



UNIVERSITI MALAYSIA TERENGGANU

CSM3023 WEB-BASED APPLICATION DEVELOPMENT (K1)

BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS

GROUP PROJECT

CUSTOMER RELATIONSHIP MANAGEMENT

SEMESTER II 2023/2024

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CONTRIBUTION

No.	Matric Num.	Name	Job Description

1	S66292	LUQMAN HAKIM BIN AZIZ	<ul style="list-style-type: none"> ● Leader ● Compiler ● Database ● Project Management
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3	S67554	HUSNA ZAHIRA BINTI RUZELI	<ul style="list-style-type: none"> ● Design ● Database ● Use Case

EXECUTIVE SUMMARY

The Customer Relationship Management (CRM) project for the Residential College at Universiti Malaysia Terengganu (UMT) is designed to increase administrative efficiency by automating routine tasks and consolidating information for easy access and management. This initiative aims to centralize student information, improve communication channels, and enhance service delivery, ultimately offering a superior residential experience for students. Implementing the CRM system is expected to result in higher student satisfaction due to improved services and more effective communication.

USE CASE

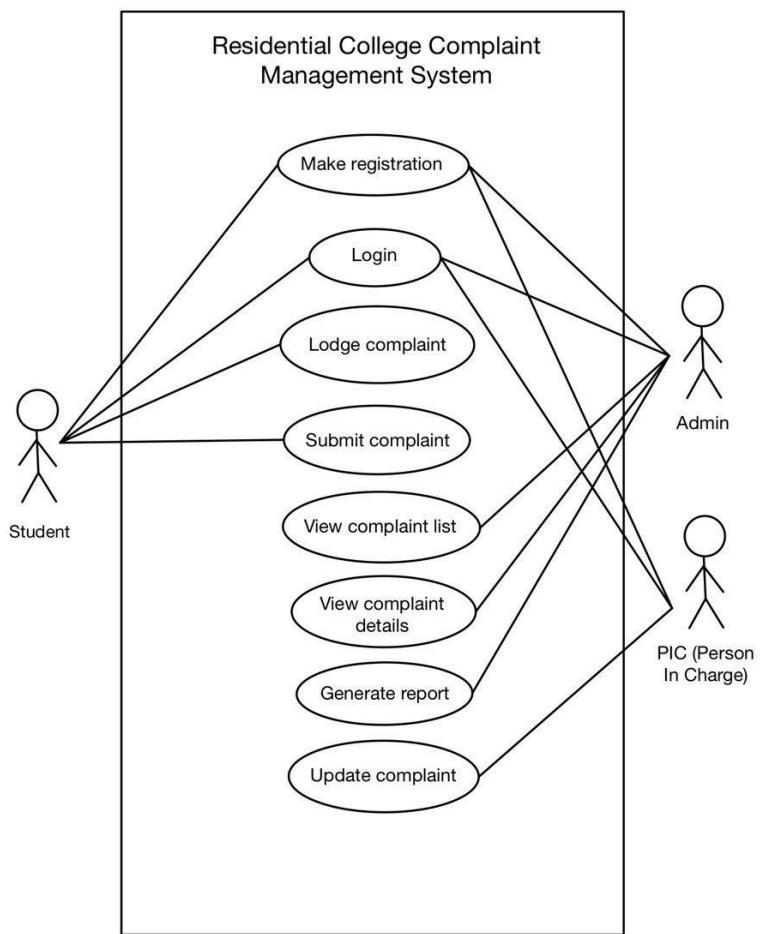


DIAGRAM 1

Diagram 1 represents a “Residential College Complaint Management System” showing how different users interact with the system. Students can register, log in, lodge complaints, and submit them. Admins can register, log in, view complaint list, view complaint details, and generate report. Person In Charge (PIC) can register, log in, and update complaint.

CLASS DIAGRAM

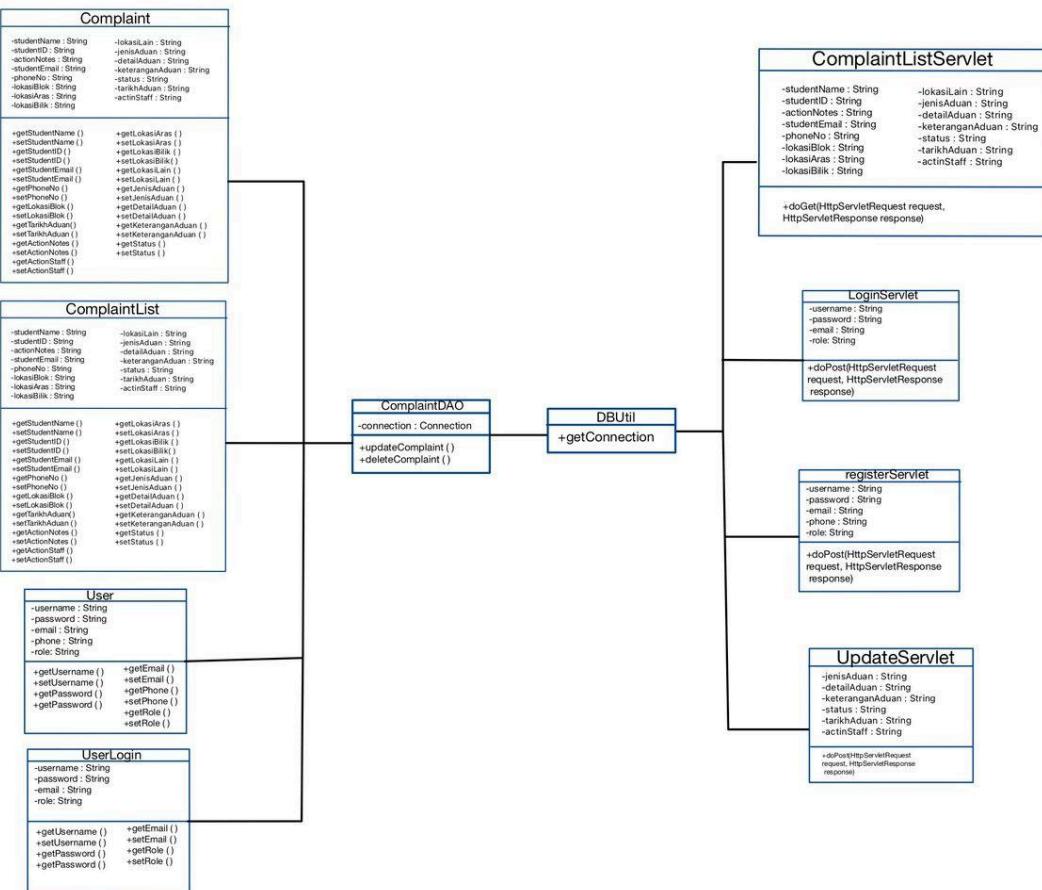


DIAGRAM 2

Diagram 2 shows a web application for handling complaints using an MVC structure. It includes classes for managing complaints (Complaint and ComplaintList) and user information (User and UserLogin). The ComplaintDAO class handles database operations, with support from the DBUtil class for connections. Various servlets (ComplaintListServlet, LoginServlet, RegisterServlet, and UpdateServlet) manage user interactions like logging in, registering, viewing, and updating complaints. These servlets process requests, interact with the ComplaintDAO, and return responses to users.

USER TRACEABILITY MATRIX

Requirement ID	User Requirement	System Feature ID	System Feature Description	Status
----------------	------------------	-------------------	----------------------------	--------

	Description			
UR01	Manage registration of new user	SF01	Provide a register form	Implemented
UR02	Manage login for user	SF02	Provide a login form	Implemented
UR03	Add new complaint data	SF03	Provide a complaint form	Implemented
UR04	View list of complaint	SF04	Display list of the complaint	Implemented
UR05	Edit complaint form	SF05	Display complaint edit form	Implemented
UR06	Update complaint progress	SF06	Display Update complaint progress form	Implemented

DIAGRAM 3

ER DIAGRAM

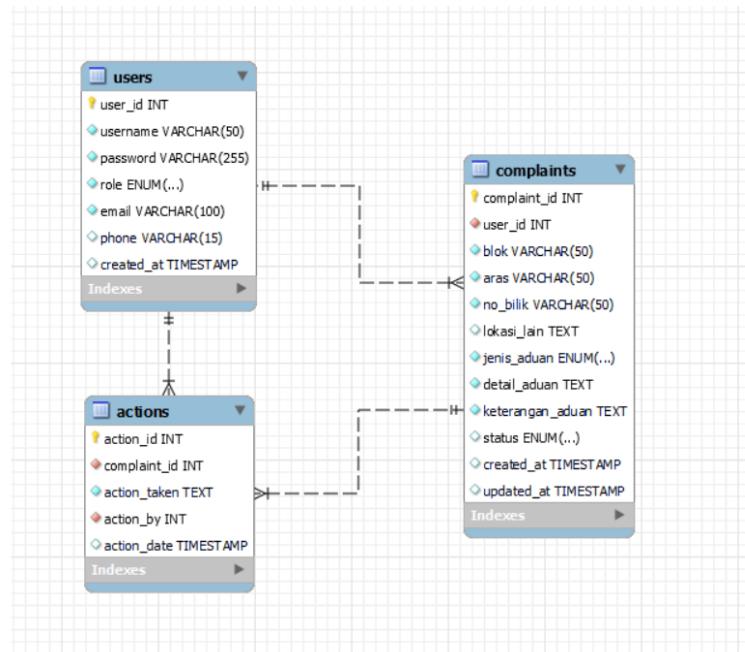


DIAGRAM 4

Diagram 4 The ER diagram shows three tables: users, complaints, and actions, with their relationships. The users table stores information about users. The complaints table records details of complaints made by users. The actions table logs actions taken on complaints. The relationships connect the users table to the complaints table (one user can create many complaints) and the complaints table to the actions table (one complaint can have many actions), while also linking actions to the users who performed them.

MVC MODEL

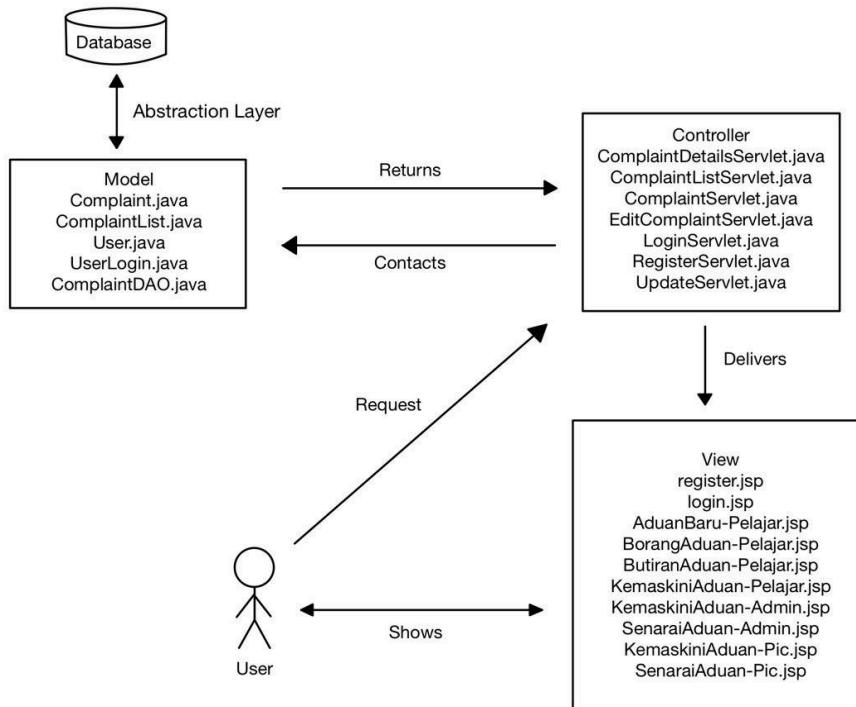


DIAGRAM 5

Diagram 5 depicts a web application's architecture using the MVC (Model-View-Controller) pattern. The Model includes classes for handling data and interacting with the database. The Controller consists of servlets that manage user requests, process data, and interact with the model. The View contains JSP files that generate the user interface. Users send requests that are processed by the controllers, which use the model to handle data and then deliver the appropriate view back to the user.

INTERFACE

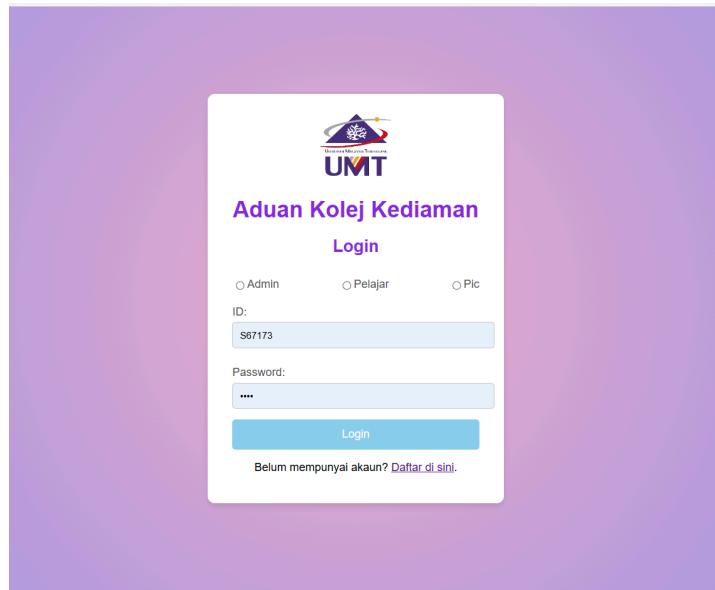


DIAGRAM 6

Diagram 6 show that login page for admin, student and pic to log in into the system

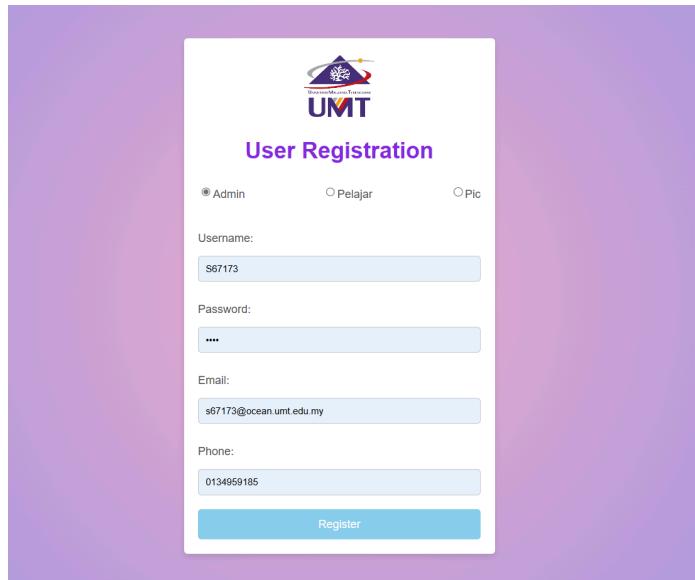


DIAGRAM 7

Diagram 7 show that register page for admin, student and pic to register their information into the system

Aduan Baru

Borang Aduan

Maklumat Pengadu	
Nama:	NUR FADHILAH BINTI MOHD RAHMAT
ID:	S67171
Email:	ilahsyugaa@gmail.com
No. Telefon:	0134959185

Maklumat Aduan	
Blok:	Ibnu Hibban (IH)
Aras:	Aras 1

Ibnu Hibban (IH)	
Aras:	Aras 1
No. Bilik:	IS-303
Lokasi Lain-lain:	toilet
Jenis Kerosakan/Aduan:	Kerosakan Elektrikal
Detail Kerosakan/Aduan:	lampa rosak
Keterangan Kerosakan/Aduan:	mentol tidak menyala

Seterusnya

Batal

DIAGRAM 8

Diagram 8 show AduanBaru-Pelajar page where student required to input data into this form to make a complaint in the system.

ID	Student Name	Student ID	Student Email	Phone No	Blok	Aras	No Bilik	Lokasi Lain	Jenis Aduan	Tarikh Aduan	Action Notes	Action Staff	Tindakan
9	NUR FADHILAH BINTI MOHD RAHMAT	S67171	ilahsyugaa@gmail.com	0134959185	IH	Aras 1	IS-303	toilet	kerosakanElektrikal	2024-06-29 04:55:39.0			LIHAT
10	HUSNA ZAHIRAH	S67171	ilahsyugaa@gmail.com	0134959185	IA	Aras 3	IS-303	dobi	kerosakanPerabot	2024-06-29 04:56:45.0			LIHAT
11	LUQMAN HAKIM	S67171	ilahsyugaa@gmail.com	0134959185	ANN	Aras 2	ATB-301	TANGGA	kerosakanAwam	2024-06-29 04:58:29.0			LIHAT

DIAGRAM 9

Diagram 9 show SenaraiAduan-Pelajar page where the page will display all the complaint list have done by the student.

Butiran		Maklumat Pengadu
Nama:	NUR FADHILAH BINTI MOHD RAHMAT	
ID:	S67171	
E-mail:	ilahsyugaa@gmail.com	
No. Telefon:	0134959185	

Maklumat Aduan	
Blok:	IH

No. Diraja:
IS-303

Lokasi lain-lain:
toilet

Jenis Kerosakan/Aduan:
kerosakanElektrikal

Detail kerosakan/aduan:
lampu rosak

Keterangan kerosakan/aduan:
mentol tidak menyala

Maklumat Staf Bertugas

Catatan:
null

Staff Bertugas:
null

DIAGRAM 10

Diagram 10 show ButiranAduan-Pelajar page where the page will display the complaint form have done by the student and have update by pic.

Admin page:

Senarai Aduan Pelajar

ID	Student Name	Student ID	Student Email	Phone No	Blok	Aras	No Bilik	Lokasi Lain	Jenis Aduan	Tarikh Aduan	Action Notes	Action Staff	Tindakan
											Cari aduan...	Cari	
9	NUR FADHILAH BINTI MOHD RAHMAT	S67171	ilahsyugaa@gmail.com	0134959185	IH	Aras 1	IS-303	toilet	kerosakanElektrikal	2024-06-29 04:55:39.0			EDIT
10	HUSNA ZAHIRAH	S67171	ilahsyugaa@gmail.com	0134959185	IA	Aras 3	IS-303	dobi	kerosakanPerabot	2024-06-29 04:56:45.0			EDIT
11	LUQMAN HAKIM	S67171	ilahsyugaa@gmail.com	0134959185	ANN	Aras 2	ATB-301	TANGGA	kerosakanAwam	2024-06-29 04:58:29.0			EDIT

DIAGRAM 11

Diagram 11 show SenaraiAduan-Admin page after admin login into the system where this page will display all complaint list that have been submitted by student for admin edit use.

The screenshot shows a web-based application interface for managing complaints. The left sidebar has a blue header with the UMT logo and the text 'Kemaskini Aduan' and 'Senarai Aduan'. The main content area is titled 'Kemaskini Aduan' and contains two sections: 'Maklumat Pengadu' (Complainant Information) and 'Maklumat Aduan' (Complaint Information). The 'Maklumat Pengadu' section includes fields for ID, Name, ID, E-mail, and No. Telefon, all of which are redacted with yellow bars. The 'Maklumat Aduan' section includes fields for Blok, Aras, No. Bilik, Lokasi lain-lain, Jenis Kerosakan/Aduan (with a dropdown menu showing 'Kerosakan Awam' selected), and Keterangan kerosakan/aduan, also redacted with yellow bars. At the bottom right is a blue button labeled 'Hantar' (Send).

DIAGRAM 12

Diagram 12 show KemaskiniAduan-Admin page. In this page, admin be able to edit data from student form before submit the data to PIC.

PIC page:

Senarai Aduan

Senarai Aduan Pelajar

ID	Student Name	Student ID	Student Email	Phone No	Blok	Aras	No Bilik	Lokasi Lain	Jenis Aduan	Tarikh Aduan	Action Notes	Action Staff	Tindakan
9	NUR FADHILAH BINTI MOHD RAHMAT	S67171	ilahsyugaa@gmail.com	0134959185	IH	Aras 1	IS-303	toilet	kerosakanPerabot	2024-06-29 04:55:39.0			EDIT
10	HUSNA ZAHIRAH	S67171	ilahsyugaa@gmail.com	0134959185	IA	Aras 3	IS-303	dobi	kerosakanPerabot	2024-06-29 04:56:45.0			EDIT
11	LUQMAN HAKIM	S67171	ilahsyugaa@gmail.com	0134959185	ANN	Aras 2	ATB-301	TANGGA	kerosakanAwam	2024-06-29 04:58:29.0			EDIT

DIAGRAM 13

Diagram 13 show SenaraiAduan-PIC page after PIC login into the system where this page will display all the complaint list that have been confirmed by admin as their list of work to do.

 Tindakan Aduan Senarai Aduan	<h3>Kemaskini Tindakan Aduan</h3> <table border="1"><tr><td colspan="2">Tindakan</td></tr><tr><td style="background-color: #7b7bb3; color: white; text-align: right;">Maklumat Pengadu</td><td></td></tr><tr><td>ID:</td><td>9</td></tr><tr><td>Nama:</td><td></td></tr><tr><td>ID:</td><td></td></tr><tr><td>E-mail:</td><td></td></tr><tr><td>No. Telefon:</td><td></td></tr><tr><td colspan="2">Maklumat Aduan</td></tr><tr><td>Blok:</td><td></td></tr><tr><td>Aras:</td><td></td></tr><tr><td>No. Bilik:</td><td></td></tr><tr><td>Lokasi lain-lain:</td><td></td></tr><tr><td>Jenis Kerosakan/Aduan:</td><td><input type="text" value="Kerosakan Perabot"/></td></tr><tr><td>Detail kerosakan/aduan:</td><td></td></tr><tr><td>Keterangan kerosakan/aduan:</td><td></td></tr></table>	Tindakan		Maklumat Pengadu		ID:	9	Nama:		ID:		E-mail:		No. Telefon:		Maklumat Aduan		Blok:		Aras:		No. Bilik:		Lokasi lain-lain:		Jenis Kerosakan/Aduan:	<input type="text" value="Kerosakan Perabot"/>	Detail kerosakan/aduan:		Keterangan kerosakan/aduan:	
Tindakan																															
Maklumat Pengadu																															
ID:	9																														
Nama:																															
ID:																															
E-mail:																															
No. Telefon:																															
Maklumat Aduan																															
Blok:																															
Aras:																															
No. Bilik:																															
Lokasi lain-lain:																															
Jenis Kerosakan/Aduan:	<input type="text" value="Kerosakan Perabot"/>																														
Detail kerosakan/aduan:																															
Keterangan kerosakan/aduan:																															



Tindakan Aduan

Senarai Aduan

Lokasi lain-lain:

Jenis Kerosakan/Aduan:

Kerosakan Perabot

Detail kerosakan/aduan:

Keterangan kerosakan/aduan:

Maklumat Staf Bertugas

Catatan:

KERUSI SUDAH DIBAIKI

Staff Bertugas:

MOHD ABDUL SUIP

Hantar



Senarai Aduan Pelajar

Cari aduan...

Cari

ID	Student Name	Student ID	Student Email	Phone No	Blok	Aras	No Bilik	Lokasi Lain	Jenis Aduan	Tarikh Aduan	Action Notes	Action Staff	Tindakan
9	NUR FADHILAH BINTI MOHD RAHMAT	S67171	ilahsyugaa@gmail.com	0134959185	IH	Aras 1	IS-303	toilet	kerosakanPerabot	2024-06-29 04:55:39.0	KERUSI SUDAH DIBAIKI	MOHD ABDUL SUIP	EDIT
10	HUSNA ZAHIRAH	S67171	ilahsyugaa@gmail.com	0134959185	IA	Aras 3	IS-303	dobi	kerosakanPerabot	2024-06-29 04:56:45.0			EDIT
11	LUQMAN HAKIM	S67171	ilahsyugaa@gmail.com	0134959185	ANN	Aras 2	ATB-301	TANGGA	kerosakanAwam	2024-06-29 04:58:29.0			EDIT

DIAGRAM 14

Diagram 14 show KemaskiniAduan-PIC page where in this page the PIC be able to update the complaint as done to the student after they already done do the complaint.

CODE

Register.jsp

```
7  <%@ page contentType="text/html;charset=UTF-8" language="java" %>
8  <!DOCTYPE html>
9  <html lang="en">
10 <head>
11   <meta charset="UTF-8">
12   <meta name="viewport" content="width=device-width, initial-scale=1.0">
13   <title>User Registration</title>
14   <style>
15     body {
16       font-family: Arial, sans-serif;
17       background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,
18       display: flex;
19       justify-content: center;
20       align-items: center;
21       height: 100vh;
22       margin: 0;SS
23     }
24     .container {
25       background-color: #ffffff;
26       padding: 20px;
27       border-radius: 5px;
28       box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
29       width: 400px;
30       text-align: center;
31     }
32     h1 {
33       text-align: center;
34       color: #8A2BE2;
35       margin-bottom: 20px;
36     }
37     form {
38       display: grid;
39       gap: 10px;
40     }
41     label {
42       display: block;
43         margin: 10px 0 5px;
44         text-align: left;
45         color: #555;
46       }
47
48       input[type="text"],
49       input[type="password"],
50       input[type="email"],
51       input[type="tel"],
52       input[type="radio"] {
53         width: 100%;
54         padding: 10px;
55         border: 1px solid #ccc;
56         border-radius: 5px;
57         box-sizing: border-box;
58         margin-bottom: 10px;
59       }
60       .role-container {
61         display: flex;
62         justify-content: space-between;
63         margin-bottom: 15px;
64       }
65
66       .role-container label {
67         display: flex;
68         align-items: center;
69         color: #555;
70       }
71       input[type="submit"] {
72         padding: 12px;
73         background-color: #87CEEB;
74         color: white;
75         border: none;
76         border-radius: 5px;
77         cursor: pointer;
78         font-size: 16px;
79       }
80     
```

```
43         margin: 10px 0 5px;
44         text-align: left;
45         color: #555;
46       }
47
48       input[type="text"],
49       input[type="password"],
50       input[type="email"],
51       input[type="tel"],
52       input[type="radio"] {
53         width: 100%;
54         padding: 10px;
55         border: 1px solid #ccc;
56         border-radius: 5px;
57         box-sizing: border-box;
58         margin-bottom: 10px;
59       }
60       .role-container {
61         display: flex;
62         justify-content: space-between;
63         margin-bottom: 15px;
64       }
65
66       .role-container label {
67         display: flex;
68         align-items: center;
69         color: #555;
70       }
71       input[type="submit"] {
72         padding: 12px;
73         background-color: #87CEEB;
74         color: white;
75         border: none;
76         border-radius: 5px;
77         cursor: pointer;
78         font-size: 16px;
79       }
80     
```

```
background-color: #4682B4;
}
</style>
</head>
<body>
    <div class="container">
        <a align="center">
        <h1>User Registration</h1>

        <form action="register" method="post">
            <div class="role-container">
                <label>
                    <input type="radio" id="admin" name="role" value="Admin" required>
                </label>
                <label>
                    <input type="radio" id="student" name="role" value="Pelajar" required>
                </label>
                <label>
                    <input type="radio" id="pic" name="role" value="Pic" required>
                </label>
            </div>

            <label for="username">Username:</label>
            <input type="text" id="username" name="username" required>

            <label for="password">Password:</label>
            <input type="password" id="password" name="password" required>

            <label for="email">Email:</label>
            <input type="email" id="email" name="email" required>

            <label for="phone">Phone:</label>
            <input type="tel" id="phone" name="phone">

            <input type="submit" value="Register">
        </form>
    </div>
</body>
</html>
```

DIAGRAM 15

Login.jsp

```
7  <%@ page contentType="text/html" pageEncoding="UTF-8"%>
8  <!DOCTYPE html>
9  <html lang="en">
10 <head>
11   <meta charset="UTF-8">
12   <meta name="viewport" content="width=device-width, initial-scale=1.0">
13   <title>Login - Aduan Kolej Redikama</title>
14   <style>
15     body {
16       font-family: Arial, sans-serif;
17       background: rgb(238, 174, 202);
18       background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,
19       display: flex;
20       justify-content: center;
21       align-items: center;
22       height: 100vh;
23       margin: 0;
24     }
25
26     .container {
27       background-color: #FFFFFF;
28       padding: 25px 35px;
29       border-radius: 10px;
30       box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
31       width: 350px;
32       text-align: center;
33     }
34
35     h1 {
36       margin-bottom: 10px;
37       color: #5A2BE2;
38     }
39
40     h2 {
41       margin-bottom: 20px;
42       color: #5A2BE2;
43     }
44
45     .form-group {
46       margin-bottom: 10px;
47     }
48
49     .button {
50       background-color: #5A2BE2;
51       color: white;
52       border: none;
53       padding: 10px 20px;
54       font-size: 16px;
55       cursor: pointer;
56     }
57
58     .button:disabled {
59       background-color: #C0C0C0;
60       color: #5A2BE2;
61       cursor: not-allowed;
62     }
63
64     .error {
65       color: red;
66       font-weight: bold;
67     }
68   </style>
69 </head>
70 <body>
71   <div class="container">
72     <h1>Login</h1>
73     <form>
74       <div class="form-group">
75         <label>Email</label>
76         <input type="text" name="email" value=""></input>
77       </div>
78       <div class="form-group">
79         <label>Password</label>
80         <input type="password" name="password" value=""></input>
81       </div>
82       <div>
83         <input type="checkbox" checked="" name="remember"> Remember me
84       </div>
85       <div>
86         <button type="submit" value="Login" disabled="disabled">Login</button>
87       </div>
88     </form>
89   </div>
90 </body>
91 </html>
```

```
40         h2 {
41             margin-bottom: 20px;
42             color: #8A2BE2;
43         }
44
45         label {
46             display: block;
47             margin: 10px 0 5px;
48             text-align: left;
49             color: #555;
50         }
51
52         input[type="text"],
53         input[type="password"] {
54             width: 100%;
55             padding: 10px;
56             margin-bottom: 15px;
57             border: 1px solid #ccc;
58             border-radius: 5px;
59             background-color: #FAF3DD;
60         }
61
62         button {
63             width: 100%;
64             padding: 12px;
65             background-color: #87CEEB;
66             color: white;
67             border: none;
68             border-radius: 5px;
69             cursor: pointer;
70             font-size: 16px;
71         }
72
73         button:hover {
74             background-color: #4682B4;
75         }
```

```
76     .role-container {
77         display: flex;
78         justify-content: space-between;
79         margin-bottom: 15px;
80     }
81
82     .role-container label {
83         display: flex;
84         align-items: center;
85         color: #555;
86     }
87
88     .error-message {
89         color: red;
90         font-weight: bold;
91         margin-top: 10px;
92     }
93
94 </style>
95 <script>
96     function handleLoginFormSubmit(event) {
97         event.preventDefault() // Prevent the form from submitting normally
98
99         // Get the selected role
100        var role = document.querySelector('input[name="role"]:checked');
101        if (!role) {
102            alert("Please select a role.");
103            return;
104        }
105
106        // Get username and password
107        var username = document.getElementById('username').value.trim();
108        var password = document.getElementById('password').value.trim();
109
110        // Validate username and password
111        if (username === "" || password === "") {
```

```
112            alert("Please enter both username and password.");
113            return;
114        }
115
116        // Submit the form
117        document.getElementById('loginForm').submit();
118    }
119 </script>
120 </head>
121 <body>
122     <div class="container">
123         <a href="#"></a>
124         <h1>Aduan Kolej Kediaman</h1>
125         <h2>Login</h2>
126
127         <%-- Display error message if login fails --%>
128         <% String errorMessage = (String) request.getAttribute("errorMessage"); %>
129         <% if (errorMessage != null && errorMessage.isEmpty()) { %>
130             <div class="error-message"><%= errorMessage %></div>
131         <% } %>
132
133         <form id="loginForm" action="login" method="post" onsubmit="handleLoginFormSubmit(this)">
134             <div class="role-container">
135                 <label>
136                     <input type="radio" id="admin" name="role" value="Admin" checked="checked" />
137                 </label>
138                 <label>
139                     <input type="radio" id="student" name="role" value="Pelajar" />
140                 </label>
141                 <label>
142                     <input type="radio" id="pic" name="role" value="Pic" required="required" />
143                 </label>
144             </div>
145
146             <label for="username">ID:</label>
147             <input type="text" id="username" name="username" required="required" />
```

```
    <form>
        <label for="password">Password:</label>
        <input type="password" id="password" name="password" required>
        <button type="submit">Login</button>
    </form>
    <p>Belum mempunyai akaun? <a href="register.jsp">Daftar di sini</a>.</p>
</div>
</body>
</html>
```

DIAGRAM 16

AduanBaru-Pelajar.jsp

```
<%@ page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Aduan Baru - Pelajar</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            background: radial-gradient(circle, rgba(238,174,202) 0%, rgba(155,149,131) 100vh);
            margin: 0;
            padding: 0;
            display: flex;
            height: 100vh;
        }
        .sidenav {
            height: 100%;
            width: 220px;
            position: fixed;
            background-color: #4682B4;
            overflow-x: hidden;
            padding-top: 20px;
        }
        .sidenav h2 {
            color: black;
            text-align: center;
        }
        .sidenav a {
            padding: 10px 15px;
            text-decoration: none;
            font-size: 18px;
            color: black;
        }
        .container {
            margin-left: 220px;
            padding: 20px;
            background-color: #ffffff;
            border-radius: 5px;
            box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
            flex-grow: 1;
            position: absolute;
            top: 0;
            bottom: 0;
            right: 0;
            left: 0;
            overflow-y: auto;
        }
        h1, h2, h3 {
            text-align: left;
            color: #8A2BE2;
        }
        form {
            display: flex;
            flex-direction: column;
            max-width: 1250px;
            margin: 0 auto;
        }
        label {
            margin-bottom: 5px;
            color: #555;
        }
        input,
        textarea,
        select {
            width: 100%;
```

```
85         select {
86             margin-bottom: 15px;
87             padding: 8px;
88             border: 1px;
89             border-radius: 3px;
90             background-color: #FAF3DD;
91         }
92
93         button {
94             padding: 10px;
95             background-color: #87CEEB;
96             color: white;
97             border: none;
98             border-radius: 3px;
99             cursor: pointer;
100            font-size: 16px;
101        }
102
103        button:hover {
104            background-color: #4682B4;
105        }
106
107        .w3-container {
108            background: #e0e0e0;
109            padding: 1px;
110            border-radius: 3px;
111            border: 1px solid #ccc;
112            margin-bottom: 15px;
113        }
114
115        .box {
116            border: 1px solid #ddd;
117            border-radius: 5px;
118            margin-bottom: 20px;
119            background-color: #fff;
120        }
121
```

```
144
145     .box-header {
146         padding: 10px;
147         border-bottom: 1px solid #ddd;
148     }
149
150     .box-title {
151         margin: 0;
152         font-size: 18px;
153     }
154
155     .box-body {
156         padding: 10px;
157     }
158
159     .custom-select select {
160         width: 100%;
161         padding: 8px;
162         font-size: 14px;
163         border: 1px solid #ccc;
164         border-radius: 3px;
165         background-color: #FAF3DD;
166     }
167
168     @media screen and (max-width: 600px) {
169         body {
170             flex-direction: column;
171         }
172
173         .sidenav {
174             width: 100%;
175             height: auto;
176             position: relative;
177         }
178
179         .sidenav a {
180             text-align: center;
181         }
182     }
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
```

```
162     </head>
163     <body>
164         <div class="sidenav">
165             <a align="center" href="SenaraiAduan-Pelajar.jsp"><img id="logo" style="width: 100%; height: 100%; object-fit: cover;" alt="Logo of the institution" /></a>
166             <h2>Aduan Pelajar</h2>
167             <a href="AduanBaru-Pelajar.jsp">Aduan Baru</a>
168             <a href="SenaraiAduan-Pelajar.jsp">Senarai Aduan</a>
169         </div>
170         <div class="container">
171             <h1>Aduan Baru</h1>
172             <div class="box box-primary">
173                 <div class="box-header with-border">
174                     <h3 class="box-title">Boorang Aduan</h3>
175                 </div>
176                 <div class="box-body">
177                     <div class="w3-container">
178                         <h5 align="center"><b>Maklumat Pengadu</b></h5>
179                     </div>
180
181                     <form id="complaintForm" action="BoorangAduan-Pelajar.jsp" method="post">
182                         <label form="studentName">Nama:</label>
183                         <input type="text" id="studentName" name="studentName" required>
184
185                         <label form="studentID">ID:</label>
186                         <input type="text" id="studentID" name="studentID" required>
187
188                         <label form="studentEmail">Email:</label>
189                         <input type="email" id="studentEmail" name="studentEmail" required>
190
191                         <label form="phoneNo">No. Telefon:</label>
192                         <input type="text" id="phoneNo" name="phoneNo" required>
193
194                         <div class="w3-container">
195                             <h5 align="center"><b>Maklumat Aduan</b></h5>
196                         </div>
197                         <label form="lokasiBlok">Blok:</label>
198                     </form>
199                 </div>
200             </div>
201         </div>
202     </body>
203 
```

```

194 <div class="w3-container">
195   <h5 align="center"><b>Maklumat Aduan</b></h5>
196 </div>
197 <label for="lokasiBlok">Blok:</label>
198 <div class="custom-select">
199   <select id="lokasiBlok" name="lokasiBlok" required>
200     <option value="">Pilih Blok</option>
201     <option value="ATB">At-Thabranī (ATB)</option>
202     <option value="ATT">At-Tarmidzi (ATT)</option>
203     <option value="IS">Ibnu Sina (IS)</option>
204     <option value="IH">Ibnu Hibban (IH)</option>
205     <option value="IM">Ibnu Majah (IM)</option>
206     <option value="IA">Ibnu Abbas (IA)</option>
207     <option value="IJ">Ibnu Jarir (IJ)</option>
208     <option value="ANN">An Nasai' (ANN)</option>
209   </select>
210 </div><br>
211 <label for="lokasiAras">Aras:</label>
212 <div class="custom-select">
213   <select id="lokasiAras" name="lokasiAras" required>
214     <option value="">Pilih Aras</option>
215     <option value="Ara 1">Aras 1</option>
216     <option value="Ara 2">Aras 2</option>
217     <option value="Ara 3">Aras 3</option>
218     <option value="Ara 4">Aras 4</option>
219   </select>
220 </div><br>
221 <label for="lokasiBilik">No. Bilik:</label>
222 <div class="custom-select">
223   <select id="lokasiBilik" name="lokasiBilik" required>
224     <option value="">Pilih No. Bilik</option>
225     <option value="IA-306">IA-306</option>
226     <option value="IJ-307">IJ-307</option>
227     <option value="ANN-308">ANN-308</option>
228     <option value="IS-303">IS-303</option>
229   </select>
230 ...
```



```

232 <label for="lokasiLain">Lokasi Lain-lain:</label>
233 <input type="text" id="lokasiLain" name="lokasiLain">
234 <label for="jenisAduan">Jenis Kerosakan/Aduan:</label>
235 <div class="custom-select">
236   <select id="jenisAduan" name="jenisAduan" required>
237     <option value="">Pilih Jenis Aduan</option>
238     <option value="kerosakanAwam">Kerosakan Awam</option>
239     <option value="kerosakanElektrikal">Kerosakan Elektrikal</option>
240     <option value="kerosakanPerabot">Kerosakan Perabot</option>
241     <option value="lain-lain">Lain-lain (Aduan Umum)</option>
242   </select>
243 </div><br>
244 <label for="detailAduan">Detail Kerosakan/Aduan:</label>
245 <textarea id="detailAduan" name="detailAduan" required></textarea>
246 <label for="keteranganAduan">Keterangan Kerosakan/Aduan:</label>
247 <textarea id="keteranganAduan" name="keteranganAduan" required></textarea>
248 <button type="submit">Seterusnya</button><br>
249 <button type="reset">Batal</button>
250 </form>
251 </div>
252 </div>
253 </div>
254 </div>
255 </body>
256 </html>
257 ...
```

DIAGRAM 17

SenaraiAduan-Pelajar.jsp

```
7  <%@ page contentType="text/html; charset=UTF-8" language="java" %>
8  <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
9  <!DOCTYPE html>
10 <html lang="en">
11 <head>
12     <meta charset="UTF-8">
13     <meta name="viewport" content="width=device-width, initial-scale=1.0">
14     <title>Senarai Aduan Pelajar</title>
15     <style>
16         body {
17             font-family: Arial, sans-serif;
18             background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,
19                 149, 134, 1) 100%);
20             margin: 0;
21             padding: 0;
22             display: flex;
23             height: 100vh;
24         }
25         .sidenav {
26             height: 100%;
27             width: 220px;
28             position: fixed;
29             background-color: #4682B4;
30             overflow-x: hidden;
31             padding-top: 20px;
32         }
33         .sidenav h2 {
34             color: black;
35             text-align: center;
36         }
37         .sidenav a {
38             padding: 10px 15px;
39             text-decoration: none;
40             font-size: 16px;
41         }
42     </style>
```

```
46         .sidenav a:hover {
47             color: black;
48             background-color: #91aeb3;
49         }
50
51         .container {
52             margin-left: 220px;
53             padding: 20px;
54             background-color: #fffffe;
55             border-radius: 5px;
56             box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
57             flex-grow: 1;
58             overflow-y: auto;
59         }
60
61         h1 {
62             text-align: center;
63             color: #8A2BE2;
64         }
65
66         table {
67             width: 100%;
68             border-collapse: collapse;
69             margin-top: 20px;
70         }
71
72         table, th, td {
73             border: 1px solid #ccc;
74             padding: 8px;
75             text-align: left;
76         }
77
78         tr:nth-child(even) {
79             background-color: #f2f2f2;
80         }
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116     </style>
```

```
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116     </style>
```

```

117    </head>
118    <body>
119      <div class="sidenav">
120        <a align="center" href="SenaraiAduan-Pelajar.jsp"><img id="logoc" style="width: 100px; height: 100px;" alt="Logo" /></a>
121        <h2>Aduan Pelajar</h2>
122        <a href="AduanBaru-Pelajar.jsp">Aduan Baru</a>
123        <a href="SenaraiAduan-Pelajar.jsp">Senarai Aduan</a>
124      </div>
125      <div class="container">
126        <h1>Senarai Aduan Pelajar</h1>
127        <form method="get" action="ComplaintListServlet">
128          <input type="hidden" name="pageSource" value="Pelajar">
129          <input type="text" id="searchInput" name="search" placeholder="Cari aduan...">
130          <button type="submit">Cari</button>
131        </form>
132
133
134        <table id="aduanTable">
135          <thead>
136            <tr>
137              <th>ID</th>
138              <th>Student Name</th>
139              <th>Student ID</th>
140              <th>Student Email</th>
141              <th>Phone No.</th>
142              <th>Block</th>
143              <th>Area</th>
144              <th>No Bilik</th>
145              <th>Lokasi Lain</th>
146              <th>Jenis Aduan</th>
147              <th>Tarikh Aduan</th>
148              <th>Action Notes</th>
149              <th>Action Staff</th>
150              <th>Tindakan</th>
151            </tr>
152          </thead>
153
154          <tbody>
155            <:forEach var="complaint" items="${complaintList}">
156              <tr>
157                <td>${complaint.id}</td>
158                <td>${complaint.studentName}</td>
159                <td>${complaint.studentID}</td>
160                <td>${complaint.studentEmail}</td>
161                <td>${complaint.phoneNo}</td>
162                <td>${complaint.lokasiBlock}</td>
163                <td>${complaint.lokasiArea}</td>
164                <td>${complaint.lokasiBilik}</td>
165                <td>${complaint.lokasiLain}</td>
166                <td>${complaint.jenisAduan}</td>
167                <td>${complaint.tarikhAduan}</td>
168                <td>${complaint.actionNotes}</td>
169                <td>${complaint.actionStaff}</td>
170                <td><a href="complaintDetails?id=${complaint.id}">LIHAT</a></td>
171              </tr>
172            </:forEach>
173          </tbody>
174        </table>
175      </div>
176
177      <script>
178        // Filter function for search input
179        document.getElementById('searchInput').addEventListener('keyup', function()
180          var input, filter, table, tr, td, i, txtValue;
181          input = document.getElementById("searchInput");
182          filter = input.value.toUpperCase();
183          table = document.getElementById("aduanTable");
184          tr = table.getElementsByTagName("tr");
185
186          for (i = 0; i < tr.length; i++) {
187            td = tr[i].getElementsByTagName("td")[1]; // Index 1 for Student Name
188            if (td) {
189              txtValue = td.textContent || td.innerText;
190              if (txtValue.toUpperCase().indexOf(filter) > -1) {
191                tr[i].style.display = "";
192              } else {
193                tr[i].style.display = "none";
194              }
195            }
196          });
197      </script>
198    </body>
199  </html>
200

```

DIAGRAM 18

ButiranAduan-Pelajar.jsp

```
1 <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
2 <%@ page import="java.sql.*" %>
3 <%@ page import="com.model.ComplaintList" %>
4 <jsp:useBean id="complaint" class="com.model.ComplaintList" scope="request" />
5
6 <%-->
7     Document : ComplaintDetails
8     Created on : Jun 29, 2024
9     Author : 867554
10    --%>
11
12 <%
13     int complaintId = Integer.parseInt(request.getParameter("id")); // Get complaint ID
14
15     Connection conn = null;
16     PreparedStatement stmt = null;
17     ResultSet rs = null;
18
19     try {
20         Class.forName("com.mysql.cj.jdbc.Driver");
21         String jdbcUrl = "jdbc:mysql://localhost:3306/crmwebproject";
22         String jdbcUser = "root";
23         String jdbcPassword = "admin";
24         conn = DriverManager.getConnection(jdbcUrl, jdbcUser, jdbcPassword);
25
26         String sql = "SELECT * FROM complaints WHERE id = ?";
27         stmt = conn.prepareStatement(sql);
28         stmt.setInt(1, complaintId);
29         rs = stmt.executeQuery();
30
31         if (rs.next()) {
32             complaint.setId(rs.getInt("id"));
33             complaint.setStudentName(rs.getString("studentName"));
34             complaint.setStudentID(rs.getString("studentID"));
35             complaint.setStudentEmail(rs.getString("studentEmail"));
36             complaint.setPhoneNo(rs.getString("phoneNo"));
37
38             complaint.setLokasiAras(rs.getString("lokasiAras"));
39             complaint.setLokasiBilik(rs.getString("lokasiBilik"));
40             complaint.setLokasiLain(rs.getString("lokasiLain"));
41             complaint.setJenisAduan(rs.getString("jenisAduan"));
42             complaint.setDetailAduan(rs.getString("detailAduan"));
43             complaint.setKeteranganAduan(rs.getString("keteranganAduan"));
44             complaint.setStatus(rs.getString("status"));
45             complaint.setTarikhAduan(rs.getTimestamp("tarikhAduan"));
46             complaint.setActionNotes(rs.getString("actionNotes"));
47             complaint.setActionStaff(rs.getString("actionstaff"));
48         } else {
49             out.println("<p>No complaint found with the given ID.</p>");
50         }
51     } catch (Exception e) {
52         e.printStackTrace();
53         out.println("<p>Error: " + e.getMessage() + "</p>");
54     } finally {
55         try {
56             if (rs != null) rs.close();
57             if (stmt != null) stmt.close();
58             if (conn != null) conn.close();
59         } catch (SQLException e) {
60             e.printStackTrace();
61         }
62     }
63 %>
64
65 <!DOCTYPE html>
66 <html>
67     <head>
68         <meta charset="UTF-8">
69         <title>Butiran Aduan Pelajar</title>
70     </head>
```

```
71     body {
72         font-family: Arial, sans-serif;
73         background: rgb(33,174,202);
74         background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,149,134,1) 100%);
75         margin: 0;
76         padding: 0;
77         display: flex;
78         height: 100vh;
79     }
80
81     .sidenav {
82         height: 100%;
83         width: 220px;
84         position: fixed;
85         background-color: #4682B4;
86         overflow-x: hidden;
87         padding-top: 20px;
88     }
89
90     .sidenav h2 {
91         color: black;
92         text-align: center;
93     }
94
95     .sidenav a {
96         padding: 10px 15px;
97         text-decoration: none;
98         font-size: 16px;
99         color: black;
100        display: block;
101    }
102
103    .sidenav a:hover {
104        color: black;
105        background-color: #9faeb3;
```

```
107     .container {
108         margin-left: 220px;
109         padding: 20px;
110         background-color: #ffffff;
111         border-radius: 5px;
112         box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
113         flex-grow: 1;
114         position: absolute;
115         top: 0;
116         bottom: 0;
117         right: 0;
118         left: 0;
119         overflow-y: auto;
120     }
121
122     h1, h2, h3 {
123         text-align: left;
124         color: #8AZBE2;
125     }
126
127     form {
128         display: flex;
129         flex-direction: column;
130         max-width: 1250px;
131         margin: 0 auto;
132     }
133
134     label {
135         margin-bottom: 5px;
136         color: #555;
137     }
138
139     input,
140     textarea,
141     select {
142         margin-bottom: 15px;
```

```
142         margin-bottom: 15px;
143         padding: 8px;
144         border: 1px;
145         border-radius: 3px;
146         background-color: #FAF3DD;
147     }
148
149     button {
150         padding: 10px;
151         background-color: #87CEEB;
152         color: white;
153         border: none;
154         border-radius: 3px;
155         cursor: pointer;
156         font-size: 16px;
157     }
158
159     button:hover {
160         background-color: #4682B4;
161     }
162
163     .w3-container {
164         background: #a495b5;
165         padding: 1px;
166         border-radius: 3px;
167         border: 1px solid #ccc;
168         margin-bottom: 15px;
169     }
170
171     .box {
172         border: 1px solid #ddd;
173         border-radius: 5px;
174         margin-bottom: 20px;
175         background-color: #fff;
176     }
177
```

```
178     .box-header {
179         padding: 10px;
180         border-bottom: 1px solid #ddd;
181     }
182
183     .box-title {
184         margin: 0;
185         font-size: 18px;
186     }
187
188     .box-body {
189         padding: 10px;
190     }
191
192     .custom-select select {
193         width: 100%;
194         padding: 8px;
195         font-size: 14px;
196         border: 1px solid #ccc;
197         border-radius: 3px;
198         background-color: #FAF3DD;
199     }
200
201     @media screen and (max-width: 600px) {
202         body {
203             flex-direction: column;
204         }
205
206         .sidenav {
207             width: 100%;
208             height: auto;
209             position: relative;
210         }
211
212         .sidenav a {
213             text-align: center;
214             ...
```

```
218 </head>
219 </body>
220 <div class="sidenav">
221     <a href="SenaraiAduan-Pelajar.jsp"><img id="logo" style="width: 100px; height: 100px;" alt="Logo of Aduan Baru" /></a>
222     <h2>Aduan Pelajar</h2>
223     <a href="AduanBaru-Pelajar.jsp">Aduan Baru</a>
224     <a href="SenaraiAduan-Pelajar.jsp">Senarai Aduan</a>
225 </div>
226 <div class="container">
227     <h1>Butiran Aduan</h1>
228     <div class="box box-primary">
229         <div class="box-header with-border">
230             <h3 class="box-title">Butiran</h3>
231         </div>
232
233         <div class="box-body">
234             <div class="w3-container">
235                 <h5 align="center"><b>Maklumat Pengadu</b></h5>
236             </div>
237
238             <form action="ComplaintListServlet" method="post">
239                 <label for="studentName">Nama:</label>
240                 <input type="text" id="studentName" name="studentName" value=<@= studentName ></input>
241
242                 <label for="studentID">ID:</label>
243                 <input type="text" id="studentID" name="studentID" value=<@= studentID ></input>
244
245                 <label for="studentEmail">E-maill:</label>
246                 <input type="text" id="studentEmail" name="studentEmail" value=<@= studentEmail ></input>
247
248                 <label for="phoneNo">No. Telefon:</label>
249                 <input type="text" id="phoneNo" name="phoneNo" value=<@= phoneNo ></input>
250
251
252                 <div class="w3-container">
253                     <h5 align="center"><b>Maklumat Aduan</b></h5>
254                 </div>
255
256                 <label for="lokasiBlok">Blok:</label>
257                 <input type="text" id="lokasiBlok" name="lokasiBlok" value=<@= lokasiBlok ></input>
258
259                 <label for="lokasiAras">Aras:</label>
260                 <input type="text" id="lokasiAras" name="lokasiAras" value=<@= lokasiAras ></input>
261
262                 <label for="lokasiBilik">No. Bilik:</label>
263                 <input type="text" id="lokasiBilik" name="lokasiBilik" value=<@= lokasiBilik ></input>
264
265                 <label for="lokasiLain">Lokasi lain-lain:</label>
266                 <input type="text" id="lokasiLain" name="lokasiLain" value=<@= lokasiLain ></input>
267
268                 <label for="jenisAduan">Jenis Kerosakan/Aduan:</label>
269                 <input type="text" id="jenisAduan" name="jenisAduan" value=<@= jenisAduan ></input>
270
271                 <label for="detailAduan">Detail kerosakan/aduan:</label>
272                 <input type="text" id="detailAduan" name="detailAduan" value=<@= detailAduan ></input>
273
274                 <label for="keteranganAduan">Keterangan kerosakan/aduan:</label>
275                 <input id="keteranganAduan" name="keteranganAduan" value=<@= keteranganAduan ></input>
276
277                 <div class="w3-container">
278                     <h5 align="center"><b>Maklumat Staf Bertugas</b></h5>
279                 </div>
280
281                 <label for="actionNotes">Catatan:</label>
282                 <input id="actionNotes" name="actionNotes" value=<@= complaintNotes ></input>
283
284                 <label for="actionStaff">Staff Bertugas:</label>
285                 <input id="actionStaff" name="actionStaff" value=<@= complaintStaff ></input>
286             </form>
287         </div>
288     </div>
289 </body>
290 </html>
```

DIAGRAM 19

SenaraiAduan-Admin.jsp

```
7   <%@ page contentType="text/html; charset=UTF-8" language="java" %>
8   <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
9   <!DOCTYPE html>
10  <html lang="en">
11    <head>
12      <meta charset="UTF-8">
13      <meta name="viewport" content="width=device-width, initial-scale=1.0">
14      <title>Semarai Admin Admin</title>
15      <style>
16        body {
17          font-family: Arial, sans-serif;
18          background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,
19          margin: 0;
20          padding: 0;
21          display: flex;
22          height: 100vh;
23        }
24
25        .sidenav {
26          height: 100%;
27          width: 220px;
28          position: fixed;
29          background-color: #4682B4;
30          overflow-x: hidden;
31          padding-top: 20px;
32        }
33
34        .sidenav h2 {
35          color: black;
36          text-align: center;
37        }
38
39        .sidenav a {
40          padding: 10px 15px;
41          text-decoration: none;
42          font-size: 18px;
43        }
44        .sidenav a:hover {
45          background-color: #f1f1f1;
46        }
47      </style>
48    </head>
49    <body>
50      <div class="sidenav">
51        <h2>Semarai Admin</h2>
52        <ul>
53          <li><a href="#">Home</a></li>
54          <li><a href="#">User</a></li>
55          <li><a href="#">Category</a></li>
56          <li><a href="#">Product</a></li>
57          <li><a href="#">Order</a></li>
58        </ul>
59      </div>
60      <div class="main-content">
61        <h1>Welcome to Semarai Admin</h1>
62        <p>This is the main content area of the Semarai Admin application.</p>
63      </div>
64    </body>
65  </html>
```

```
46     .sidenav a:hover {
47         color: black;
48         background-color: #91aabb3;
49     }
50
51     .container {
52         margin-left: 220px;
53         padding: 20px;
54         background-color: #ffffff;
55         border-radius: 5px;
56         box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
57         flex-grow: 1;
58         overflow-y: auto;
59     }
60
61     h1 {
62         text-align: center;
63         color: #8A2BE2;
64     }
65
66     table {
67         width: 100%;
68         border-collapse: collapse;
69         margin-top: 20px;
70     }
71
72     table, th, td {
73         border: 1px solid #ccc;
74         padding: 8px;
75         text-align: left;
76     }
77
78     tr:nth-child(even) {
79         background-color: #f2f2f2;
80     }
81
82
83     th {
84         background: #a495b5;
85         color: white;
86     }
87
88     form {
89         display: flex;
90         flex-direction: column;
91         max-width: 600px;
92         margin: 0 auto 20px auto;
93     }
94
95     input[type="text"],
96     button {
97         padding: 8px;
98         font-size: 14px;
99         border: 1px solid #ccc;
100        border-radius: 3px;
101        margin-bottom: 10px;
102    }
103
104    button {
105        background-color: #87CEEB;
106        color: white;
107        border: none;
108        border-radius: 3px;
109        cursor: pointer;
110        font-size: 16px;
111    }
112
113    button:hover {
114        background-color: #4682B4;
115    }
116
117    </style>
118
119    </head>
120
121    <body>
```

```

119      <div class="sidenav">
120          <a href="#">
121          <h2>Senarai Aduan</h2>
122          <a href="#">
123      </div>
124      <div class="content">
125          <h1>Senarai Aduan Pelajar</h1>
126          <form action="get" method="post" "complaintListServlet">
127              <input type="hidden" name="pageSource" value="Admin">
128              <input type="text" id="searchInput" name="search" placeholder="Cari aduan...">
129              <button type="submit">Car&iuml;i</button>
130          </form>
131
132          <table id="aduanTable">
133              <thead>
134                  <tr>
135                      <th>ID</th>
136                      <th>Student Name</th>
137                      <th>Student ID</th>
138                      <th>Student Email</th>
139                      <th>Phone No</th>
140                      <th>lokasi Blok</th>
141                      <th>lokasi Aras</th>
142                      <th>No Bilik</th>
143                      <th>lokasi Lain</th>
144                      <th>Jenis Aduan</th>
145                      <th>Tarikh Aduan</th>
146                      <th>Action Notes</th>
147                      <th>Action Staff</th>
148                      <th>Tindakan</th>
149                  </tr>
150              </thead>
151              <tbody>
152                  <c:forEach var="complaint" items="${complaintList}">
153                      <tr>
154                          <td>${complaint.id}</td>
155                          <td>${complaint.studentName}</td>
156                          <td>${complaint.studentID}</td>
157                          <td>${complaint.studentEmail}</td>
158                          <td>${complaint.phoneNo}</td>
159                          <td>${complaint.lokasiBlok}</td>
160                          <td>${complaint.lokasiAras}</td>
161                          <td>${complaint.lokasiBilik}</td>
162                          <td>${complaint.lokasiLain}</td>
163                          <td>${complaint.jenisAduan}</td>
164                          <td>${complaint.tarikhAduan}</td>
165                          <td>${complaint.actionNotes}</td>
166                          <td>${complaint.actionStaff}</td>
167                          <td><a href="KemaskiniAduan-Admin.jsp?id=${complaint.id}">Kemaskini</a></td>
168                      </tr>
169                  </c:forEach>
170              </tbody>
171          </table>
172      </div>
173
174      <script>
175          // Filter function for search input
176          document.getElementById('searchInput').addEventListener('keyup', function()
177              var input, filter, table, tr, td, i, txtValue;
178              input = document.getElementById('searchInput');
179              filter = input.value.toUpperCase();
180              table = document.getElementById("aduanTable");
181              tr = table.getElementsByTagName("tr");
182
183              for (i = 0; i < tr.length; i++) {
184                  td = tr[i].getElementsByTagName("td")[1]; // Index 1 for Student ID
185                  if (td) {
186                      txtValue = td.textContent || td.innerText;
187                      if (txtValue.toUpperCase().indexOf(filter) > -1) {
188                          tr[i].style.display = "";
189                      } else {
190                          tr[i].style.display = "none";
191                      }
192                  }
193              }
194          );
195      </script>
196  </body>
197 </html>

```

KemaskiniAduan-Admin.jsp

```
7  <%@ page contentType="text/html;charset=UTF-8" language="java" %>
8  <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
9  <!DOCTYPE html>
10 <html>
11   <head>
12     <meta charset="UTF-8">
13     <title>Remaskini Aduan Admin</title>
14     <style>
15       body {
16         font-family: Arial, sans-serif;
17         background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,
18           149, 134, 1) 100%);
19         margin: 0;
20         padding: 0;
21         display: flex;
22         height: 100vh;
23       }
24       .sidenav {
25         height: 100%;
26         width: 220px;
27         position: fixed;
28         background-color: #4682B4;
29         overflow-x: hidden;
30         padding-top: 20px;
31       }
32       .sidenav h2 {
33         color: black;
34         text-align: center;
35       }
36       .sidenav a {
37         padding: 10px 15px;
38         text-decoration: none;
39         font-size: 16px;
40         color: black;
41         display: block;
42       }

```

```
49
50       .container {
51         margin-left: 220px;
52         padding: 20px;
53         background-color: #eeeeee;
54         border-radius: 5px;
55         box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
56         flex-grow: 1;
57         position: absolute;
58         top: 0;
59         bottom: 0;
60         right: 0;
61         left: 0;
62         overflow-y: auto;
63       }
64
65       h1, h2, h3 {
66         text-align: left;
67         color: #8A2BE2;
68       }
69
70       form {
71         display: flex;
72         flex-direction: column;
73         max-width: 1250px;
74         margin: 0 auto;
75       }
76
77       label {
78         margin-bottom: 5px;
79         color: #555;
80       }
81
82       input,
83       textarea,

```

```
84       select {
85         margin-bottom: 15px;
86         padding: 5px;
87         border: 1px solid #ccc;
88         border-radius: 3px;
89         background-color: #FAF3D0;
90       }
91
92       button {
93         padding: 10px;
94         background-color: #87CEEB;
95         color: white;
96         border: none;
97         border-radius: 3px;
98         cursor: pointer;
99         font-size: 16px;
100      }
101
102      button:hover {
103        background-color: #4682B4;
104      }
105
106      .w3-container {
107        background: #495b5;
108        padding: 1px;
109        border-radius: 3px;
110        border: 1px solid #ccc;
111        margin-bottom: 15px;
112      }
113
114      .box {
115        border: 1px solid #ddd;
116        border-radius: 5px;
117        margin-bottom: 20px;
118        background-color: #fff;
119      }

```

```

121     .box-header {
122         padding: 10px;
123         border-bottom: 1px solid #ddd;
124     }
125
126     .box-title {
127         margin: 0;
128         font-size: 18px;
129     }
130
131     .box-body {
132         padding: 10px;
133     }
134
135     .custom-select select {
136         width: 100%;
137         padding: 6px;
138         font-size: 14px;
139         border: 1px solid #ccc;
140         border-radius: 3px;
141         background-color: #FAF3DD;
142     }
143
144     @media screen and (max-width: 600px) {
145         body {
146             flex-direction: column;
147         }
148
149         .sidenav {
150             width: 100%;
151             height: auto;
152             position: relative;
153         }
154
155         .sidenav a {
156             text-align: center;
157         }
158     }
159
160     </head>
161     <body>
162         <div class="sidenav">
163             <a align="center" href="SenaraiAduan-Admin.jsp"><img id="logo" style="width: 100%; height: auto;" alt="Logo" /></a>
164             <h2>Remaskini Aduan</h2>
165             <a href="SenaraiAduan-Admin.jsp">Senarai Aduan</a>
166         </div>
167
168         <div class="container">
169             <h1>Remaskini Aduan</h1>
170             <div class="box box-primary">
171                 <div class="box-header with-border">
172                     <h3 class="box-title">Remaskini</h3>
173                 </div>
174
175                 <div class="box-body">
176                     <div class="w3-container">
177                         <h5 align="center"><b>Maklumat Pengadu</b></h5>
178                     </div>
179
180                     <form action="updateComplaint" method="post" var="complaint" itemscope="itemprop">
181                         <label for="id">ID:</label>
182                         <input type="text" id="id" name="id" value="${complaint.id}">
183
184                         <label for="studentName">Nama:</label>
185                         <input type="text" id="studentName" name="studentName" value="${complaint.studentName}">
186
187                         <label for="studentID">ID:</label>
188                         <input type="text" id="studentID" name="studentID" value="${complaint.studentID}">
189
190                         <label for="studentEmail">E-mail:</label>
191                         <input type="text" id="studentEmail" name="studentEmail" value="${complaint.studentEmail}">
192
193                         <label for="phoneNo">No. Telefon:</label>
194                         <input type="text" id="phoneNo" name="phoneNo" value="${complaint.phoneNo}">
195
196                         <br/>..... Maklumat pengadu
197
198                     <div class="w3-container">
199                         <h5 align="center"><b>Maklumat Aduan</b></h5>
200                     </div>
201
202                         <label for="lokasiBlok">Blok:</label>
203                         <input type="text" id="lokasiBlok" name="lokasiBlok" value="${complaint.lokasiBlok}">
204
205                         <label for="lokasiAras">Aras:</label>
206                         <input type="text" id="lokasiAras" name="lokasiAras" value="${complaint.lokasiAras}">
207
208                         <label for="lokasiBilik">No. Bilik:</label>
209                         <input type="text" id="lokasiBilik" name="lokasiBilik" value="${complaint.lokasiBilik}">
210
211                         <label for="lokasiLain">Lokasi lain-lain:</label>
212                         <input type="text" id="lokasiLain" name="lokasiLain" value="${complaint.lokasiLain}">
213
214                         <label for="jenisAduan">Jenis Kerosakan/Aduan:</label>
215                         <select id="jenisAduan" name="jenisAduan">
216                             <option value="kerosakanAwam" ${complaint.jenisAduan eq 'kerosakanAwam' ? 'selected' : ''}>Kerosakan Awam</option>
217                             <option value="kerosakanElektrikal" ${complaint.jenisAduan eq 'kerosakanElektrikal' ? 'selected' : ''}>Kerosakan Elektrikal</option>
218                             <option value="lain-lain" ${complaint.jenisAduan eq 'lain-lain' ? 'selected' : ''}>Lain-lain</option>
219                         </select><br/>
220
221                         <label for="detailAduan">Detail kerosakan/aduan:</label>
222                         <input type="text" id="detailAduan" name="detailAduan" value="${complaint.detailAduan}">
223
224                         <label for="keteranganAduan">Keterangan kerosakan/aduan:</label>
225                         <input id="keteranganAduan" name="keteranganAduan" value="${complaint.keteranganAduan}">
226
227
228                         <button type="submit">Hantar</button>
229
230                     </form>
231                 </div>
232             </div>
233         </div>
234     </body>

```

DIAGRAM 20

SenaraiAduan-Pic.jsp

```
1  <%@ page contentType="text/html; charset=UTF-8" errorPage="java" %>
2  <!DOCTYPE html>
3  <html lang="en">
4  <head>
5      <meta charset="UTF-8">
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      <title>Senarai Aduan Pic</title>
8      <style>
9          body {
10              font-family: Arial, sans-serif;
11              background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,
12                  128, 164, 1) 100%);
13              margin: 0;
14              padding: 0;
15              display: flex;
16              height: 100vh;
17          }
18
19          .sidenav {
20              height: 100%;
21              width: 220px;
22              position: fixed;
23              background-color: #4682B4;
24              overflow-x: hidden;
25              padding-top: 20px;
26          }
27
28          .sidenav h2 {
29              color: black;
30              text-align: center;
31          }
32
33          .sidenav a {
34              padding: 10px 15px;
35              text-decoration: none;
36              font-size: 18px;
37          }
38
39          .sidenav a:hover {
40              color: black;
41              background-color: #91aeb3;
42          }
43
44
45          .container {
46              margin-left: 220px;
47              padding: 20px;
48              background-color: #fffffe;
49              border-radius: 5px;
50              box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
51              flex-grow: 1;
52              overflow-y: auto;
53          }
54
55
56          h1 {
57              text-align: center;
58              color: #8A2BE2;
59          }
60
61          table {
62              width: 100%;
63              border-collapse: collapse;
64              margin-top: 20px;
65          }
66
67          table, th, td {
68              border: 1px solid #ccc;
69              padding: 8px;
70              text-align: left;
71          }
72
73          tr:nth-child(even) {
74              background-color: #f2f2f2;
75          }
76
77      </style>
78  </head>
79  <body>
```

```
41
42
43
44
45
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59
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95
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97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
```

```
77      th {
78          background: #a495b5;
79          color: white;
80      }
81
82      form {
83          display: flex;
84          flex-direction: column;
85          max-width: 600px;
86          margin: 0 auto 20px auto;
87      }
88
89      input[type="text"],
90      button {
91          padding: 8px;
92          font-size: 14px;
93          border: 1px solid #ccc;
94          border-radius: 3px;
95          margin-bottom: 10px;
96      }
97
98      button {
99          background-color: #87CEEB;
100         color: white;
101         border: none;
102         border-radius: 3px;
103         cursor: pointer;
104         font-size: 16px;
105     }
106
107     button:hover {
108         background-color: #4682B4;
109         ;
110     }
111
112     </style>
113
114  </head>
115  <body>
```

```

113     <div class="sidenav">
114         <a align="center" href="SenaraiAduan-Pic.jsp"><img id="logo" style="width: 100px; height: 100px;" alt="Logo of Senarai Aduan Pelajar" /></a>
115     <h2>Senarai Aduan</h2>
116     <a href="SenaraiAduan-Pic.jsp">Senarai Aduan</a>
117 </div>
118 <div class="container">
119     <h1>Senarai Aduan Pelajar</h1>
120     <form method="get" action="ComplaintListServlet">
121         <input type="hidden" name="pageSource" value="Pic">
122         <input type="text" id="searchInput" name="search" placeholder="Cari aduan...">
123         <button type="submit">Cari</button>
124     </form>
125
126
127     <table id="aduanTable">
128         <thead>
129             <tr>
130                 <th>ID</th>
131                 <th>Student Name</th>
132                 <th>Student ID</th>
133                 <th>Student Email</th>
134                 <th>Phone No.</th>
135                 <th>Block</th>
136                 <th>Aras</th>
137                 <th>No Bilik</th>
138                 <th>Lokasi Lain</th>
139                 <th>Jenis Aduan</th>
140                 <th>Tarikh Aduan</th>
141                 <th>Action Notes</th>
142                 <th>Action Staff</th>
143                 <th>Tindakan</th>
144             </tr>
145         </thead>
146         <tbody>
147             <c:forEach var="complaint" items="${complaintList}">
148                 <tr>
149                     <t

```



```

147             <c:forEach var="complaint" items="${complaintList}">
148                 <tr>
149                     <t

```



```

177
178             for (i = 0; i < tr.length; i++) {
179                 td = tr[i].getElementsByTagName("td")[1]; // Index 1 for Student ID
180                 if (td) {
181                     txtValue = td.textContent || td.innerText;
182                     if (txtValue.toUpperCase().indexOf(filter) > -1) {
183                         tr[i].style.display = "";
184                     } else {
185                         tr[i].style.display = "none";
186                     }
187                 }
188             }
189         </c:forEach>
190     </tbody>
191 </table>
192 </div>

```

DIAGRAM 21

KemaskiniAduan-Pic.jsp

```
7   <!DOCTYPE html>
8   <html lang="en">
9     <head>
10       <meta charset="UTF-8">
11       <meta name="viewport" content="width=device-width, initial-scale=1.0">
12       <title>Kemaskini Tindakan Aduan PIC</title>
13       <style>
14         body {
15           font-family: Arial, sans-serif;
16           background: rgb(238,174,202);
17           background: radial-gradient(circle, rgba(238,174,202,1) 0%, rgba(155,
18             100, 100, 0.1) 100%);
19           margin: 0;
20           padding: 0;
21           display: flex;
22           height: 100vh;
23         }
24         .sidenav {
25           height: 100%;
26           width: 220px;
27           position: fixed;
28           background-color: #4682B4;
29           overflow-x: hidden;
30           padding-top: 20px;
31         }
32         .sidenav h2 {
33           color: black;
34           text-align: center;
35         }
36         .sidenav a {
37           padding: 10px 15px;
38           text-decoration: none;
39           font-size: 18px;
40           color: black;
41           display: block;
42         }
```

```
45       .sidenav a:hover {
46         color: black;
47         background-color: #91e8e3;
48       }
49
50       .container {
51         margin-left: 220px;
52         padding: 20px;
53         background-color: #ffffff;
54         border-radius: 5px;
55         box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
56         flex-grow: 1;
57         position: absolute;
58         top: 0;
59         bottom: 0;
60         right: 0;
61         left: 0;
62         overflow-y: auto;
63       }
64
65       h1, h2, h3 {
66         text-align: left;
67         color: #8A2BE2;
68       }
69
70       form {
71         display: flex;
72         flex-direction: column;
73         max-width: 1250px;
74         margin: 0 auto;
75       }
76
77       label {
78         margin-bottom: 5px;
79         color: #555;
80       }
```

```
82       input,
83       textarea,
84       select {
85         margin-bottom: 15px;
86         padding: 8px;
87         border: 1px;
88         border-radius: 3px;
89         background-color: #FAF3DD;
90       }
91
92       button {
93         padding: 10px;
94         background-color: #87CEEB;
95         color: white;
96         border: none;
97         border-radius: 3px;
98         cursor: pointer;
99         font-size: 16px;
100      }
101
102      button:hover {
103        background-color: #4682B4;
104      }
105
106      .w3-container {
107        background: #a495b5;
108        padding: 1px;
109        border-radius: 3px;
110        border: 1px solid #ccc;
111        margin-bottom: 15px;
112      }
113
114      .box {
115        border: 1px solid #ddd;
116        border-radius: 5px;
117        margin-bottom: 20px;
```

```
121     .box-header {
122         padding: 10px;
123         border-bottom: 1px solid #ddd;
124     }
125
126     .box-title {
127         margin: 0;
128         font-size: 18px;
129     }
130
131     .box-body {
132         padding: 10px;
133     }
134
135     .custom-select select {
136         width: 100%;
137         padding: 8px;
138         font-size: 14px;
139         border: 1px solid #ccc;
140         border-radius: 3px;
141         background-color: #F0F0F0;
142     }
143
144     @media screen and (max-width: 600px) {
145         body {
146             flex-direction: column;
147         }
148
149         .sidenav {
150             width: 100%;
151             height: auto;
152             position: relative;
153         }
154
155         .sidenav a {
156             float: left;
157         }
158
159         .sidenav a {
160             text-align: center;
161             float: none;
162         }
163     }
164 
```

```
</style>
</head>
<body>
    <div class="sidenav">
        <a align="center" href="SenaraiAduan-Pic.jsp"><img id="logo" style="width: 100%; height: 100%; border: none;" alt="Logo" /></a>
        <h2>Tindakan Aduan</h2>
        <a href="SenaraiAduan-Pic.jsp">Senarai Aduan</a>
    </div>
    <div class="container">
        <h1>Kemaskini Tindakan Aduan</h1>
        <div class="box box-primary">
            <div class="box-header with-border">
                <h3 class="box-title">Tindakan</h3>
            </div>
            <div class="box-body">
                <div class="w3-container">
                    <h5 align="center"><b>Maklumat Pengadu</b></h5>
                </div>
                <form action="updateComplaint" method="post">
                    <label for="id">ID:</label>
                    <input type="text" id="id" name="id" value="${complaint.id}">
                    <label for="studentName">Nama:</label>
                    <input type="text" id="studentName" name="studentName" value="${complaint.studentName}">
                    <label for="studentID">ID:</label>
                    <input type="text" id="studentID" name="studentID" value="${complaint.studentID}">
                    ...
                </form>
            </div>
        </div>
    </div>

```

```
183     <label for="studentID">ID:</label>
184     <input type="text" id="studentID" name="studentID" value="${complaint.studentID}">
185
186     <label for="studentEmail">E-mail:</label>
187     <input type="text" id="studentEmail" name="studentEmail" value="${complaint.studentEmail}">
188
189     <label for="phoneNo">No. Telefon:</label>
190     <input type="text" id="phoneNo" name="phoneNo" value="${complaint.phoneNo}">
191
192     <div class="w3-container">
193         <h5 align="center"><b>Maklumat Aduan</b></h5>
194     </div>
195
196     <label for="lokasiBlok">Blok:</label>
197     <input type="text" id="lokasiBlok" name="lokasiBlok" value="${complaint.lokasiBlok}">
198
199     <label for="lokasiAras">Aras:</label>
200     <input type="text" id="lokasiAras" name="lokasiAras" value="${complaint.lokasiAras}">
201
202     <label for="lokasiBilik">No. Bilik:</label>
203     <input type="text" id="lokasiBilik" name="lokasiBilik" value="${complaint.lokasiBilik}">
204
205     <label for="lokasiLain">Lokasi lain-lain:</label>
206     <input type="text" id="lokasiLain" name="lokasiLain" value="${complaint.lokasiLain}">
207
208     <label for="jenisAduan">Jenis Kerosakan/Aduan:</label>
209     <select id="jenisAduan" name="jenisAduan">
210         <option value="kerosakanAwam" ${complaint.jenisAduan eq 'kerosakanAwam' ? 'selected' : ''}>Kerosakan Awam</option>
211         <option value="kerosakanElektrikal" ${complaint.jenisAduan eq 'kerosakanElektrikal' ? 'selected' : ''}>Kerosakan Elektrikal</option>
212         <option value="kerosakanPerabot" ${complaint.jenisAduan eq 'kerosakanPerabot' ? 'selected' : ''}>Kerosakan Perabot</option>
213         <option value="lain-lain" ${complaint.jenisAduan eq 'lain-lain' ? 'selected' : ''}>Lain-lain</option>
214     </select><br>
215
216     <label for="detailAduan">Detail kerosakan/aduan:</label>
217     <input type="text" id="detailAduan" name="detailAduan" value="${complaint.detailAduan}">
218
219 
```

```

225     <label for="detailAduan">Detail kerusakan/aduan:</label>
226     <input type="text" id="detailAduan" name="detailAduan" value="+" + "kerusakan/aduan"
227     <label for="keteranganAduan">Keterangan kerusakan/aduan:</label>
228     <input id="keteranganAduan" name="keteranganAduan" value="$({complaint.aduan} + " kerusakan/aduan")"/>
229
230     <div class="w3-container">
231         <h5 align="center"><b>Maklumat Staf Bertugas</b></h5>
232     </div>
233
234     <label for="actionNotes">Catatan:</label>
235     <textarea id="actionNotes" name="actionNotes">${complaint.actionNotes}</textarea>
236
237     <label for="actionStaff">Staff Bertugas:</label>
238     <input type="text" id="actionStaff" name="actionStaff" value=" ${complaint.actionStaff}" + " bertugas"/>
239
240     <button type="submit">Hantar</button>
241
242     </form>
243
244     </div>
245 </div>
246 </body>
247 </html>

```

DIAGRAM 22

ComplaintDetailsServlet.java

```

1 package com.controller;
2
3 import com.model.ComplaintList;
4 import java.io.IOException;
5 import java.sql.Connection;
6 import java.sql.DriverManager;
7 import java.sql.PreparedStatement;
8 import java.sql.ResultSet;
9 import java.sql.SQLException;
10 import jakarta.servlet.ServletException;
11 import jakarta.servlet.annotation.WebServlet;
12 import jakarta.servlet.http.HttpServlet;
13 import jakarta.servlet.http.HttpServletRequest;
14 import jakarta.servlet.http.HttpServletResponse;
15
16 @WebServlet("complaintDetails")
17 public class ComplaintDetailsServlet extends HttpServlet {
18
19     private static final long serialVersionUID = 1L;
20
21     private static final String JDBC_URL = "jdbc:mysql://localhost:3306/crmwebproj";
22     private static final String JDBC_USER = "root";
23     private static final String JDBC_PASSWORD = "admin";
24
25     protected void doGet(HttpServletRequest request, HttpServletResponse response)
26             throws ServletException, IOException {
27
28         int complaintId = Integer.parseInt(request.getParameter("id")); // Get complaint ID
29         ComplaintList complaint = null;
30
31         try (Connection conn = DriverManager.getConnection(JDBC_URL, JDBC_USER, JDBC_PASSWORD)) {
32             String sql = "SELECT * FROM complaints WHERE id = ?";
33             try (PreparedStatement stmt = conn.prepareStatement(sql)) {
34                 stmt.setInt(1, complaintId);
35                 try (ResultSet rs = stmt.executeQuery()) {
36                     if (rs.next()) {
37
38                         if (rs.next()) {
39                             complaint = new ComplaintList();
40                             complaint.setId(rs.getInt("id"));
41                             complaint.setStudentName(rs.getString("studentName"));
42                             complaint.setStudentID(rs.getString("studentID"));
43                             complaint.setStudentEmail(rs.getString("studentEmail"));
44                             complaint.setPhoneNo(rs.getString("phoneNo"));
45                             complaint.setLokasiBlok(rs.getString("lokasiBlok"));
46                             complaint.setLokasiAras(rs.getString("lokasiAras"));
47                             complaint.setLokasiLain(rs.getString("lokasiLain"));
48                             complaint.setJenisAduan(rs.getString("jenisAduan"));
49                             complaint.setDetailAduan(rs.getString("detailAduan"));
50                             complaint.setKeteranganAduan(rs.getString("keteranganAduan"));
51                             complaint.setStatus(rs.getString("status"));
52                             complaint.setTarikhAduan(rs.getTimestamp("tarikhAduan"));
53                             complaint.setActionNotes(rs.getString("actionNotes"));
54                             complaint.setActionStaff(rs.getString("actionStaff"));
55
56                         }
57                     } catch (SQLException e) {
58                         e.printStackTrace();
59                     }
60
61                     request.setAttribute("complaint", complaint); // Set complaint object as request attribute
62                     request.getRequestDispatcher("/ButiranAduan-Pelajar.jsp").forward(request, response);
63
64                 }
65             }
66         }
67     }
68 }

```

DIAGRAM 23

ComplaintListServlet.jsp

```
1 package com.controller;
2
3 import com.model.ComplaintList;
4 import java.io.IOException;
5 import java.sql.Connection;
6 import java.sql.DriverManager;
7 import java.sql.PreparedStatement;
8 import java.sql.ResultSet;
9 import java.sql.SQLException;
10 import java.util.ArrayList;
11 import java.util.List;
12 import jakarta.servlet.ServletException;
13 import jakarta.servlet.annotation.WebServlet;
14 import jakarta.servlet.http.HttpServlet;
15 import jakarta.servlet.http.HttpServletRequest;
16 import jakarta.servlet.http.HttpServletResponse;
17
18 @WebServlet("/complaints")
19 public class ComplaintListServlet extends HttpServlet {
20
21     private static final long serialVersionUID = 1L;
22
23     // JDBC URL, username, and password of MySQL server
24     private static final String JDBC_URL = "jdbc:mysql://localhost:3306/crmwebproje";
25     private static final String JDBC_USER = "root";
26     private static final String JDBC_PASSWORD = "admin";
27
28     protected void doGet(HttpServletRequest request, HttpServletResponse response)
29             throws ServletException, IOException {
30
31         // List to hold ComplaintList objects
32         List<ComplaintList> complaintList = new ArrayList<>();
33
34         // JDBC variables
35         Connection conn = null;
36         PreparedStatement stmt = null;
37
38         ResultSet rs = null;
39
40         try {
41             // Connect to the database
42             Class.forName("com.mysql.cj.jdbc.Driver");
43             conn = DriverManager.getConnection(JDBC_URL, JDBC_USER, JDBC_PASSWORD);
44
45             // SQL query to retrieve complaints
46             String sql = "SELECT * FROM complaints";
47             String search = request.getParameter("search");
48             if (search != null && !search.isEmpty()) {
49                 sql += " WHERE studentName LIKE ? OR studentID LIKE ?";
50                 stmt = conn.prepareStatement(sql);
51                 stmt.setString(1, "%" + search + "%");
52                 stmt.setString(2, "%" + search + "%");
53             } else {
54                 stmt = conn.prepareStatement(sql);
55             }
56
57             // Execute the query
58             rs = stmt.executeQuery();
59
60             // Process the result set
61             while (rs.next()) {
62                 // Create ComplaintList object for each row
63                 ComplaintList complaint = new ComplaintList();
64                 complaint.setId(rs.getInt("id"));
65                 complaint.setStudentName(rs.getString("studentName"));
66                 complaint.setStudentID(rs.getString("studentID"));
67                 complaint.setStudentEmail(rs.getString("studentEmail"));
68                 complaint.setPhoneNo(rs.getString("phoneNo"));
69                 complaint.setLokasiBlok(rs.getString("lokasiBlok"));
70                 complaint.setLokasiAras(rs.getString("lokasiAras"));
71                 complaint.setLokasiBilik(rs.getString("lokasiBilik"));
72                 complaint.setLokasiLain(rs.getString("lokasiLain"));
73                 complaint.setJenisAduan(rs.getString("jenisAduan"));
74             }
75         } catch (SQLException e) {
76             e.printStackTrace();
77         } finally {
78             if (stmt != null) {
79                 try {
80                     stmt.close();
81                 } catch (SQLException e) {
82                     e.printStackTrace();
83                 }
84             }
85             if (conn != null) {
86                 try {
87                     conn.close();
88                 } catch (SQLException e) {
89                     e.printStackTrace();
90                 }
91             }
92         }
93     }
94 }
```

```
File | Services [ ]
```

```
71 complaint.setLokasiAduan(rs.getString("lokasiAduan"));
72 complaint.setJenisAduan(rs.getString("jenisAduan"));
73 complaint.setDetailAduan(rs.getString("detailAduan"));
74 complaint.setKeteranganDuhan(rs.getString("keteteranganDuhan"));
75 complaint.setStatus(rs.getString("status"));
76 complaint.setTariikhduan(rs.getTimestamp("tarikhAduan"));
77 complaint.setActionNotes(rs.getString("actionNotes"));
78 complaint.setActionStaff(rs.getString("actionStaff"));

79
80         // Add complaint to list
81         complaintList.add(complaint);
82     }

83
84     // Set the attribute in request to pass data to JSP
85     request.setAttribute("complaintList", complaintList);
86
87     // Retrieve the page source from request parameter
88     String pageSource = request.getParameter("pageSource");
89     System.out.println("Page Source: " + pageSource); // Debugging statement
90
91     // Forward to appropriate JSP based on page source
92     if ("Admin".equalsIgnoreCase(pageSource)) {
93         request.getRequestDispatcher("/SenaraiAduan-Admin.jsp").forward(req);
94     } else if ("Pic".equalsIgnoreCase(pageSource)) {
95         request.getRequestDispatcher("/SenaraiAduan-Pic.jsp").forward(req);
96     } else {
97         request.getRequestDispatcher("/SenaraiAduan-Pelajar.jsp").forward(req);
98     }
99
100 } catch (ClassNotFoundException | SQLException e) {
101     e.printStackTrace(); // Handle errors properly in your application
102 } finally {
103     // Close JDBC objects
104     try {
105         if (rs != null) rs.close();
106         if (stmt != null) stmt.close();
107
108         if (stat != null) stat.close();
109         if (conn != null) conn.close();
110     } catch (SQLException e) {
111         e.printStackTrace(); // Log or handle SQLException properly
112     }
113 }
```

DIAGRAM 24

ComplaintServlet.java

```
1 package com.controller;
2
3 import java.io.IOException;
4 import jakarta.servlet.*;
5 import jakarta.servlet.http.*;
6 import com.model.Complaint;
7 import com.dao.ComplaintDAO;
8 import java.sql.Timestamp;
9 import java.util.List;
10
11 public class ComplaintServlet extends HttpServlet {
12     private static final long serialVersionUID = 1L;
13
14     protected void doGet(HttpServletRequest request, HttpServletResponse response)
15         throws ServletException, IOException {
16         String searchQuery = request.getParameter("search");
17         List<Complaint> complaints;
18         if (searchQuery != null && !searchQuery.trim().isEmpty()) {
19             complaints = ComplaintDAO.searchComplaints(searchQuery);
20         } else {
21             complaints = ComplaintDAO.getAllComplaints();
22         }
23
24         request.setAttribute("complaints", complaints);
25         RequestDispatcher rd = request.getRequestDispatcher("SenaraiAduan-Pelajar.jsp");
26         rd.forward(request, response);
27     }
28
29     protected void doPost(HttpServletRequest request, HttpServletResponse response)
30         throws ServletException, IOException {
31         String studentName = request.getParameter("studentName");
32         String studentID = request.getParameter("studentID");
33         String studentEmail = request.getParameter("studentEmail");
34         String phoneNo = request.getParameter("phoneNo");
35         String lokasiBlok = request.getParameter("lokasiBlok");
36         String lokasiAras = request.getParameter("lokasiAras");
37     }
38 }
```

```
 33     String studentEmail = request.getParameter("studentEmail");
 34     String phoneNo = request.getParameter("phoneNo");
 35     String lokasiBlock = request.getParameter("lokasiBlock");
 36     String lokasiLaras = request.getParameter("lokasiLaras");
 37     String lokasiBilik = request.getParameter("lokasiBilik");
 38     String lokasiLain = request.getParameter("lokasiLain");
 39     String jenisAduan = request.getParameter("jenisAduan");
 40     String detailAduan = request.getParameter("detailAduan");
 41     String keteranganAduan = request.getParameter("keteranganAduan");
 42
 43
 44     Complaint complaint = new Complaint();
 45     complaint.setStudentName(studentName);
 46     complaint.setStudentID(studentID);
 47     complaint.setStudentEmail(studentEmail);
 48     complaint.setPhoneNo(phoneNo);
 49     complaint.setLokasiBlock(lokasiBlock);
 50     complaint.setLokasiLaras(lokasiLaras);
 51     complaint.setLokasiBilik(lokasiBilik);
 52     complaint.setLokasiLain(lokasiLain);
 53     complaint.setJenisAduan(jenisAduan);
 54     complaint.setDetailAduan(detailAduan);
 55     complaint.setKeteranganAduan(keteranganAduan);
 56     complaint.setStatus("Pending");
 57     complaint.setTarikhAduan(new Timestamp(System.currentTimeMillis())).toString()
 58
 59     int status = ComplaintDAO.save(complaint);
 60     if (status > 0) {
 61         response.sendRedirect("SenaraiAduan-Pelajar.jsp");
 62     } else {
 63         request.setAttribute("message", "Unable to submit complaint. Please try
 64         RequestDispatcher rd = request.getRequestDispatcher("BorangAduan-Pelajar.
 65         rd.forward(request, response);
 66     }
 67 }
```

DIAGRAM 25

EditComplaintServlet.java

```
10 /**
11  * 
12  * @author User
13  */
14 
15 public class EditComplaintServlet extends HttpServlet {
16 
17     /**
18      * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
19      * methods.
20      * 
21      * @param request servlet request
22      * @param response servlet response
23      * @throws ServletException if a servlet-specific error occurs
24      * @throws IOException if an I/O error occurs
25      */
26 
27     protected void processRequest(HttpServletRequest request, HttpServletResponse response)
28         throws ServletException, IOException {
29         response.setContentType("text/html;charset=UTF-8");
30         try (PrintWriter out = response.getWriter()) {
31             /* TODO output your page here. You may use following sample code. */
32             out.println("<!DOCTYPE html>");
33             out.println("<html>");
34             out.println("<head>");
35             out.println("<title>Servlet EditComplaintServlet</title>");
36             out.println("</head>");
37             out.println("<body>Servlet EditComplaintServlet at " + request.getContextPath());
38             out.println("</body>");
39             out.println("</html>");
40         }
41     }
42 
43     //HttpServlet methods. Click on the + sign on the left to edit the code.
44 
45 }
```

LoginServlet.java

```
1 package com.controller;
2
3 import com.model.UserLogin;
4 import com.util.DBUtil;
5
6 import java.io.IOException;
7 import java.sql.Connection;
8 import java.sql.PreparedStatement;
9 import java.sql.ResultSet;
10 import java.sql.SQLException;
11 import jakarta.servlet.ServletException;
12 import jakarta.servlet.annotation.MultipartConfig;
13 import jakarta.servlet.annotation.WebServlet;
14 import jakarta.servlet.http.HttpServlet;
15 import jakarta.servlet.http.HttpServletRequest;
16 import jakarta.servlet.http.HttpServletResponse;
17 import jakarta.servlet.http.HttpSession;
18
19 @WebServlet(name = "LoginServlet", urlPatterns = {"/login/*"})
20 @MultipartConfig
21 public class LoginServlet extends HttpServlet {
22     protected void doPost(HttpServletRequest request, HttpServletResponse response) {
23         String username = request.getParameter("username");
24         String password = request.getParameter("password");
25         String role = request.getParameter("role");
26
27         try {
28             Connection conn = DBUtil.getConnection();
29             String sql = "SELECT * FROM Users WHERE username = ? AND password = ? AND role = ?";
30             PreparedStatement statement = conn.prepareStatement(sql);
31             statement.setString(1, username);
32             statement.setString(2, password);
33             statement.setString(3, role);
34
35             ResultSet result = statement.executeQuery();
36         } catch (SQLException e) {
37             e.printStackTrace();
38         }
39     }
40 }
```

```
36
37     if (result.next()) {
38         // Retrieve user details from the database
39         String userEmail = result.getString("email"); // Example retrieval,
40
41         // Create a new UserLogin object
42         UserLogin user = new UserLogin(username, password, role, userEmail);
43
44         // Store the user object in session
45         HttpSession session = request.getSession();
46         session.setAttribute("user", user);
47
48         // Redirect to appropriate page based on role
49         String destinationUrl = "SenaraiKuhan-" + role + ".jsp";
50         response.sendRedirect(destinationUrl);
51     } else {
52         // Show error message if login fails
53         String errorMessage = "Invalid username, password, or role.";
54         request.setAttribute("errorMessage", errorMessage);
55         request.getRequestDispatcher("login.jsp").forward(request, response);
56     }
57
58     // Close JDBC objects
59     result.close();
60     statement.close();
61     conn.close();
62 } catch (SQLException ex) {
63     ex.printStackTrace();
64     response.getWriter().println("Error: " + ex.getMessage());
65 }
66
67 }
68 }
```

DIAGRAM 26

RegisterServlet.java

```
1 package com.controller;
2
3 import java.io.IOException;
4 import java.sql.Connection;
5 import java.sql.PreparedStatement;
6 import java.sql.SQLException;
7 import java.sql.Statement;
8
9 import jakarta.servlet.ServletException;
10 import jakarta.servlet.annotation.WebServlet;
11 import jakarta.servlet.http.HttpServlet;
12 import jakarta.servlet.http.HttpServletRequest;
13 import jakarta.servlet.http.HttpServletResponse;
14
15 import com.model.User;
16 import com.util.DBUtil;
17 import jakarta.servlet.annotation.MultipartConfig;
18
19 @WebServlet(name = "RegisterServlet", urlPatterns = {"/register/*"})
20 @MultipartConfig
21 public class RegisterServlet extends HttpServlet {
22     protected void doPost(HttpServletRequest request, HttpServletResponse response) {
23         String username = request.getParameter("username");
24         String password = request.getParameter("password");
25         String email = request.getParameter("email");
26         String phone = request.getParameter("phone");
27         String role = request.getParameter("role"); // Retrieve role parameter
28
29         // Hash password securely before storing (use proper hashing technique)
30         // For simplicity, assuming plain text password storage (not recommended in
31         String hashedPassword = password;
32
33         User user = new User(username, hashedPassword, email, phone, role);
34
35         Connection conn = null;
36         PreparedStatement statement = null;
```

```

38     try {
39         // Register JDBC driver (if not already registered)
40         Class.forName("com.mysql.cj.jdbc.Driver");
41
42         // Get connection to database
43         conn = DBUtil.getConnection();
44
45         // Prepare SQL statement For insertion
46         String sql = "INSERT INTO Users (username, password, email, phone, role)";
47         statement = conn.prepareStatement(sql);
48         statement.setString(1, user.getUsername());
49         statement.setString(2, user.getPassword());
50         statement.setString(3, user.getEmail());
51         statement.setString(4, user.getPhone());
52         statement.setString(5, user.getRole()); // Set role parameter
53
54         // Execute the statement
55         int rowsInserted = statement.executeUpdate();
56         if (rowsInserted > 0) {
57             // Redirect to login page after successful registration
58             response.sendRedirect("login.jsp");
59         } else {
60             response.getWriter().println("Failed to register user.");
61         }
62     } catch (SQLException | ClassNotFoundException ex) {
63         ex.printStackTrace();
64         response.getWriter().println("Error: " + ex.getMessage());
65     } finally {
66         // Close resources
67         try {
68             if (statement != null) {
69                 statement.close();
70             }
71             if (conn != null) {
72                 conn.close();
73             }
74         } catch (SQLException ex) {
75             ex.printStackTrace();
76         }
77     }
78 }
79

```

DIAGRAM 27

UpdateServlet.java

```

1 package com.controller;
2
3 import java.io.IOException;
4 import java.sql.Connection;
5 import java.sql.DriverManager;
6 import java.sql.PreparedStatement;
7 import java.sql.SQLException;
8 import jakarta.servlet.ServletException;
9 import jakarta.servlet.annotation.WebServlet;
10 import jakarta.servlet.http.HttpServlet;
11 import jakarta.servlet.http.HttpServletRequest;
12 import jakarta.servlet.http.HttpServletResponse;
13
14 @WebServlet("/updatecomplaint")
15 public class UpdateServlet extends HttpServlet {
16     private static final long serialVersionUID = 1L;
17
18     private static final String JDBC_URL = "jdbc:mysql://localhost:3306/crmwebproject";
19     private static final String JDBC_USER = "root";
20     private static final String JDBC_PASSWORD = "admin";
21
22     protected void doPost(HttpServletRequest request, HttpServletResponse response)
23         throws ServletException, IOException {
24
25         String idParam = request.getParameter("id");
26         if (idParam == null || idParam.trim().isEmpty()) {
27             response.getWriter().println("Invalid ID!");
28             return;
29         }
30
31         int id;
32         try {
33             id = Integer.parseInt(idParam);
34         } catch (NumberFormatException e) {
35             response.getWriter().println("Invalid ID format!");
36             return;
37         }
38
39         Connection conn = null;
40         PreparedStatement ps = null;
41
42         try {
43             conn = DriverManager.getConnection(JDBC_URL, JDBC_USER, JDBC_PASSWORD);
44             ps = conn.prepareStatement("UPDATE Complaint SET status = ? WHERE id = ?");
45             ps.setString(1, "Solved");
46             ps.setInt(2, id);
47             ps.executeUpdate();
48         } catch (SQLException e) {
49             e.printStackTrace();
50         } finally {
51             if (ps != null) {
52                 ps.close();
53             }
54             if (conn != null) {
55                 conn.close();
56             }
57         }
58
59         response.sendRedirect("index.jsp");
60     }
61 }

```

```
37     }
38
39     String jenisAduan = request.getParameter("jenisAduan");
40     String detailAduan = request.getParameter("detailAduan");
41     String keteranganAduan = request.getParameter("keteranganAduan");
42     String actionNotes = request.getParameter("actionNotes");
43     String actionStaff = request.getParameter("actionStaff");
44
45     String sql = "UPDATE complaints SET jenisAduan = ?, detailAduan = ?, keteran
46
47     Connection conn = null;
48     PreparedStatement stmt = null;
49
50     try {
51         Class.forName("com.mysql.cj.jdbc.Driver");
52         conn = DriverManager.getConnection(JDBC_URL, JDBC_USER, JDBC_PASSWORD);
53
54         stmt = conn.prepareStatement(sql);
55         stmt.setString(1, jenisAduan);
56         stmt.setString(2, detailAduan);
57         stmt.setString(3, keteranganAduan);
58         stmt.setString(4, actionNotes);
59         stmt.setString(5, actionStaff);
60         stmt.setInt(6, id);
61
62         int rowsAffected = stmt.executeUpdate();
63
64         if (rowsAffected > 0) {
65             response.sendRedirect(request.getContextPath() + "/SenaraiAduan-Admi
66         } else {
67             response.getWriter().println("Update failed!");
68         }
69
70     } catch (ClassNotFoundException | SQLException e) {
71         e.printStackTrace();
72     } finally {
73
74         try {
75             if (stmt != null) stmt.close();
76             if (conn != null) conn.close();
77         } catch (SQLException e) {
78             e.printStackTrace();
79         }
80     }
81 }
82
```

DIAGRAM 28

ComplaintDAO.java

```
1 package com.dao;
2
3 import java.sql.*;
4 import java.util.ArrayList;
5 import java.util.List;
6 import com.model.Complaint;
7 import com.util.DBUtil;
8
9 public class ComplaintDAO {
10
11     private static final String DB_URL = "jdbc:mysql://localhost:3306/crmwebproject";
12     private static final String DB_USER = "root";
13     private static final String DB_PASSWORD = "admin";
14
15     public static Connection getConnection() {
16         Connection conn = null;
17         try {
18             Class.forName("com.mysql.cj.jdbc.Driver");
19             conn = DriverManager.getConnection(DB_URL, DB_USER, DB_PASSWORD);
20         } catch (Exception e) {
21             e.printStackTrace();
22         }
23         return conn;
24     }
25
26     public static int save(Complaint c) {
27         int status = 0;
28         try {
29             Connection conn = getConnection();
30             PreparedStatement ps = conn.prepareStatement(
31                 "INSERT INTO complaints(studentName, studentID, studentEmail, phoneNo, lokasiBlok, lokasiAras, lokasiBilik, jenisAduan, detailAduan, keteranganAduan, status, tarikhAduan)");
32             ps.setString(1, c.getStudentName());
33             ps.setString(2, c.getStudentID());
34             ps.setString(3, c.getStudentEmail());
35             ps.setString(4, c.getPhoneNo());
36             ps.setString(5, c.getLokasiBlok());
37             ps.setString(6, c.getLokasiAras());
38             ps.setString(7, c.getLokasiBilik());
39             ps.setString(8, c.getLokasiLain());
40             ps.setString(9, c.getJenisAduan());
41             ps.setString(10, c.getDetailAduan());
42             ps.setString(11, c.getKeteranganAduan());
43             ps.setString(12, c.getStatus());
44             ps.setString(13, c.getTarikhAduan());
45
46             status = ps.executeUpdate();
47             conn.close();
48         } catch (Exception ex) {
49             ex.printStackTrace();
50         }
51         return status;
52     }
53
54     public static List<Complaint> getAllComplaints() {
55         List<Complaint> list = new ArrayList<>();
56         try {
57             Connection conn = getConnection();
58             PreparedStatement ps = conn.prepareStatement("SELECT * FROM complaints");
59             ResultSet rs = ps.executeQuery();
60             while (rs.next()) {
61                 Complaint c = new Complaint();
62                 c.setStudentName(rs.getString("studentName"));
63                 c.setStudentID(rs.getString("studentID"));
64                 c.setStudentEmail(rs.getString("studentEmail"));
65                 c.setPhoneNo(rs.getString("phoneNo"));
66                 c.setLokasiBlok(rs.getString("lokasiBlok"));
67                 c.setLokasiAras(rs.getString("lokasiAras"));
68                 c.setLokasiBilik(rs.getString("lokasiBilik"));
69                 c.setLokasiLain(rs.getString("lokasiLain"));
70                 c.setJenisAduan(rs.getString("jenisAduan"));
71                 c.setEmailAduan(rs.getString("detailAduan"));
72
73                 c.setDetailAduan(rs.getString("detailAduan"));
74                 c.setKeteranganAduan(rs.getString("keteranganAduan"));
75                 c.setStatus(rs.getString("status"));
76                 c.setTarikhAduan(rs.getString("tarikhAduan"));
77                 list.add(c);
78             }
79             conn.close();
80         } catch (Exception e) {
81             e.printStackTrace();
82         }
83         return list;
84     }
85
86     public static Complaint getComplaintById(String studentID) {
87         Complaint complaint = null;
88         Connection connection = null;
89         PreparedStatement preparedStatement = null;
90         ResultSet resultSet = null;
91
92         try {
93             connection = DBUtil.getConnection();
94             String sql = "SELECT * FROM complaints WHERE studentID = ?";
95             preparedStatement = connection.prepareStatement(sql);
96             preparedStatement.setString(1, studentID);
97             resultSet = preparedStatement.executeQuery();
98
99             if (resultSet.next()) {
100                 complaint = new Complaint();
101                 complaint.setStudentID(resultSet.getString("studentID"));
102                 complaint.setStudentName(resultSet.getString("studentName"));
103                 complaint.setStudentEmail(resultSet.getString("studentEmail"));
104                 complaint.setPhoneNo(resultSet.getString("phoneNo"));
105                 complaint.setLokasiBlok(resultSet.getString("lokasiBlok"));
106                 complaint.setLokasiAras(resultSet.getString("lokasiAras"));
107                 complaint.setLokasiBilik(resultSet.getString("lokasiBilik"));
108                 complaint.setLokasiLain(resultSet.getString("lokasiLain"));
109             }
110         } catch (Exception e) {
111             e.printStackTrace();
112         }
113         return complaint;
114     }
115 }
```

```

106         complaint.setLokasiLain(resultSet.getString("lokasiLain"));
107         complaint.setJenisAduan(resultSet.getString("jenisAduan"));
108         complaint.setDetailAduan(resultSet.getString("detailAduan"));
109         complaint.setKeteranganAduan(resultSet.getString("keteteranganAduan"));
110         complaint.setActionNotes(resultSet.getString("actionNotes"));
111         complaint.setActionStaff(resultSet.getString("actionStaff"));
112     }
113     ) catch (SQLException e) {
114         e.printStackTrace();
115     } finally {
116         DBUtil.close(resultSet, preparedStatement, connection);
117     }
118
119     return complaint;
120 }
121
122 public static int updateComplaint(Complaint c) {
123     int status = 0;
124     try {
125         Connection conn = getConnection();
126         PreparedStatement ps = conn.prepareStatement(
127             "UPDATE complaints SET studentName=?, studentEmail=?, phoneNo=?, lo
128             ps.setString(1, c.getStudentName());
129             ps.setString(2, c.getStudentEmail());
130             ps.setString(3, c.getPhoneNo());
131             ps.setString(4, c.getLokasiBlok());
132             ps.setString(5, c.getLokasiLaras());
133             ps.setString(6, c.getLokasiBilik());
134             ps.setString(7, c.getLokasiLain());
135             ps.setString(8, c.getJenisAduan());
136             ps.setString(9, c.getDetailAduan());
137             ps.setString(10, c.getKeteranganAduan());
138             ps.setString(11, c.getStatus());
139             ps.setString(12, c.getActionNotes());
140             ps.setString(13, c.getActionStaff());
141             ps.setString(14, c.getStudentID());
142
143             ps.setString(15, c.getActionStaff());
144             ps.setString(14, c.getStudentID());
145
146             status = ps.executeUpdate();
147             conn.close();
148         } catch (Exception ex) {
149             ex.printStackTrace();
150         }
151     }
152     return status;
153 }
154
155 public static int deleteComplaint(String studentID) {
156     int status = 0;
157     try {
158         Connection conn = getConnection();
159         PreparedStatement ps = conn.prepareStatement("DELETE FROM complaints WH
160             ps.setString(1, studentID);
161
162             status = ps.executeUpdate();
163             conn.close();
164         } catch (Exception ex) {
165             ex.printStackTrace();
166         }
167     }
168     return status;
169 }
170
171 public static List<Complaint> searchComplaints(String keyword) {
172     List<Complaint> list = new ArrayList<>();
173     try {
174         Connection conn = getConnection();
175         PreparedStatement ps = conn.prepareStatement("SELECT * FROM complaints
176             ps.setString(1, "%" + keyword + "%");
177             ps.setString(2, "%" + keyword + "%");
178             ResultSet rs = ps.executeQuery();
179             while (rs.next()) {
180                 Complaint c = new Complaint();
181                 c.setStudentName(rs.getString("studentName"));
182                 c.setStudentID(rs.getString("studentID"));
183                 c.setStudentEmail(rs.getString("studentEmail"));
184                 c.setPhoneNo(rs.getString("phoneNo"));
185                 c.setLokasiBlok(rs.getString("lokasiBlok"));
186                 c.setLokasiLaras(rs.getString("lokasiLaras"));
187                 c.setLokasiBilik(rs.getString("lokasiBilik"));
188                 c.setLokasiLain(rs.getString("lokasiLain"));
189                 c.setJenisAduan(rs.getString("jenisAduan"));
190                 c.setDetailAduan(rs.getString("detailAduan"));
191                 c.setKeteranganAduan(rs.getString("keteteranganAduan"));
192                 c.setStatus(rs.getString("status"));
193                 c.setTarikhAduan(rs.getString("tarikhAduan"));
194                 list.add(c);
195             }
196         }
197         conn.close();
198     } catch (Exception e) {
199         e.printStackTrace();
200     }
201 }

```

DIAGRAM 29

Complaint.java

```

1  package com.model;
2
3  public class Complaint {
4      private String studentName;
5      private String studentID;
6      private String studentEmail;
7      private String phoneNo;
8      private String lokasiBlok;
9      private String lokasiAras;
10     private String lokasiBilik;
11     private String lokasiLain;
12     private String jenisAduan;
13     private String detailAduan;
14     private String keteranganAduan;
15     private String status;
16     private String tarikhAduan;
17     private String actionNotes;
18     private String actionStaff;
19
20     // Getters and setters
21     public String getStudentName() {
22         return studentName;
23     }
24     public void setStudentName(String studentName) {
25         this.studentName = studentName;
26     }
27     public String getStudentID() {
28         return studentID;
29     }
30     public void setStudentID(String studentID) {
31         this.studentID = studentID;
32     }
33     public String getStudentEmail() {
34         return studentEmail;
35     }
36     public void setStudentEmail(String studentEmail) {
37         this.studentEmail = studentEmail;
38
39     public String getPhoneNo() {
40         return phoneNo;
41     }
42     public void setPhoneNo(String phoneNo) {
43         this.phoneNo = phoneNo;
44     }
45     public String getLokasiBlok() {
46         return lokasiBlok;
47     }
48     public void setLokasiBlok(String lokasiBlok) {
49         this.lokasiBlok = lokasiBlok;
50     }
51     public String getLokasiAras() {
52         return lokasiAras;
53     }
54     public void setLokasiAras(String lokasiAras) {
55         this.lokasiAras = lokasiAras;
56     }
57     public String getLokasiBilik() {
58         return lokasiBilik;
59     }
60     public void setLokasiBilik(String lokasiBilik) {
61         this.lokasiBilik = lokasiBilik;
62     }
63     public String getLokasiLain() {
64         return lokasiLain;
65     }
66     public void setLokasiLain(String lokasiLain) {
67         this.lokasiLain = lokasiLain;
68     }
69     public String getJenisAduan() {
70         return jenisAduan;
71     }
72     public void setJenisAduan(String jenisAduan) {
73         this.jenisAduan = jenisAduan;
74     }
75
76     public String getDetailAduan() {
77         return detailAduan;
78     }
79     public void setDetailAduan(String detailAduan) {
80         this.detailAduan = detailAduan;
81     }
82     public String getKeteranganAduan() {
83         return keteranganAduan;
84     }
85     public void setKeteranganAduan(String keteranganAduan) {
86         this.keteranganAduan = keteranganAduan;
87     }
88     public String getStatus() {
89         return status;
90     }
91     public void setStatus(String status) {
92         this.status = status;
93     }
94     public String getTarikhAduan() {
95         return tarikhAduan;
96     }
97     public void setTarikhAduan(String tarikhAduan) {
98         this.tarikhAduan = tarikhAduan;
99     }
100    public String getActionNotes() {
101        return actionNotes;
102    }
103    public void setActionNotes(String actionNotes) {
104        this.actionNotes = actionNotes;
105    }
106    public String getActionStaff() {
107        return actionStaff;
108    }
109    public void setActionStaff(String actionStaff) {
110        this.actionStaff = actionStaff;
111    }

```

DIAGRAM 30

ComplaintList.java

```
35     this.studentEmail = studentEmail;
36     this.phoneNo = phoneNo;
37     this.lokasiBlok = lokasiBlok;
38     this.lokasiAras = lokasiAras;
39     this.lokasiBilik = lokasiBilik;
40     this.lokasiLain = lokasiLain;
41     this.jenisAduan = jenisAduan;
42     this.detailAduan = detailAduan;
43     this.keteranganAduan = keteranganAduan;
44     this.status = status;
45     this.tarikhAduan = tarikhAduan;
46     this.actionNotes = actionNotes;
47     this.actionStaff = actionStaff;
48   }
49
50   // Getters and Setters
51   public int getId() {
52     return id;
53   }
54
55   public void setId(int id) {
56     this.id = id;
57   }
58
59   public String getStudentName() {
60     return studentName;
61   }
62
63   public void setStudentName(String studentName) {
64     this.studentName = studentName;
65   }
66
67   public String getStudentID() {
68     return studentID;
69   }
70 }
```

```
75   public String getStudentEmail() {
76     return studentEmail;
77   }
78
79   public void setStudentEmail(String studentEmail) {
80     this.studentEmail = studentEmail;
81   }
82
83   public String getPhoneNo() {
84     return phoneNo;
85   }
86
87   public void setPhoneNo(String phoneNo) {
88     this.phoneNo = phoneNo;
89   }
90
91   public String getLokasiBlok() {
92     return lokasiBlok;
93   }
94
95   public void setLokasiBlok(String lokasiBlok) {
96     this.lokasiBlok = lokasiBlok;
97   }
98
99   public String getLokasiAras() {
100    return lokasiAras;
101  }
102
103  public void setLokasiAras(String lokasiAras) {
104    this.lokasiAras = lokasiAras;
105  }
106
107  public String getLokasiBilik() {
108    return lokasiBilik;
109  }
110 }
```

```
110
111  public void setLokasiBilik(String lokasiBilik) {
112    this.lokasiBilik = lokasiBilik;
113  }
114
115  public String getLokasiLain() {
116    return lokasiLain;
117  }
118
119  public void setLokasiLain(String lokasiLain) {
120    this.lokasiLain = lokasiLain;
121  }
122
123  public String getJenisAduan() {
124    return jenisAduan;
125  }
126
127  public void setJenisAduan(String jenisAduan) {
128    this.jenisAduan = jenisAduan;
129  }
130
131  public String getDetailAduan() {
132    return detailAduan;
133  }
134
135  public void setDetailAduan(String detailAduan) {
136    this.detailAduan = detailAduan;
137  }
138
139  public String getKeteranganAduan() {
140    return keteranganAduan;
141  }
142
143  public void setKeteranganAduan(String keteranganAduan) {
144    this.keteranganAduan = keteranganAduan;
145  }
146 }
```

```
147     public String getStatus() {
148         return status;
149     }
150
151     public void setStatus(String status) {
152         this.status = status;
153     }
154
155     public Timestamp getTarikhAduan() {
156         return tarikhAduan;
157     }
158
159     public void setTarikhAduan(Timestamp tarikhAduan) {
160         this.tarikhAduan = tarikhAduan;
161     }
162
163     public String getActionNotes() {
164         return actionNotes;
165     }
166
167     public void setActionNotes(String actionNotes) {
168         this.actionNotes = actionNotes;
169     }
170
171     public String getActionStaff() {
172         return actionStaff;
173     }
174
175     public void setActionStaff(String actionStaff) {
176         this.actionStaff = actionStaff;
177     }
178 }
```

DIAGRAM 31

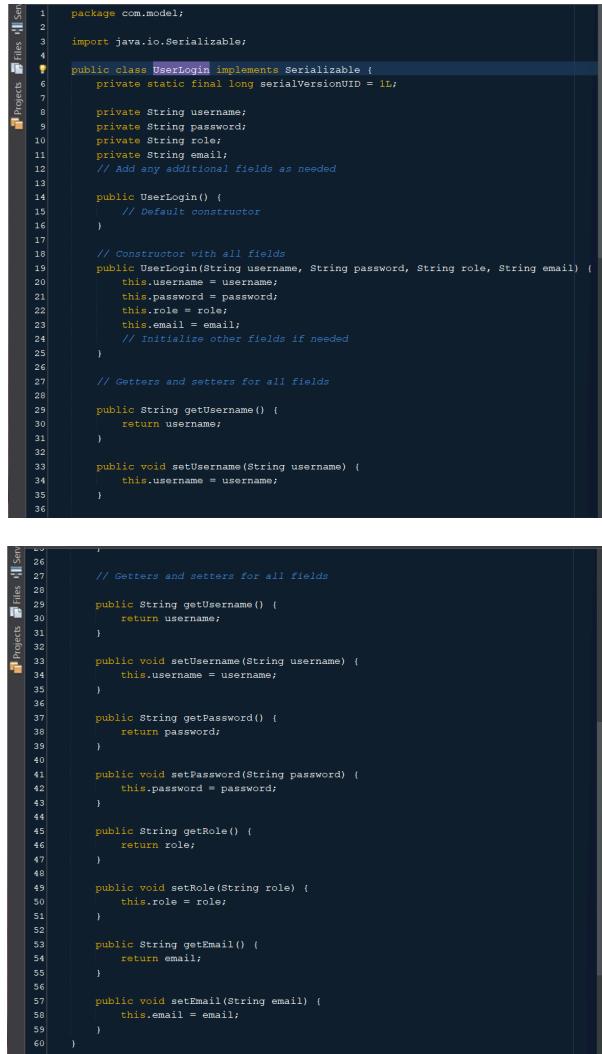
User.java

```
1 package com.model;
2
3
4 public class User {
5     private String username;
6     private String password;
7     private String email;
8     private String phone;
9     private String role;
10
11     // Constructor
12     public User(String username, String password, String email, String phone, String
13         this.username = username;
14         this.password = password;
15         this.email = email;
16         this.phone = phone;
17         this.role = role;
18     )
19
20     public User() {
21         // No argument constructor
22     }
23
24     public String getUsername() {
25         return username;
26     }
27
28     public void setUsername(String username) {
29         this.username = username;
30     }
31
32     public String getPassword() {
33         return password;
34     }
35
36     public void setPassword(String password) {
```

```
37         this.password = password;
38     }
39
40     public String getEmail() {
41         return email;
42     }
43
44     public void setEmail(String email) {
45         this.email = email;
46     }
47
48     public String getPhone() {
49         return phone;
50     }
51
52     public void setPhone(String phone) {
53         this.phone = phone;
54     }
55
56     public String getRole() {
57         return role;
58     }
59
60     public void setRole(String role) {
61         this.role = role;
62     }
63 }
64 }
```

DIAGRAM 32

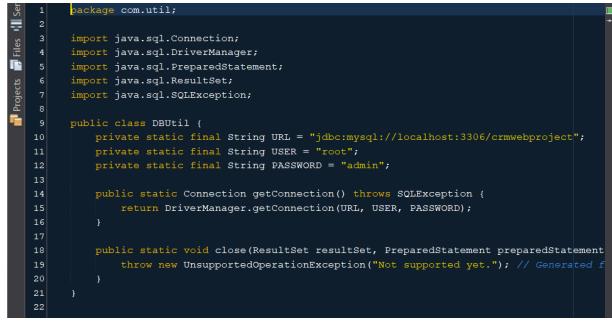
UserLogin.java



```
1 package com.model;
2
3 import java.io.Serializable;
4
5 public class UserLogin implements Serializable {
6     private static final long serialVersionUID = 1L;
7
8     private String username;
9     private String password;
10    private String role;
11    private String email;
12    // Add any additional fields as needed
13
14    public UserLogin() {
15        // Default constructor
16    }
17
18    // Constructor with all fields
19    public UserLogin(String username, String password, String role, String email) {
20        this.username = username;
21        this.password = password;
22        this.role = role;
23        this.email = email;
24        // Initialize other fields if needed
25    }
26
27    // Getters and setters for all fields
28
29    public String getUsername() {
30        return username;
31    }
32
33    public void setUsername(String username) {
34        this.username = username;
35    }
36
37    public String getPassword() {
38        return password;
39    }
40
41    public void setPassword(String password) {
42        this.password = password;
43    }
44
45    public String getRole() {
46        return role;
47    }
48
49    public void setRole(String role) {
50        this.role = role;
51    }
52
53    public String getEmail() {
54        return email;
55    }
56
57    public void setEmail(String email) {
58        this.email = email;
59    }
60 }
```

DIAGRAM 33

DBUtil.java



```
1 package com.util;
2
3 import java.sql.Connection;
4 import java.sql.DriverManager;
5 import java.sql.PreparedStatement;
6 import java.sql.ResultSet;
7 import java.sql.SQLException;
8
9 public class DBUtil {
10     private static final String URL = "jdbc:mysql://localhost:3306/crmwebproject";
11     private static final String USER = "root";
12     private static final String PASSWORD = "admin";
13
14     public static Connection getConnection() throws SQLException {
15         return DriverManager.getConnection(URL, USER, PASSWORD);
16     }
17
18     public static void close(ResultSet resultSet, PreparedStatement preparedStatement)
19         throws new UnsupportedOperationException("Not supported yet."); // Generated f
20     }
21 }
22
```

DIAGRAM 34

CONCLUSION

In conclusion, the Customer Relationship Management (CRM) project for the Residential College at Universiti Malaysia Terengganu (UMT) effectively streamlines administrative processes through task automation and information consolidation. This system improves communication, centralizes student data, and streamlines service delivery, resulting in higher student satisfaction. Implementing the CRM system represents a significant step toward modernizing administrative operations, making them more efficient and responsive to student needs. The use of various diagrams, such as use case, class, ER, and MVC model diagrams, effectively depicts the system's functionality and components, ensuring a clear understanding of the project for both developers and stakeholders. The successful implementation of this CRM system is expected to improve the residential experience for UMT students.

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