Web-a-thon 2022

Work allocation Automation Portal for an Institute

Consider your client is running an educational institute who wants to automate the work allocation process. Find the client's abstract requirement below. Feel free to assume any missing/required information, as you cannot clarify with your client immediately.

Create and deliver a working portal to automate work allocation process, in which two/three courses will be allocated to each faculty based on their preferences and Courses required based on Students' Wishlist.

End Users of the portal:

1. Admin
2. Faculty

In admin login, expected functionalities are as follows:

Admin Page 1: "Upload Courses"

Upload Courses details in an excel sheet, which needs to be parsed and stored in the database.
Sample data:

Course Code	Course Name	Lecture hours	Tutorial hours	Practical hours	J Project hours	Credits
BCSE103E	Computer Programming Java	1	0	4	0	3
BCSE202L	Data Structures and Algorithms	3	0	2	0	4
CSE1016	Deep Learning: Principles and Practices	2	0	2	0	3
CSE2012	Design and analysis of algorithms	3	0	2	0	4
CSE3061	Artificial Intelligence for Cyber Security	3	0	0	4	4
CSE3501	Information Security Analysis and Audit	2	0	2	4	4
CSE4056	Intelligent Multi Agent and Expert systems	2	0	0	4	3
BCSE205L	Computer Architecture and Organization	3	0	0	0	3

Admin Page 2: "View and Add Courses"

In view page, fetch all courses from the database and display. Provide option for admin to add any one course, if required.

Admin Page 3: "Wish list data"

Assume that admin has already collected wish list from SCOPE students for the upcoming Semester, which needs to be uploaded in the portal. If any course has less than 10 wishes, it should be ignored. Parse and store in database this info as well as number of batches required. Capacity for each batch is 70 students.

Sample date in the sheet:

Course Code	Course Name	No of Wishlist received
BCSE103E	Computer Programming Java	1400
BCSE202L	Data Structures and Algorithms	1260
CSE1016	Deep Learning: Principles and Practices	700
CSE2012	Design and analysis of algorithms	8
CSE3061	Artificial Intelligence for Cyber Security	700
CSE3501	Information Security Analysis and Audit	700
CSE4056	Intelligent Multi Agent and Expert systems	420
BCSE205L	Computer Architecture and Organization	1680

Admin Page 4: “Faculty info”

Upload Faculty details in an excel sheet, which needs to be parsed and stored in the database. Provide option in the portal for admin to add any one faculty, if required.

Sl no	Emp id	Name	Designation	Phno	School	Email
1	10001	Faculty1	Associate Professor	9191929293	Scope	10001@vit.ac.in
2	10002	Faculty2	Professor	8123912346	Scope	10002@vit.ac.in
3	10003	Faculty3	Assistant Professor	9191777293	Scope	10003@vit.ac.in
4	10004	Faculty4	Assistant Professor	8673912346	Scope	10004@vit.ac.in
5	10005	Faculty5	Associate Professor	8612312312	Scope	10005@vit.ac.in
6	10006	Faculty6	Associate Professor	8246535669	Scope	10006@vit.ac.in
7	10007	Faculty7	Professor	7956803179	Scope	10007@vit.ac.in
8	10008	Faculty8	Assistant Professor	7667070688	Scope	10008@vit.ac.in
9	10009	Faculty9	Associate Professor	7377338198	Scope	10009@vit.ac.in
10	10010	Faculty10	Assistant Professor	7087605707	Scope	10010@vit.ac.in

Faculty Login:

When a faculty login to the portal, the following functionalities should to be there.

Faculty Page 1: “Course Preferences”

Once Admin uploads “Students’ Wish list data” in Admin Page 3, faculty gets to view the course list and provide five preferences.

Once preference list is submitted by the faculty, immediately pop up the preferred courses, and store the choices in the database.

Admin Login:
Admin Page 5: “View Faculty preferences”

Admin confirms whether all faculty submitted their preferences and views the same in the portal. Display pending faculty and filled in faculty list, column wise along with respective email ids. Provide send email option to the pending faculties to remind them to submit the preference immediately.

Admin Page 6: “Allocation”

Once confirmed that all faculties submitted their preferences, based on the below conditions, automate the process and allocate two/three courses to each faculty, based on their Designation, empid.

To ease the process,

a. sort the faculty info based on their designation, order in which allocation needs to be provided is
   Professor, Associate Professor, Assistant Professor.
b. Count the number of preferences obtained for each course from faculties.
c. Preference portal will collect the responses from faculties based on Designation hierarchy, immediately allocate the courses as well as disable the course for the down level in the hierarchy [ie., display only unallocated courses to the next level faculties].
   During allocation process, portal will be available only to
   Professors on Day1
   Associate professors on Day2
   Assistant professors on Day3.
   Sample Professors’ preference data:

Sl no	Emp id	Name	Designation	p1	p2	p3	p4	p5	A1	A2
2	10002	Faculty2	Professor	BCSE103E	BCSE202L	CSE1016	CSE3061	BCSE205L	BCSE103E	BCSE103E
7	10007	Faculty7	Professor	BCSE202L	CSE1016	CSE2012	CSE3501	CSE4056	BCSE202L	BCSE202L

Batch requirement after Professors’ allocation.

	No. of batches	After prof
BCSE103E	20	18
BCSE202L	18	16
CSE1016	10	10
CSE2012	0	0
CSE3061	10	10
CSE3501	10	10

CSE4056	6	6
BCSE205L	24	24

d. Allocate two same courses to faculty, if possible.
e. If a faculty selects a course in preference1, the same course shouldn't be available for the remaining preferences.
f. Once the number of batches required is satisfied by faculty preferences, disable the course to the next level.

View the allocated courses, provide edit option for the allocated courses of each faculty, approve/approve all option in the page for admin. Provide Download sheet option for the allocated courses.

Faculty Page 2: "Allocated Courses"

Display, "Yet to allocate, kindly wait" message. Once allocation done and admin approves the same, two courses should be displayed in this page to the respective faculty.

Use your creativity and attractive style sheets to design the portal.

---------- Wish you all the best dear all ! ----------