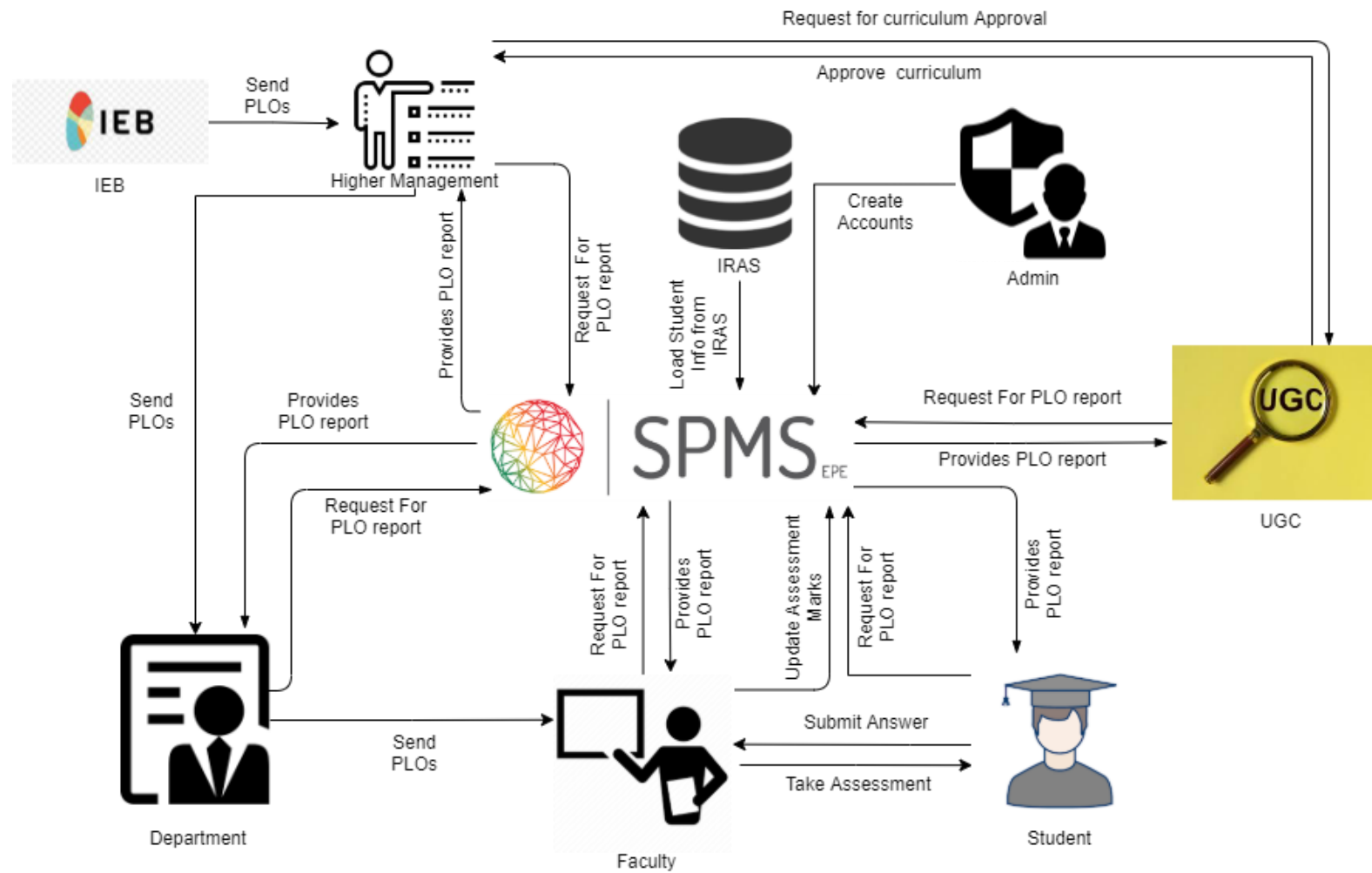


Figure 6 Rich Picture (TO-BE)

F. Six Element Analysis of Proposed System:

Process	System Roles					
	Human	Non-Comp Hardware	Computing Hardware	Software	Database	Network & Communication
STUDENT'S ASSESSMENT	1.Faculty : a) Create Question Paper. b) Takes exam of students in the form of quizzes, midterm and final term by providing questions. c) Create assessment report. d) Updates assessment marks directly to SPMS 2.Student: a) Answers the questions provided by Faculty. b) submit the answer paper to the faculty.	1.Paper: a) Used to prepare hardcopy of question papers that are used to assess students in exams. b) Used to prepare hardcopy assessment report. c) Used to provide hardcopy of answer script to the faculty. 2.Stationer y: a) Used to check hardcopy of answer script provided by students. b) Used to fill answer scripts that are to be provided to faculty.	1.Computer: a) Used to prepare softcopy of question papers that are used to assess students in exams. b) Used to prepare softcopy assessment report. c) Used to prepare softcopy of answer script to the faculty. d) Used to store all softcopy of questions, answer scripts	1.Microsoft Word: a) Used to prepare softcopy of question papers that are used to assess students in exams. b) Used to prepare softcopy of answer script to faculty. 2.Microsoft Excel : a) Used to prepare softcopy assessment report. 3.Gmail : a) Used to send softcopy of questions, answer scripts and assessment reports to designated personnel.	1.Google Drive: a) Used to store and backup all softcopy of questions, answer scripts and assessment reports on the internet. 2. SPMS - Updates and stores mark sheet in MySQL	1.ISP: a) Provides Internet service so that the use of Gmail, Google Drive and SPMS is possible.

		3.Store Room: a) Used to store all hardcopy of questions, answer scripts and assessment reports.	and assessment reports. 2.Printer: a) Used to print the questions on to paper. b) Used to print the assessment report. c) Used to print the answer script.			
Curriculum Approval by UGC	1.Higher Management: a) Forms a committee of faculty to prepare a curriculum in accordance to the guideline provided by UGC. b) Receives proposed curriculum provided by the designated faculty committee. c) Requests UGC	1.Paper: a) Used to prepare hardcopy of faculty committee details, UGC guidelines, proposed/corrected curriculum, approved curriculum. 2.Stationery: a) Used for handwritten mind mapping in regards to faculty committee details, proposed/corrected curriculum, approved	1.Computer: a)Used to receive, store and analyze UGC guidelines. b) Used to prepare and store softcopy of faculty committee details, proposed/corrected curriculum,	1.PDF Reader: a) Used to view and store the softcopy of received guidelines from UGC, faculty committee details, proposed/corrected curriculum and approved curriculum in PDF format. 2.Microsoft Word: a) Used to prepare, view and store softcopy of faculty	1.Google Drive: a) Used to store and backup all softcopy of faculty committee details, UGC guidelines, proposed/corrected curriculum, approved curriculum on the internet.	1.ISP: a) Provides Internet service so that the use of Gmail, Google Drive is possible.

	<p>for approval of curriculum.</p> <p>d. Receives approval or necessary correction details from UGC.</p> <p>e) Sends confirmation of approved/corrected curriculum to admin for storing.</p> <p>2.UGC:</p> <p>a)Receives request from higher management for approval of curriculum.</p> <p>b) Sends approval or necessary correction details of curriculum to higher management.</p> <p>c) Provides guidelines to higher management for preparing the curriculum.</p>	<p>curriculum.</p> <p>3.Store Room:</p> <p>a) Used to store hardcopy of approved curriculum.</p>	<p>and approved curriculum.</p> <p>2.Printer:</p> <p>a) Used to print hardcopy of faculty committee details, UGC guidelines, proposed/corrected curriculum, approved curriculum.</p>	<p>committee details, proposed/corrected curriculum and approved curriculum in word format.</p> <p>2.Microsoft Excel:</p> <p>a) Used to prepare softcopy for the mapping of CO to PO while creating courses for the curriculum.</p> <p>3.Gmail :</p> <p>a)Used to send softcopy of faculty committee details, UGC guidelines, proposed/corrected curriculum, approved curriculum to designated personnel.</p>		
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Collecting PLOs from IEB	<p>1. IEB: a) Send PLOs to higher management.</p> <p>2.Higher Management: a) Receives PLOs from IEB b) Send PLOs to the department .</p> <p>3.Department: a)Send the PLOs to the Faculty</p> <p>4.Faculty: a) Receives PLOs from the Department.</p>	<p>1.Paper: a) Used to prepare hardcopy Of the PLOs</p> <p>2.Stationery: a) Used for handwritten assessment t to create PLO report.</p> <p>3.Store room: a) Used to store hardcopy of PLO report.</p>	<p>1.Computer: a) Used to prepare and store softcopy of PLO report.</p> <p>2.Printer: a) Used to print hardcopy of PLO report</p>	<p>1.PDF Reader: a) Used to view and store the softcopy of PLO report</p> <p>2. Microsoft Excel: a) Used to prepare, view and store softcopy of PLO report in Excel Shit.</p> <p>3.Gmail: a. Used to send/receive softcopy of PLOs from IEB to Higher management to faculty to Admin personnel.</p>	<p>1.Google Drive: a) Used to store and backup all softcopy of PLO Report on the internet.</p>	<p>1.ISP: a) Provides Internet service so that the use of Gmail, Google Drive is possible .</p>
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Getting student information for courses enrolled			Server Computer – SPMS sends request to IRAS for student information on courses enrolled each semester through API.	1.SPMS: a) Sends request to IRAS for Student information on courses enrolled each semester through API. 2. IRAS: a) Sends requested information to SPMS.	1.MySQL : Stores Student information on courses enrolled each semester	1.ISP: SPMS and IRAS requires internet which is provided by ISP.
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Viewing the required PLO Report	<p>1.UGC a) Request for information on PLO report b) Get the information from the system.</p> <p>2.Higher Management a) Request for information on PLO report b) Get the information from the system.</p> <p>3.Department a) Request for information on PLO report b) Get the information from the system.</p> <p>4.Faculty a) Request for information on PLO report b) Get the information from the system.</p> <p>5.Student a) Request for information on PLO report b) Get the information from the system.</p>		<p>1.Computer: Use to browse PLO report from SPMS.</p> <p>2.Phone : Use to browse PLO report from SPMS</p>	<p>1.SPMS: Prepare the required PLO report for stack holders</p> <p>2. Web Browser: Access the SPMS website</p>	<p>1. MY SQL: Store the necessary data which are used to made the POL report.</p>	<p>1. ISP: Provides Internet service to the Stack Holders so that they can access the information.</p>
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G. Process Diagram (TO-BE):

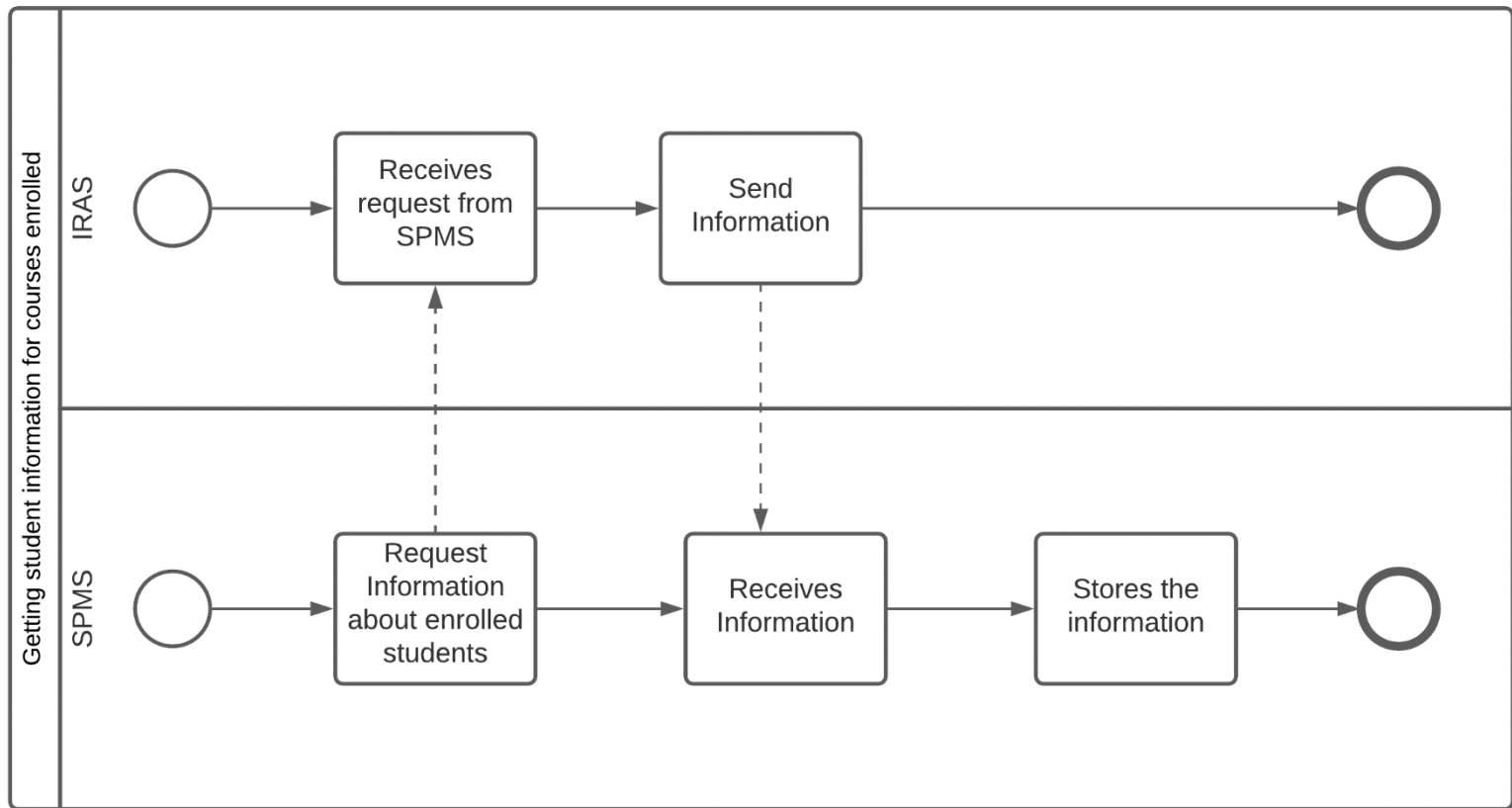


Figure 7: Getting Student Information

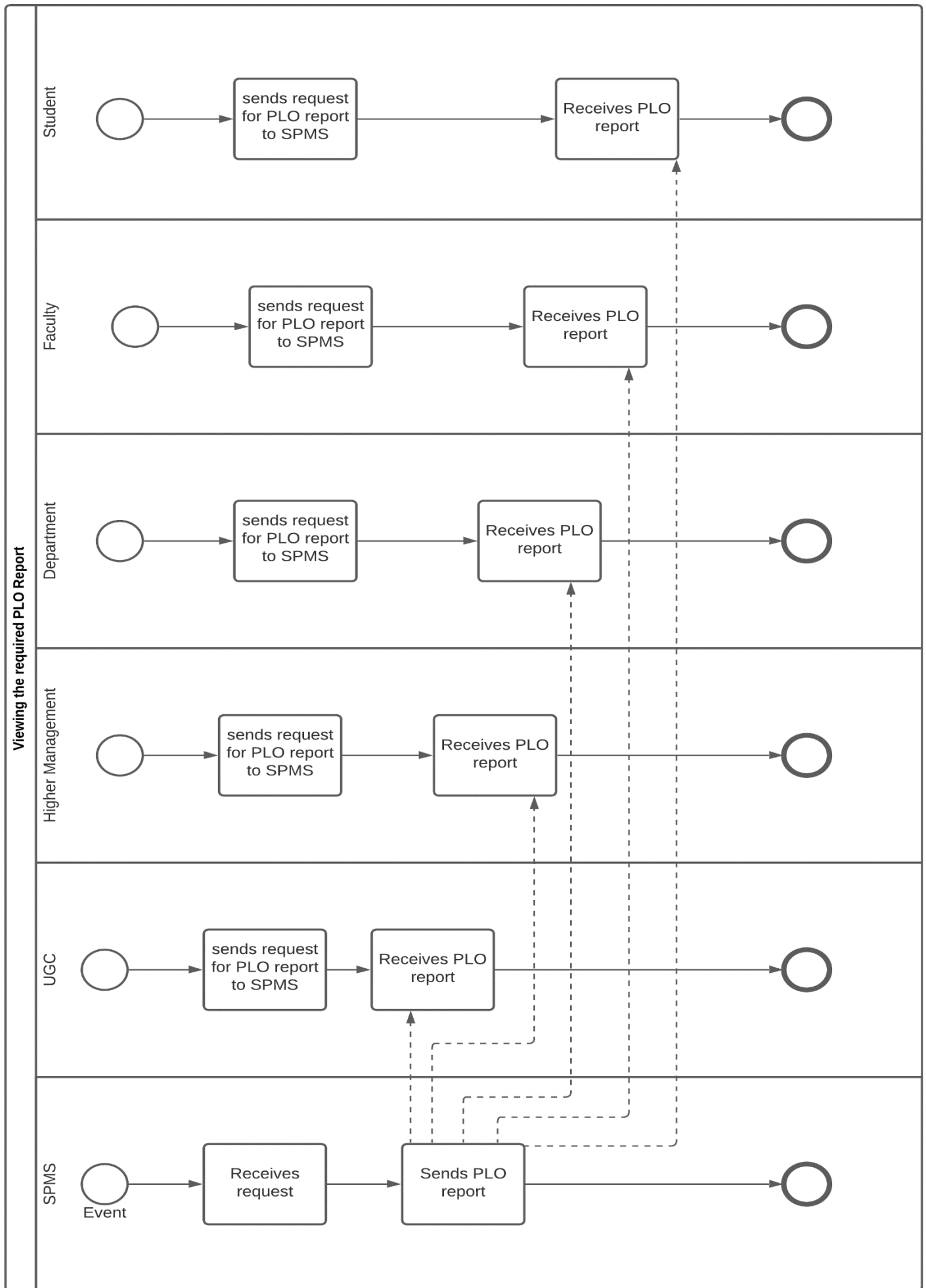


Figure 8 Viewing PLO Reports

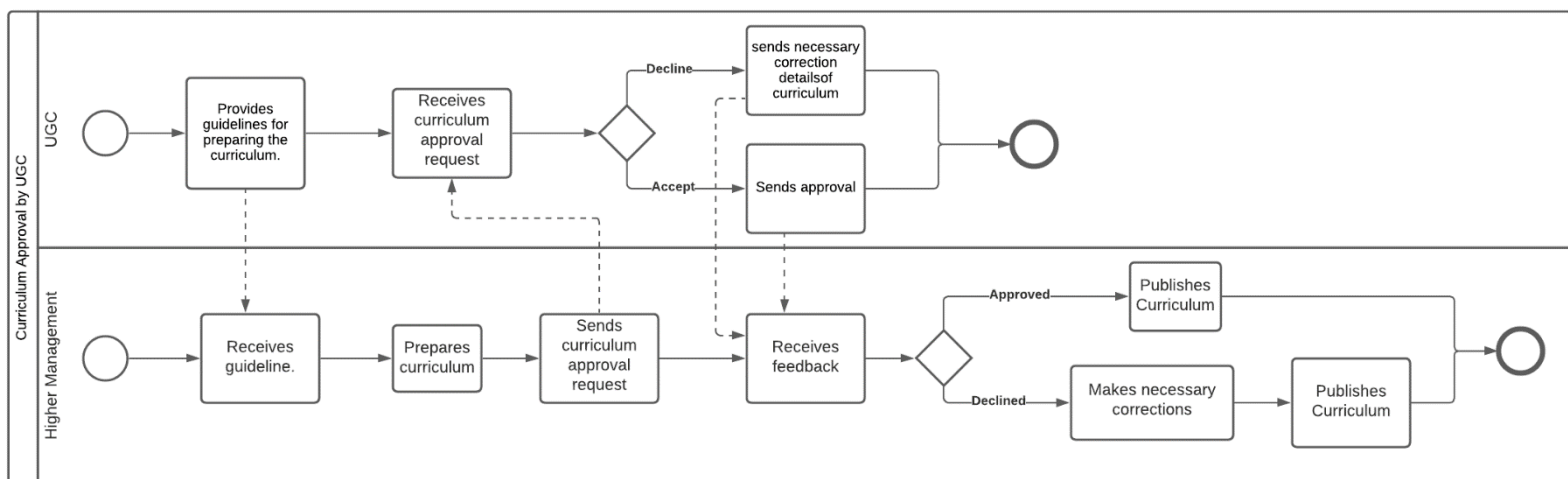


Figure 10 Assessment of Students

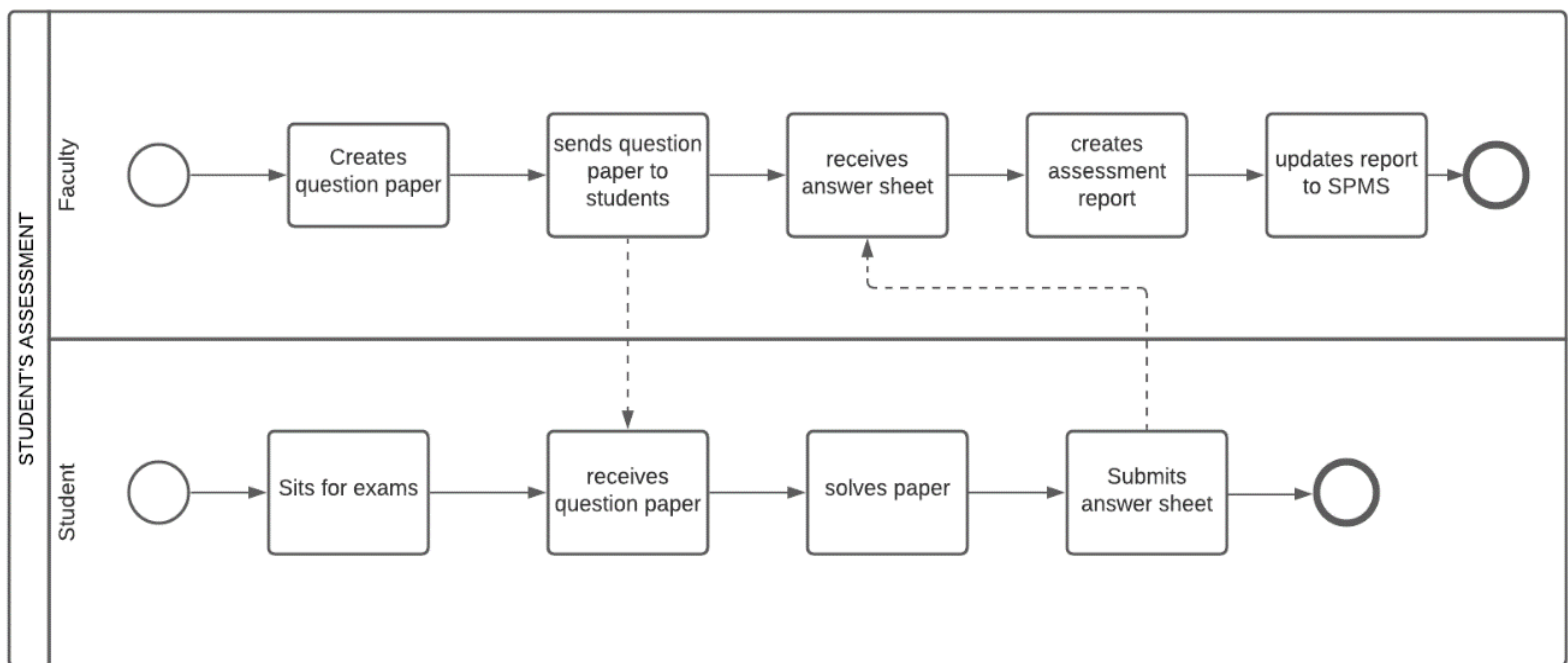


Figure 9 Curriculum Approval by UGC

