BIRLA VISHVAKARMA MAHAVIDYALAYA

(ENGINEERING COLLEGE)

(An Autonomous Institution)

VALLABH VIDYANAGAR

Project Report

Department Resources Management System

By Karan Raj (20CP306)

Certificate:

This is to certify that **Mr. Karansinh Raj (20C306)** has/have satisfactorily completed Summer Internship – 1 (CPIS1) entitled "**Department Resources Management System**" for the partial fulfillment of the degree of **B.Tech in Computer Engineering (GIA)** during the academic year 2021-22 at Computer Engineering Department, Birla Vishvakarma Mahavidhyalaya Vallabh Vidyanagar.

Guided By

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Computer Dept. BVM, VVNagar

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Features:

- The system is implemented to reduce the manual work and enhances the accuracy of work in a department.
- Admin can manage all sections, categories, resources.
- Admin can add/update/delete sections.
- Admin can add/update/delete Categories.
- Admin can add/update/delete Resources.
- Admin can transfer/replace Resources.
- Admin can generate reports and save them.
- Admin can see all information in graphical form like pie chart, bar chart.
- Admin can access website from mobile, tablet, and desktop/laptop.
- Website is fully responsive and user friendly.

Analysis and Requirement:

1. Entity Sets & Attributes

Entity Set	Attributes
Section	**sectionID**, sectionName, sectionDesc, sectionCapacity, sectionAllocated
Categories	**categoryID**, categoryName, categoryDesc
Resources	**resourceID**, resourceName, resourceDesc, resourceMAC, resourceCompany, lastUpdated

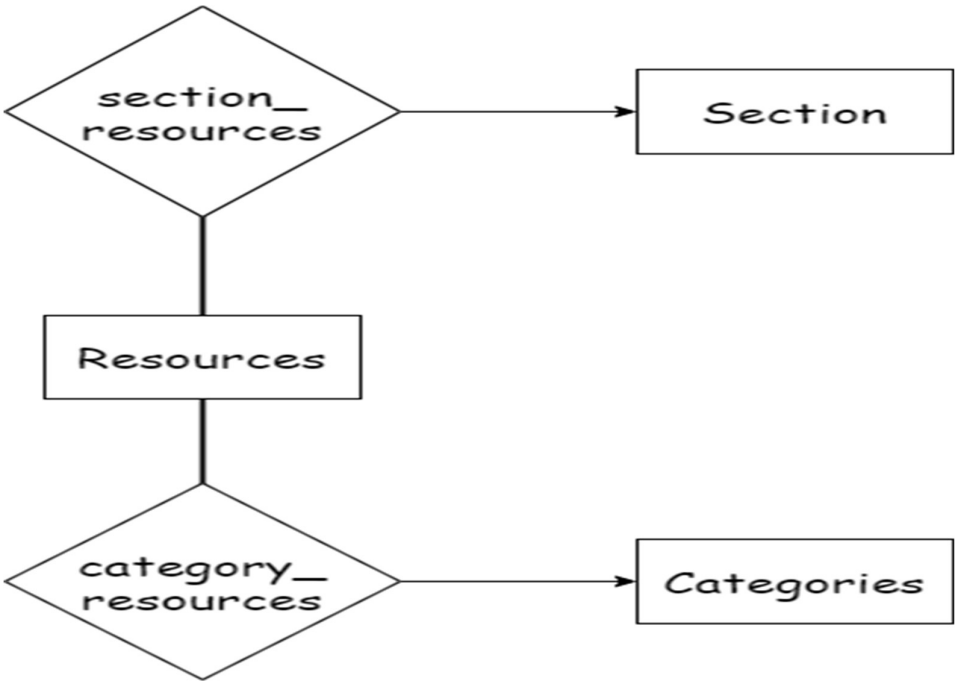
2. Association among Entity Sets

	Section	Categories	Resources
Section	×	×	✓
Categories	×	×	✓
Resources	✓	✓	×

3. Relationship Set

Entity sets	Relationship set	Mapping cardinality
Section - Resources	Section_resources	One To Many
Categories - Resources	Categories_resources	One To Many

4. E – R Diagram



5. Relation / Tables

Tables	Columns
Section	**sectionID**, sectionName, sectionDesc, sectionCapacity, sectionAllocated
Categories	**categoryID**, categoryName, categoryDesc
Resources	**resourceID**, resourceName, resourceDesc, resourceMAC, resourceCompany, resourceSection, resourceCategory, lastUpdated

Data Dictionary:

1. Section Table

Col-Name	Type	Size	Constraint	Represents
sectionID	**INT**	**5**	**Primary Key**	**Section ID (Auto Increment)**
sectionName	VARCHAR	50	Not Null	Section Name
sectionDesc	VARCHAR	300		Section Description
sectionAllocated	INT	5		Section Allocated Slots
sectionCapacity	INT	5		Section Total Slots Capacity

2. Categories Table

Col-Name	Type	Size	Constraint	Represents
categoryID	**INT**	**5**	**Primary Key**	**Category ID (Auto Increment)**
categoryName	VARCHAR	50	Not Null	Category Name
categoryDesc	VARCHAR	300		Category Description

3. Resources Table

Col-Name	Type	Size	Constraint	Represents
resourceID	**INT**	**5**	**Primary Key**	**Resource ID (Auto Increment)**
resourceName	VARCHAR	50	Not Null	Resource Name
resourceDesc	VARCHAR	300		Resource Description
resourceMAC	VARCHAR	50		Resource MAC ADDRESS
resourceCompany	VARCHAR	50		Resource Company Name
resourceCategory	INT	5		References to categoryID from categories Table
resourceSection	INT	5		References to sectionID from section Table
lastUpdated	DATETIME			Rescource last modified/ updated time

Analysing Functional Requirements:

1. **Manage Section Data**
    - Add Section
    - Update Section
    - Delete Section
    - Retrieve Section

2. **Manage Categories Data**
    - Add Category
    - Update Category
    - Delete Category
    - Retrieve Category

3. **Manage Resources Data**
    - Add Resource
    - Update Resource
    - Delete Resource
    - Retrieve Resource
    - Transfer Resources
    - Replace Resources

4. **Manage Login**
    - Receive ID and Password
    - Verify Data

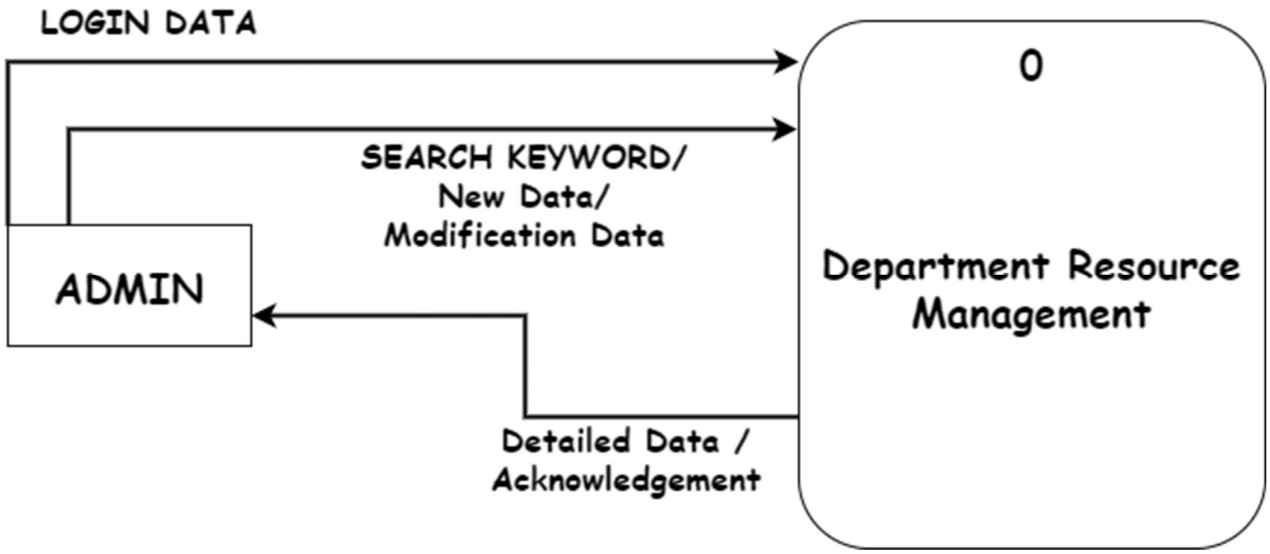
5. **Manage Dashboard**
    - Receive Section, categories, resources data

- Prepare Graphs/ charts

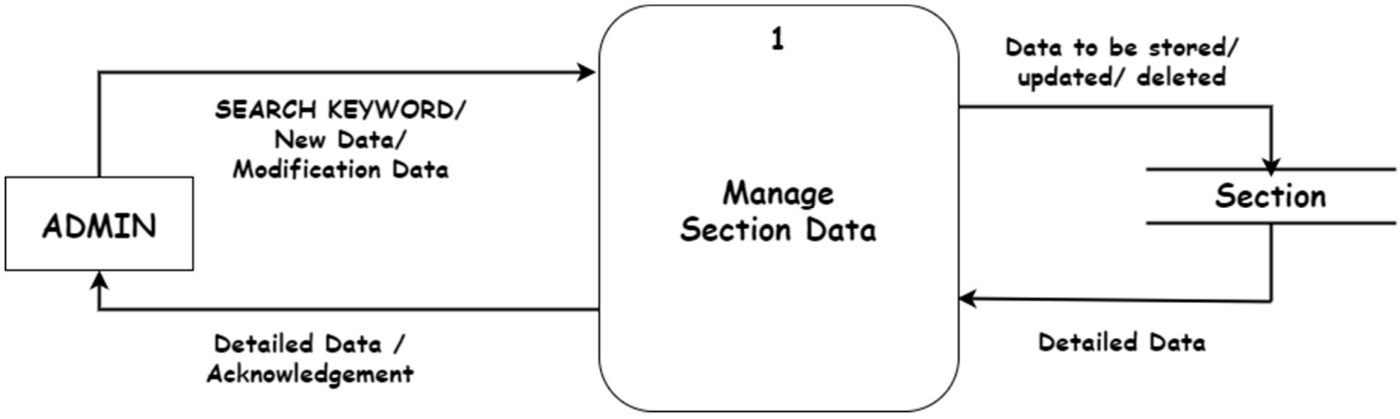
6. Generate Reports

- Receive Section, categories, resources data
- Prepare reports

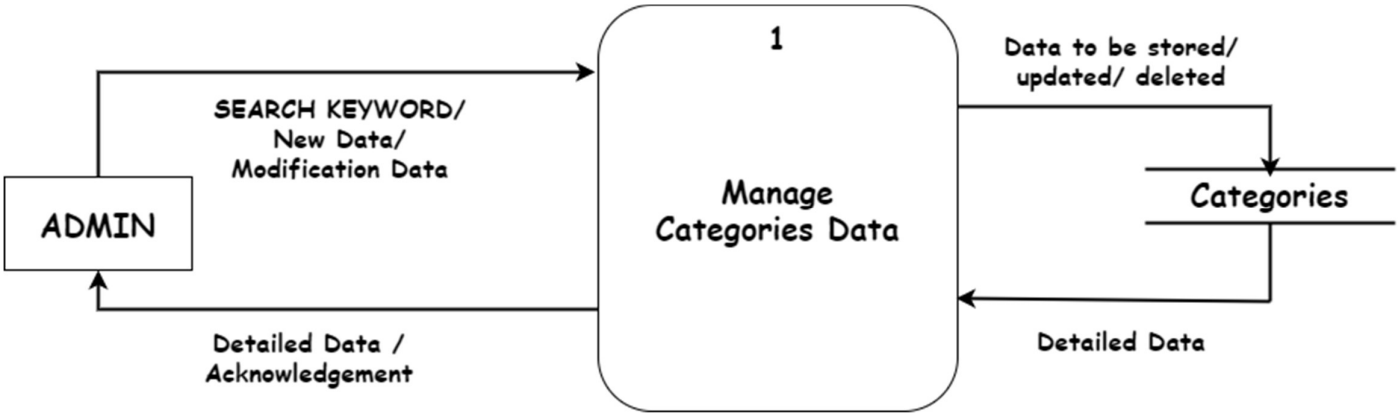
- **Context or Level 0 Diagram: Department Resource Management**



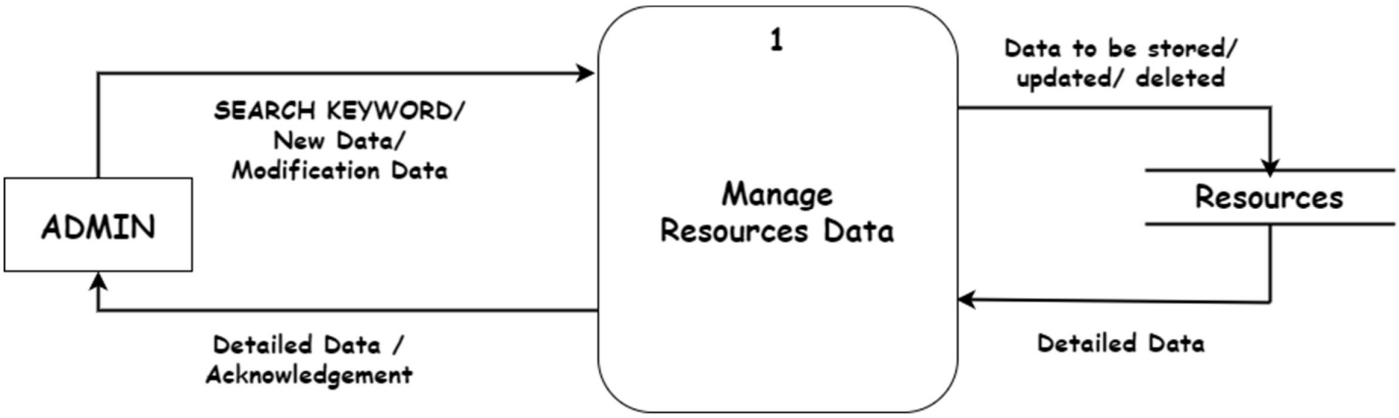
- **Level 1 Diagram: Manage Section Data**



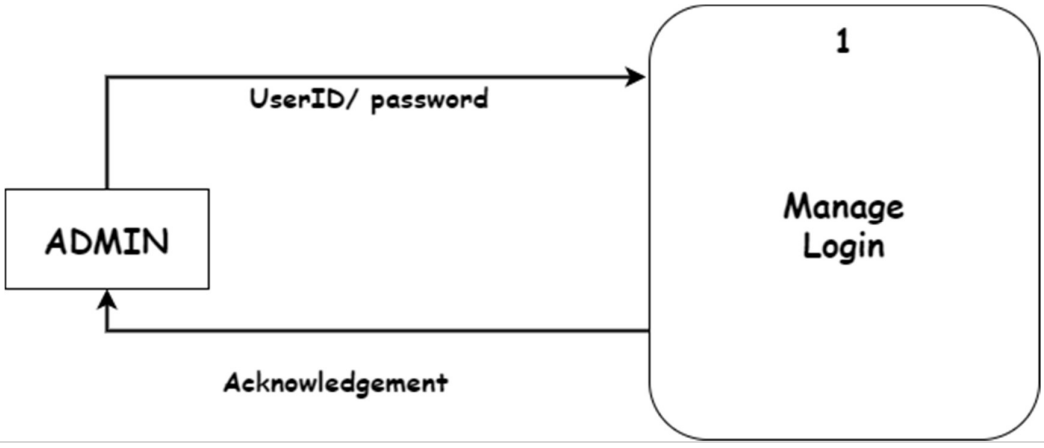
- **Level 1 Diagram: Manage Categories Data**



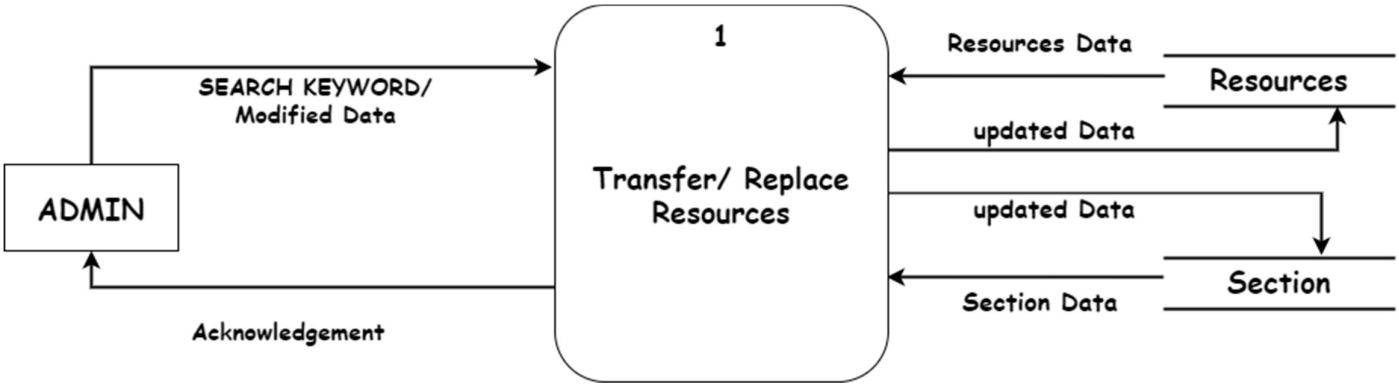
- **Level 1 Diagram: Manage Categories Data**



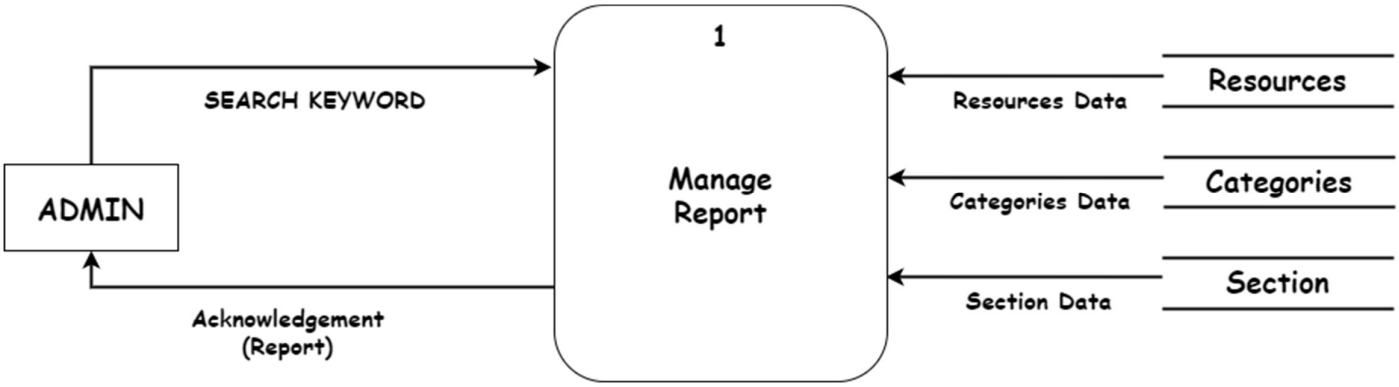
- **Level 1 Diagram: Manage Login**



- **Level 1 Diagram: Manage Transfer/ Replace Resources**



- **Level 1 Diagram: Generate Report**



Webpages:

1. Login Page

- Enter Login Details (Username/ Email, Password)
- On Confirmation go to Admin Panel

2. Dashboard Page

- Generate Report
- Logout
- General information
- Graphical charts and bars of information

3. Manage Section Page

- Add new section
- Retrieve list of all section
- Update existing section
- Delete existing section

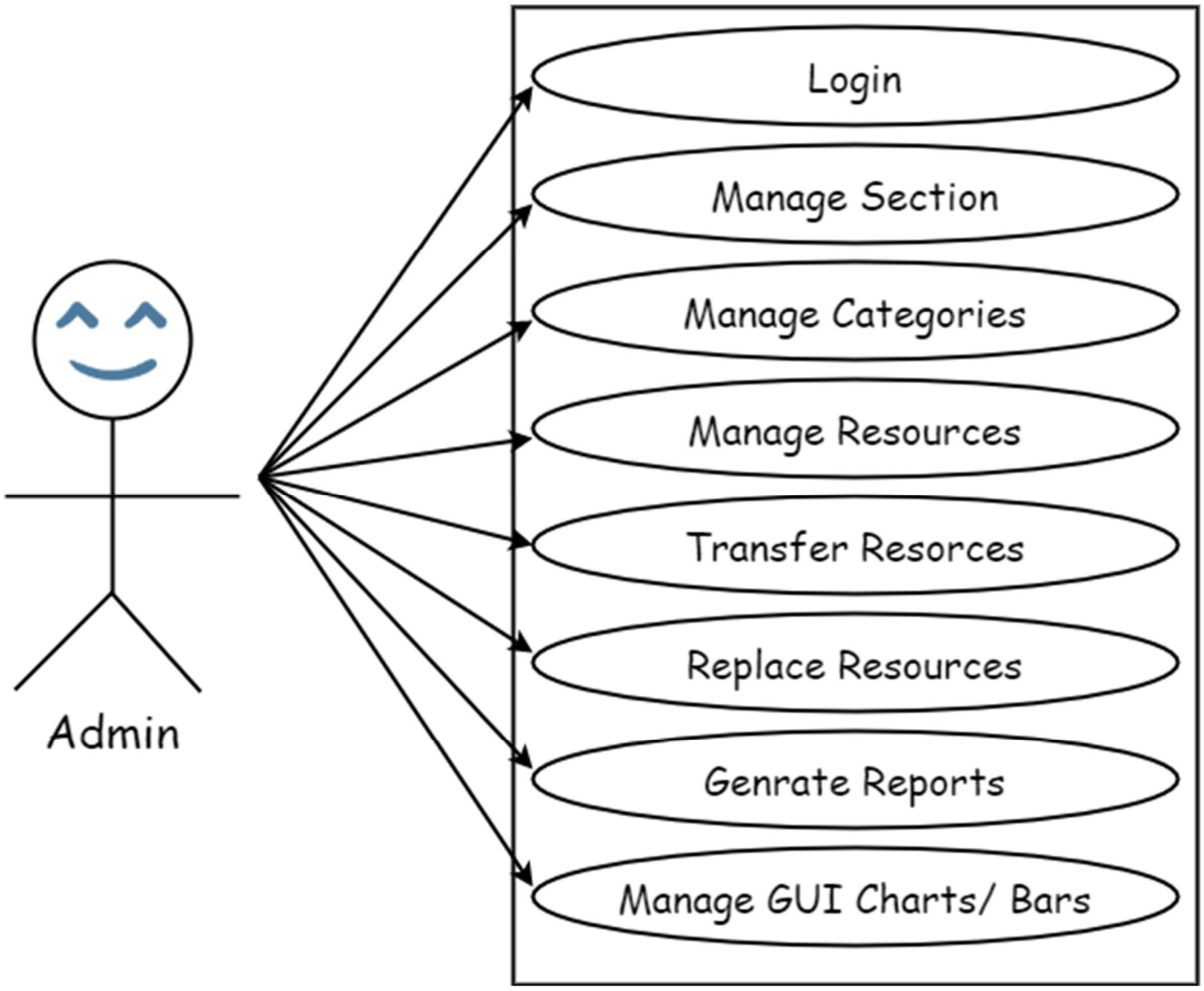
4. Manage Categories Page

- Add new Category
- Retrieve list of all categories
- Update existing category
- Delete existing category

5. Manage Resources Page

- Add new resource
- Retrieve list of all resources
- Filter resources based on section
- Search resource
- Update existing resource
- Delete existing resource
- Transfer resources from one section to another
- Replace resources between two section

Use case diagram:



Technology:

- **Front End:**

  HTML, CSS, BOOTSTARP, JAVASCRIPT, AJAX, Google Chart API, Font Awesome Icons, JQUERY

- **Back End:**

  MySQL, PHP

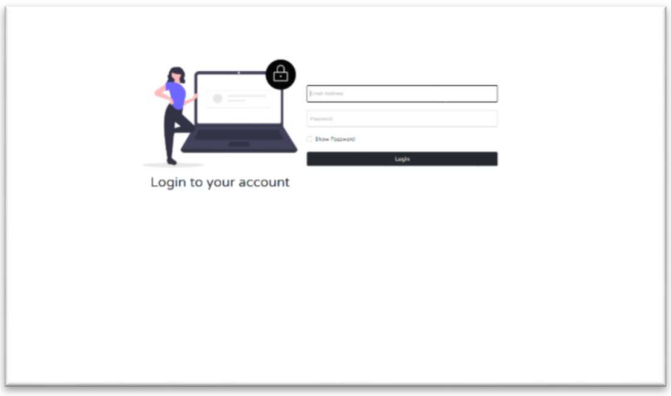
- **Type of application:**

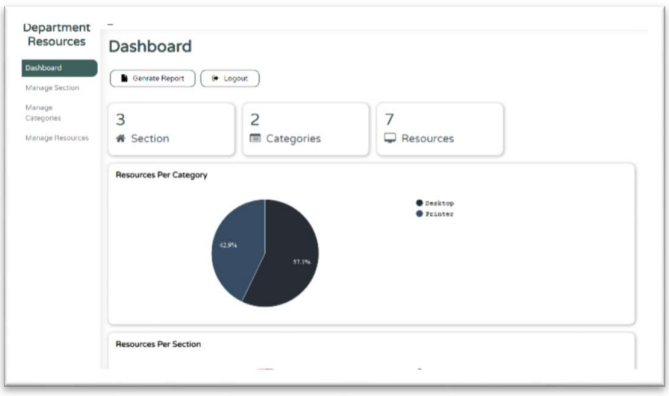
  WEB Application/ Website

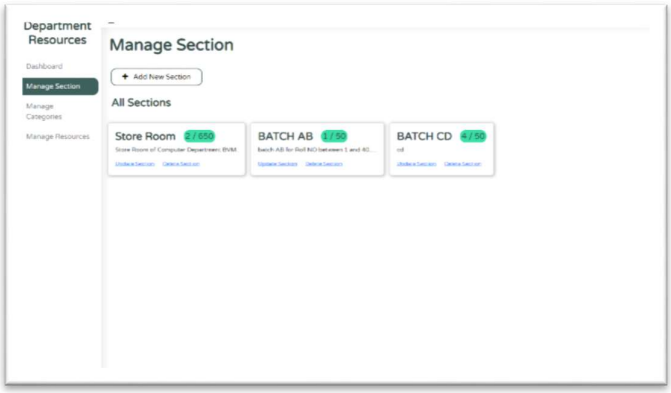
Progress Report:

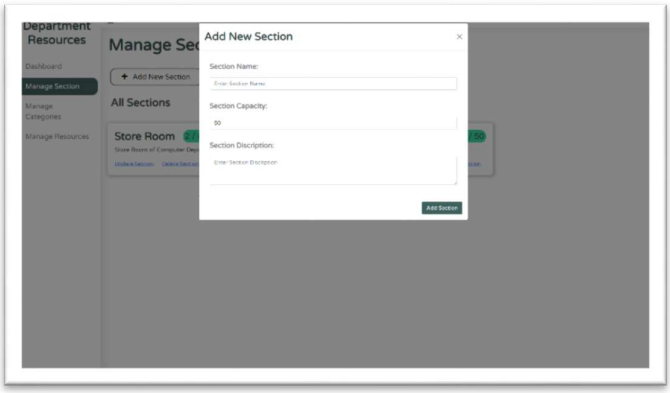
Day	Task	Description
Day 1	Analysis and Requirements Gathering Database Design and Implementation	1. Analysis and requirements gatherings about Department Resources Management System. 2. Analysis of entity sets, attributes, relations among them. 3. Prepare ER Diagram. 4. Prepare Data Dictionary (Database Tables) 5. Implementation of Database in MYSQL (PhpMyAdmin).
Day 2		
Day 3		
Day 4	Analysing Functional Requirements Data flow diagram, Use case diagram	6. Analysis of functional requirements of system. 7. Design website modules. 8. Prepare Data Flow Diagram. 9. Design System Users. 10. Prepare Use Case Diagram.
Day 5	Prepare Backend API (PHP Scripts)	11. Implementation of backend API (PHP Scripts) to communicate with Database.
Day 6		
Day 7	Prepare Frontend Design and Functionality (Html, Css, JavaScript, Bootstrap, AJAX)	12. Prepare Design of frontend. 13. Prepare Login Page. 14. Prepare Manage Section Page. 15. Prepare Manage Categories Page. 16. Prepare Manage Resources Page.
Day 8		
Day 9		
Day 10		
Day 11	Prepare Responsive Website	17. Prepare website responsive or mobile friendly with the help of Bootstrap. 18. Making GUI more user friendly and easy to use.
Day 12	Prepare Graphs/ Charts, Reports	18. Implementation of Report in from of PDF. 19. Prepare Manage Dashboard Page. 20. Implementation of Charts using google API.
Day 13	Testing	21. Testing of website and some bug fixes.
Day 14	Prepare Project Report, Presentation	22. Prepare project report in Word. 23. Prepare project presentation in PowerPoint. 24. Final project touches.

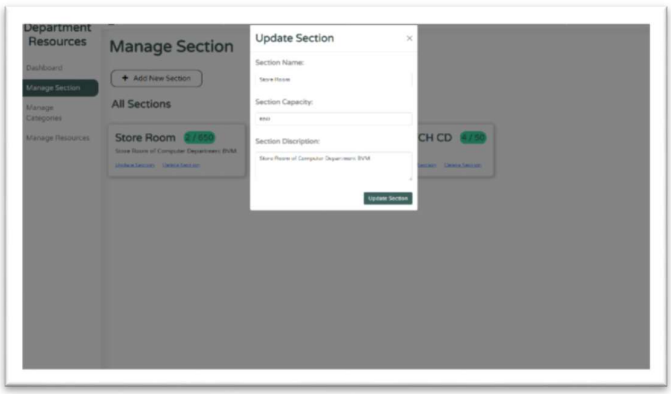
Website Snapshots:

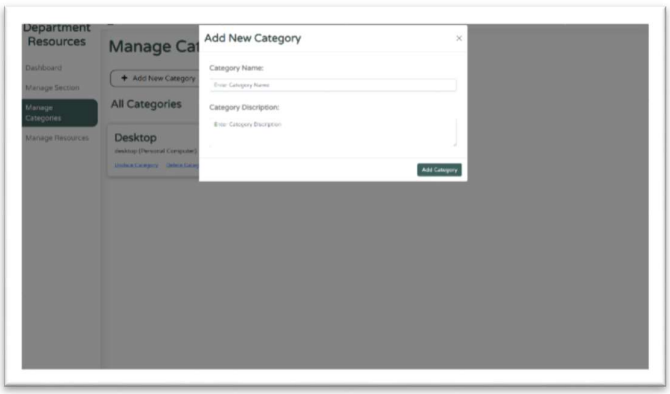


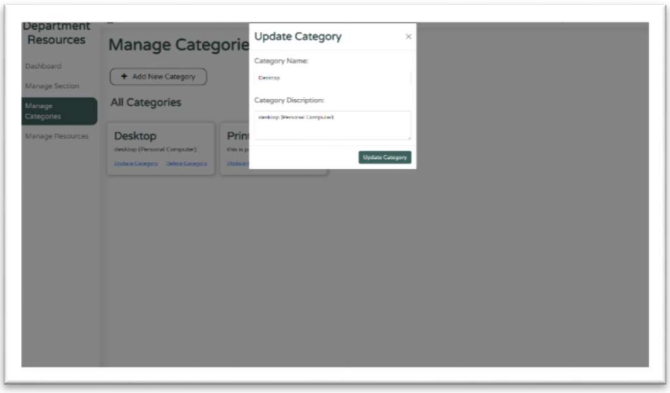


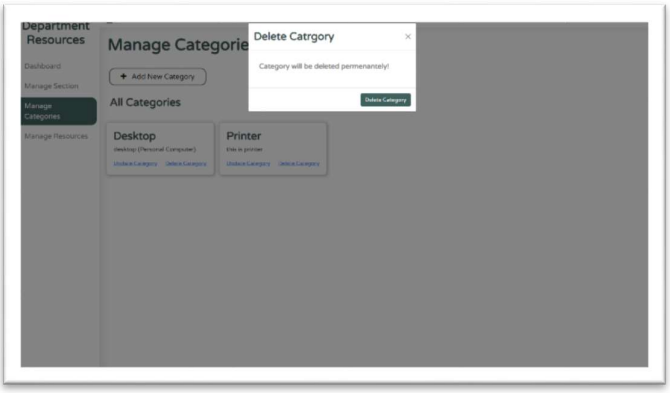


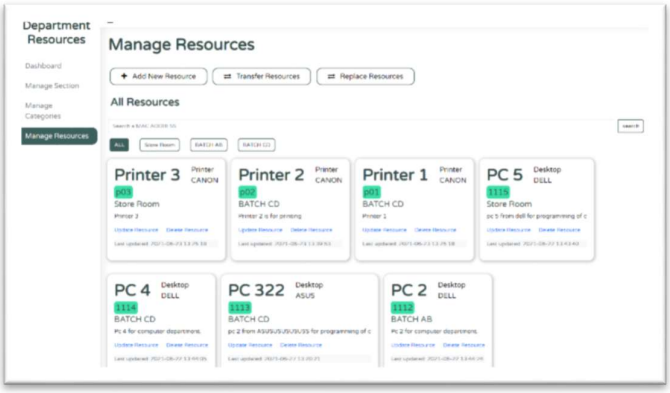


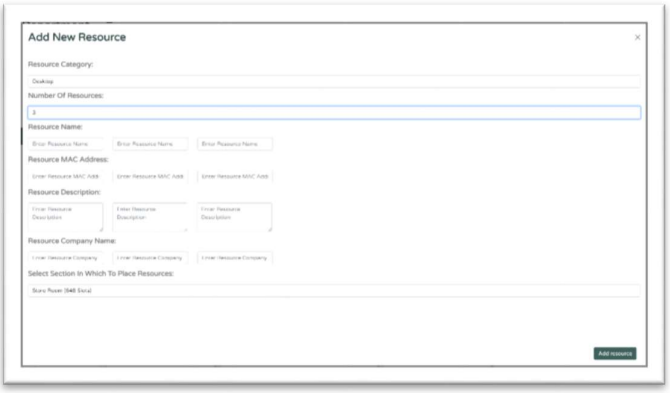


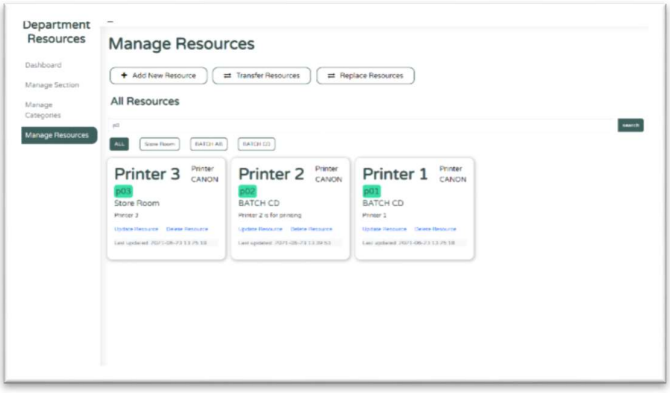


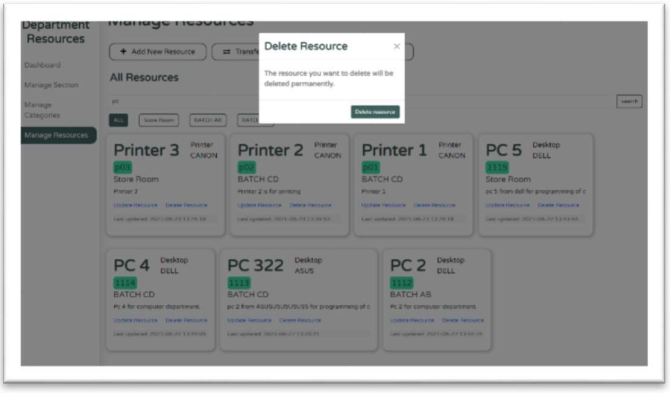

Department Resources
Manage Categorie
Update Category
Category Name:
Category Discription:
Update Category
All Categories
Desktop

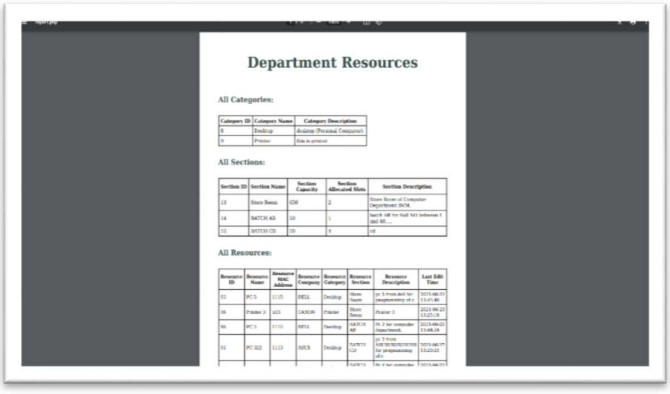

Department Resources
Manage Categorie
Delete Catrgory
Category will be deleted permenantely!
Delete Category
All Categories
Desktop
Printer

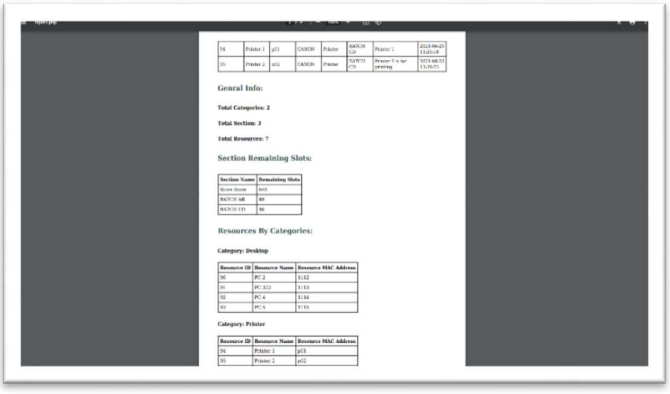

Department Resources
Manage Resources
Add New Resource
Transfer Resources
Replace Resources
All Resources
Printer 3
Printer 2
Printer 1
PC 5
PC 4
PC 322
PC 2


Add New Resource
Resource Category:
Number Of Resources:
Resource Name:
Resource MAC Address:
Resource Description:
Resource Company Name:
Select Section In Which To Place Resources:
Add resource


Department Resources
Manage Resources
Add New Resource
Transfer Resources
Replace Resources
All Resources
Printer 3
Printer 2
Printer 1


Department Resources
Delete Resource
The resource you want to delete will be deleted permanently.
Delete resource
All Resources
Printer 3
Printer 2
Printer 1
PC 5
PC 4
PC 322
PC 2


Department Resources
All Categories:
All Sections:
All Resources:


General Info:
Total Categories: 2
Total Section: 3
Total Resources: 7
Section Remaining Slots:
Resources By Categories:
Category: Desktop
Category: Printer

References:

1. **Bootstrap** (https://getbootstrap.com)
2. **w3schools** (https://www.w3schools.com)
3. **Google Chart API** (https://developers.google.com/chart)
4. **font awesome icon** (https://fontawesome.com)
5. **Draw.io** (https://app.diagrams.net)
6. **Stack overflow** (https://stackoverflow.com)