

# Web-Based Integrated Student Complaint System

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## ABSTRACT

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*The study developed and implemented an interactive web-based student complaint management system that addressed the challenges faced by students in tertiary institutions. Currently, students struggle with the difficulties of registering complaints and receiving slow responses. The computerized complaint management system provides students with a safe space to express their concerns without the fear of consequences. The design of the system was based on the data flow model and was developed using PHP, JavaScript, HTML, CSS, and MySQL. The MySQL server served as the database management system and Visual Studio Code was used as the integrated development environment. The final outcome of this research is an effective and user-friendly web-based student complaint management software that meets its objectives and provides an efficient solution to the challenges faced by university students.*

**Keywords:** *complaints, complaint system, compliant management, web-based.*

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## I. Introduction

The advancement of technology has transformed people's living culture. Nowadays, people can easily communicate, exchange information, and cooperate globally through websites, e-mail, instant messaging systems, social networking sites, and other internet-based communication systems. This has a great impact on academic growth and educational development, and from various concerns in the academic environment to promote a social and practical educational system. Academic development has different significance in an educational context to support social and practical learning systems. If an effective educational system is created, the issue of the complaints management system needs to be dealt with. This issue is one of many issues that have adversely affected academic development in multiple aspects related to the education support system.

A complaint system is a process or platform that allows individuals to raise issues or grievances about a particular product, service, or organization. The purpose of a complaint system is to provide a channel for customers to voice their concerns, provide feedback, and hold organizations accountable for their actions. The complaint system typically involves the collection and recording of complaints, investigation of the issues raised, and resolution of the complaints in a timely and effective manner. The complaint system can be manual, electronic, or a combination of both, and can be used in various industries such as education, healthcare, customer service, and many others.

Currently, the existing complaints system in most Nigerian tertiary institutions is managed by the conventional process using a paper-based technique. For the student to make a formal complaint, they must submit it to the designated location, usually to the management office. Then, the students will be assisted by the officer on how to convey information on complaints and directly submitted to the management. However, the drawbacks of this manual system are that it will take time to file their complaint, the application must be done within the university location and did not receive any status or update about the complaints. Therefore, a complaints management system has been developed in this study which identifies a set of options that can be used to manage and collect student complaints to monitor, track the progress report, and solve student issues. The primary objective of this research paper is to create and execute a Web-based Student Complaint Management System for students in Nigeria tertiary institutions.

## II. Review of Related Literature

Advocacy Research, (2021) opined that it is important that complaints are registered before they can be managed. When you have a complaint, it is important to get the details and to provide evidence when you can. According to Kolsky's (2015), 13% of dissatisfied complainants tend to share their complaints with at least 15 people, while only 1 in 25 of such complainants will directly report the issue to the administrative head. These findings suggest that many complainants either choose to suppress their grievances or vent them to other individuals, who may also become disheartened. By registering complaints, not only do individuals gain the ability to voice their criticisms, but they also create an avenue for prompt feedback.

According to Surbhi (2018), Management is the process of governing and directing an organization's affairs, regardless of its nature, type, structure, or size. Its goal is to establish and maintain an environment in which members of the organization can collaborate to efficiently and effectively achieve business objectives. Complaint Management, on the other hand, can be defined as the process of handling and addressing expressions of dissatisfaction or unhappiness from complainants. It allows for the efficient management and resolution of issues brought forth by complainants. As a guide for a group of people working within an organization, Management coordinates their efforts towards accomplishing a shared goal (Surbhi, 2018).

Understanding what someone is thinking can be a daunting task. Even if most people seem content with your services, there may still be some who are dissatisfied. This underscores the significance of implementing an effective complaint management system that fosters positive relationships with individuals. To successfully manage complaints, it is crucial to formulate strategies for receiving feedback, responding to it, and determining the appropriate departments or individuals to whom criticisms should be directed (IONOS, 2019).

Salemme (2020) identifies ten steps to effective complaint management. The steps include the following:

1. *Listen and Emphasize:* When you start a complaint management process by simply hearing the complainant, you will establish a tone of empathy that will help the complainant trust you.
2. *Become an Advocate:* Empathy is only the first step, complainants also want to know that you will fix the problem and make them satisfied again, and otherwise they would not take the time to reach out.
3. *Learn More:* You need to know as much about the circumstances as possible.
4. *Reiterate the Core Issues:* When you listen to understand instead of listening to respond, you communicate a genuine interest in what the person has to say. It is called "active listening", and one of its core tenets is clarifying what you heard before you respond.
5. *Identify the cause:* Once you know the complaint, you can identify why it happened. Sometimes it will be the company's fault, in which case you'll need to move toward rectifying the issue.
6. *Ask the Complainant to Suggest a Solution:* Many complainants will already have an idea of what would "make it right", so ask them what they want.
7. *Explain Next Steps:* Whether you execute the solution yourself or not, your first job is to tell the complainant what happens next. Keeping them informed is another way to show you care.
8. *Make It happen:* Make sure you know what's happening and when, so if a complainant contacts you to ask about progress, you'll be able to update them.
9. *Report Back:* When the problem has been fixed, contact the complainant and let them know.
10. *Offer Something Extra:* Post-resolution is an extremely effective time for companies to "go the extra mile".

Ombudsman's report in 2020, complainants are frequently the initial ones to detect when things are not functioning correctly. Having an efficient Complaint Management System is crucial to deliver top-notch complainant service. It aids in assessing complainant contentment and serves as a valuable channel for obtaining information and feedback to enhance services.

An effective Complaint Management System is integral to providing quality complainant service. It helps to measure complainant satisfaction and is a useful source of information and feedback for improving services. Complainants are often the first to identify when things are not working properly (Ombudsman, 2020).

## III. Material and Methods

A formal model of the Complaint Management System was developed using Unified Modeling Language (UML). The UML is the standard language for specifying, visualizing, constructing, and documenting all the software systems 'artifacts. The system's behaviors were modeled using UML diagrams. The diagrams used are; Activity diagram and a use-case diagram. The interactions are modeled separately using the appropriate diagrams and grouped under Interaction UML diagrams. Significantly, use cases are indicated at various abstraction degrees due to the different partners in a study. The system's functionality has been demonstrated by the system flowchart.

### 3.1 Flowchart of the Proposed System

Flowcharts of a system depict the flow of data and the decision-making process that controls events. The illustrations employ symbols to represent various elements as seen in figure 1. The individual login as either an admin or a student. As a student, registration is required before the student can access the portal via the login

button. Once logged in, the complaint can be logged, and the student proceeds to log out. From the point of the admin, the complaint lodged by the student is seen, the appropriate action is taken, and issue is closed by the admin once the student has been responded to and issues resolved.

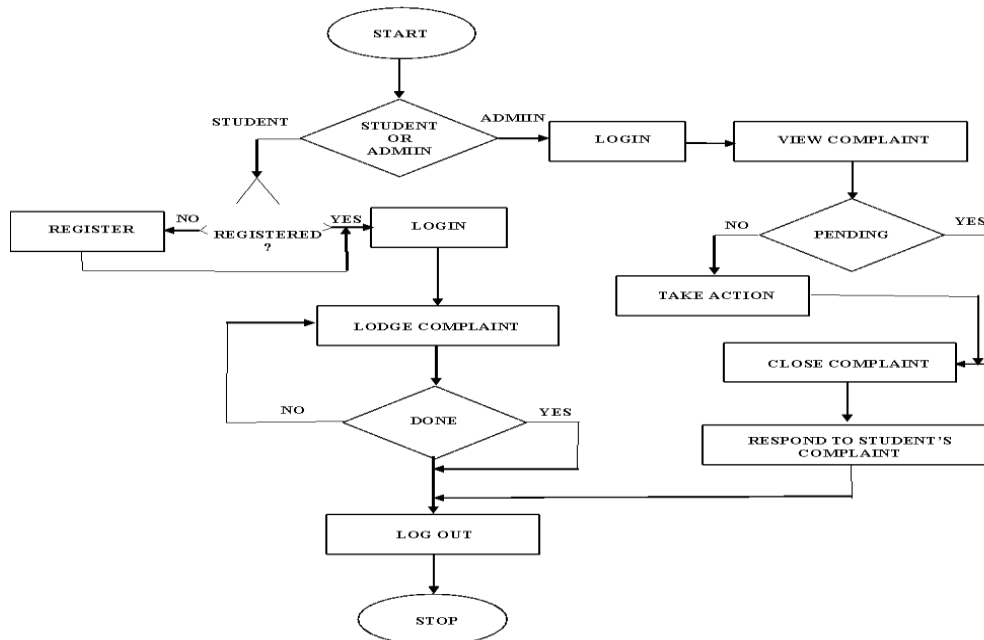


Figure 1: Flowchart of the Proposed System

### 3.2 Database Design

MySQL was selected as the database system for its ability to handle and organize vast quantities of data. In order to ensure uniformity throughout the system, data models were established to define the procedures for creating users and storing complaints. The fields of the database and their description have been listed in table 1.

Table 1: Database Design

	Field Name	Data Type	Size	Description
1	complaintNumber	Integer	11	Complaint number
2	userId	Integer	11	User id
3	category	Integer	11	Complaint category
4	subcategory	varchar	255	Complaint subcategory
5	complaintType	varchar	255	Type of complaint
6	level	varchar	255	Student Department
7	coursecode	varchar	255	Course Code
8	coursetitle	varchar	255	CourseTitle
9	courselecturer	varchar	255	CourseLecturer
10	academicsession	varchar	255	AcademicSession
11	drp	varchar	255	Date result was published
12	sdep	varchar	255	Student's Department
13	complaintDetails	mediumtext		Details of complain
14	complaintFile	varchar	255	File related to complaint
15	regDate	timestamp		Date of student Registration
16	status	varchar	50	Status of complaint
17	LastUpdationDate	timestamp		The last time the student login

## IV. Implementation

A user-friendly web interface was built using HTML, CSS, and JavaScript. While MySQL and PHP were used to build the backend of the application. The following GU interfaces were developed to ease the capturing and resolving of students' complaints.

#### 4.1 The Homepage Interface Design

The homepage of the student complaint management system, as shown in figure 2, features two instances (admin and student) of the login section – the admin user at the left and the student user at the right. There is also a “Sign up” feature for users who do not have an existing account.

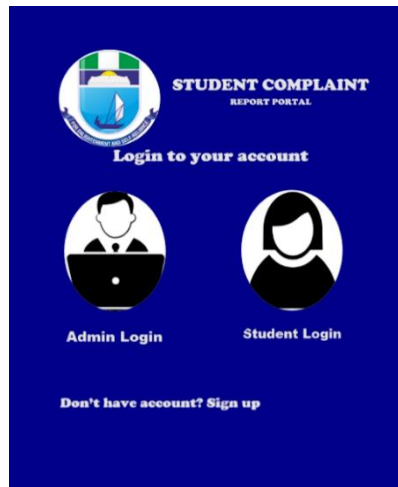


Figure 2: The Home Page interface design

#### 4.2 The Registration Page

If a user is unable to log in due to the absence of an account, they have the option to create a new account within the system as demonstrated in figure 3. Once the user inputs their details, the system performs validation checks to ensure that none of the required fields are empty and that the passwords match. If the validation checks are successful, the user details are transmitted to the backend system, and a new user is created, as illustrated in figure 4. The user model is utilized to define the characteristics that each user should possess, as depicted in Figure 4. This model is then employed to map the new user in the database.

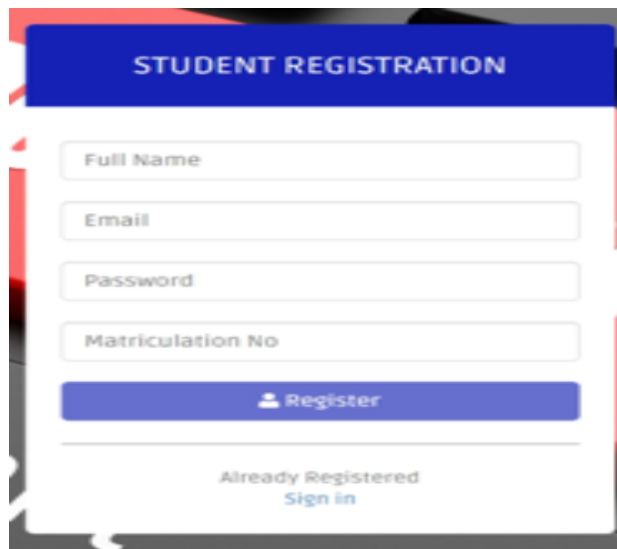


Figure 3: Registration Page.

```

<input type="text" class="form-control" placeholder="Full Name" name="fullname" required="required" autofocus>
<br>
<input type="email" class="form-control" placeholder="Email" id="email" onBlur="userAvailability()" name="email" required="required">
<span id="user-availability-status1" style="font-size:12px;"></span>
<br>
<input type="password" class="form-control" placeholder="Password" required="required" name="password"><br >
<input type="text" class="form-control" maxLength="13" name="matriculationno" placeholder="Matriculation No" required="required" autofocus>
<br>
<button class="btn btn-theme btn-block" type="submit" name="submit" id="submit"><i class="fa fa-user"></i> Register</button>

```

Figure 4. User model.

### 4.3 The Register Complaint Page

Figure 5 displays the "Register Complaint" interface for the student complaint system. This interface allows users to register a complaint by selecting the appropriate category, sub-category, complaint type, department, nature of the complaint, and complaint details. Additionally, users can attach relevant documents to the complaint, if any, before submitting it. The front-end system communicates with the backend system to save the new complaint into the database, as depicted in Figure 6.

A model is created for each complaint in the backend, as shown in Figure 7. After the model is generated, the complaint is then saved into the MySQL database.

Figure 5: Register Complaints page.

complaintNumber	userId	category	subcategory	complaintType	level	coursecode	coursetitle	courselecturer	academicession	dip	adep	complaintDetails	complaintFile	regDate	status	lastUpdateDate
1	3	1	Missing Examination Scores	Complaint	400	CSC 410.2	Computational Method	Dr Asur Ntuk	2020/2021	25/07/2021	Computer Science			2023-01-31 08:55:24	NULL	2023-01-31 09:25:18
2	3	1	Continuous Assessments	Complaint	200	CSC 202.1	Computer Analysis	Dr Asur Ntuk	2019/2020	25/07/2021	Computer Science			2023-01-31 08:57:25	NULL	2023-01-31 09:29:55
3	3	2	Any others not Stated	General Query	300	CSC 301.1	Compiler Construction	Prof. Nsang Etim	2019/2020	Nil	Computer Science	Sexual advancement and harassment		2023-01-31 08:59:53	NULL	2023-01-31 09:28:02
4	3	1	Two Result with the same Mat. Number but different...	Complaint	100	CSC 100.2	Computer Application	Dr. Nyin Kayin	2018/2019	25/07/2020	Computer Science			2023-01-31 09:01:01	NULL	2023-01-31 09:27:35
5	3	1	Correction of Result Grades	Complaint	300	CSC 304.2	Artificial Intelligence	Prof. Myan Yrice	2019/2020	Nil	Computer Science			2023-01-31 09:02:04	NULL	2023-01-31 09:27:08

Figure 6: Saved complaints in the database.

```
151 </div>
152
153 <div class="row">
154 <div class="col-md-2 col-sm-2 control-label">Course Title</label>
155 <div class="col-md-10">
156 <input type="text" name="courseTitle" required="required" value="" required="" class="form-control">
157 </div>
158 </div>
159
160 <div class="row">
161 <div class="col-md-2 col-sm-2 control-label">Course Lecturer</label>
162 <div class="col-md-10">
163 <input type="text" name="courseLecturer" required="required" value="" required="" class="form-control">
164 </div>
165 </div>
166
167 <div class="row">
168 <div class="col-md-2 col-sm-2 control-label">Academic Session</label>
169 <div class="col-md-10">
170 <input type="text" name="academicSession" required="required" value="" required="" class="form-control">
171 </div>
172 </div>
173
174 <div class="row">
175 <div class="col-md-2 col-sm-2 control-label">Date result was published</label>
176 <div class="col-md-10">
177 <input type="text" name="datePublished" required="required" value="" required="" class="form-control">
178 </div>
179 </div>
180
181 <div class="row">
182 <div class="col-md-2 col-sm-2 control-label">Student's Department</label>
183 <div class="col-md-10">
184 <input type="text" name="dept" required="required" value="" required="" class="form-control">
185 </div>
186 </div>
187
188 <div class="row">
189 <div class="col-md-2 col-sm-2 control-label">Complaint Details (max 2000 words)</label>
190 <div class="col-md-10">
191 <input type="text" name="complaintDetails" value="" rows="10" class="form-control" maxlength="2000">
192 </div>
193 </div>
194
195 </div>
```

Figure 7. Complaints model.

#### 4.4 Complaint History

The "Complaint History" interface for the student complaint system as shown in figure 8 enables users to view their complaint history by complaint number, the date of the last update, and the status of the complaint, which can be one of the following: "not processed yet," "in process," or "closed." One of the advantages of this system is that users can view the details of the action taken by the admin, as displayed under the "Action" column.

The screenshot shows the 'CSC COMPLAINT PORTAL | STUDENT' interface. On the left is a sidebar with the user's name 'Ruth Peace Ibitomisin' and navigation options: Dashboard, Account Setting, Lodge Complaint, and Complaint History. The main area is titled '>Your Complaint History' and contains a table with the following data:

Complaint Number	Reg Date	last Update date	Status	Action
1	2023-01-31 08:55:24	2023-01-31 09:33:16	In Process	<a href="#">View Details</a>
2	2023-01-31 08:57:25	2023-01-31 09:34:31	Closed	<a href="#">View Details</a>
3	2023-01-31 08:59:53	2023-01-31 09:28:02	Not Process Yet	<a href="#">View Details</a>
4	2023-01-31 09:01:01	2023-01-31 09:27:35	Not Process Yet	<a href="#">View Details</a>
5	2023-01-31 09:02:04	2023-01-31 09:27:08	Not Process Yet	<a href="#">View Details</a>

At the bottom of the page, it says '© 2023 CMS All rights reserved.'

Figure 8: Complaint History.

#### 4.5 Manage Complaint

The interface for the student complaint management system's admin homepage, as illustrated in Figure 9, includes a "Manage Complaints" section that displays all complaints, including those that have not yet been processed, pending complaints, and closed complaints. Additionally, the admin can view the details of each complaint to take appropriate action.

The screenshot shows the 'CSC COMPLAINT REPORT PORTAL | Admin' interface. On the left is a sidebar with navigation options: Manage Complaint, Manage users, Add Category, Add Sub-Category, Add Level, User Login Log, and Logout. The main area is titled 'Not Process Complaints' and features a search bar and a table with the following data:


Complaint No	complainant Name	Reg Date	Status	Action
3	Ruth Peace Ibitomisin	2023-01-31 08:59:53	Not process yet	<a href="#">View Details</a>
4	Ruth Peace Ibitomisin	2023-01-31 09:01:01	Not process yet	<a href="#">View Details</a>
5	Ruth Peace Ibitomisin	2023-01-31 09:02:04	Not process yet	<a href="#">View Details</a>
13	Ruth Peace Ibitomisin	2023-01-31 16:59:20	Not process yet	<a href="#">View Details</a>

Below the table, it says 'Showing 1 to 4 of 4 entries'.

Figure 9. Manage Complaint

#### 4.6 Complaint Details

The interface for managing student complaints, as depicted in Figure 4.10, is called the "Complaint Details" interface. This interface provides students with an overview of all complaint details, including the date and time of the complaint as well as the type of complaint. Additionally, the admin has complete access to all complaints.

CSC COMPLAINT REPORT PORTAL | Admin Admin 

- Manage Complaint
- Manage users
- Add Category
- Add Sub-Category
- Add Level
- User Login Log
- Logout

### Complaint Details

Complaint Number	4	Complainant Name	Ruth Peace Ibitomisin	Reg Date	2023-01-31 09:01:01
Category	Results Related Complaints	SubCategory	Two Result with the same Mat. Number but different Score	Complaint Type	Complaint
Level	100	Course Code	CSC. 100.2	Course Title	Computer Application
Course Lecturer	Dr. Nyin Kayin	Academic Session	2018/2019	Date result was published	25/07/2020
Student's Department	Computer Science				
Complaint Details					
File(if any)	File NA				
Final Status	Not Process Yet				
Action	Take Action		View User Details		

Figure 10. Complaint Details Interface

## V. Conclusion

A web-based student complaint system is a platform that allows students to submit complaints or feedback regarding various aspects of their educational experience, such as course content, faculty behavior, issues with semester results, or administrative issues. The system may also allow students to track the status of their complaints and receive updates on any actions taken. The goal of a web-based student complaint system is to provide students with a convenient and efficient way to voice their concerns and ensure that their complaints are addressed in a timely and appropriate manner. It can also help educational institutions to identify and address areas for improvement and enhance the overall student experience.

## References

- [1]. Afify, A. A., Mousa, A., & Salem, M. B. (2011). Service-oriented complaint management system for e-charity. *Journal of Systems and Information Technology*, 13(4), 366-383. <https://doi.org/10.1108/1328726111118145>
- [2]. Alve, R. (2017). Design of web application for complaint tracking and resolving. *International Journal of Engineering and Technology*, 9(6), 4376-4380. <https://doi.org/10.21817/ijet/2017/v9i6/170906302>
- [3]. Al-waeli, W. S. N., & Hassan, N. B. (2022). Student Complaint Management System. *Applied Information Technology and Computer Science*. 3(1), 748–759. Retrieved from <https://publisher.uthm.edu.my/periodicals/index.php/aits/article/view/2440>
- [4]. Anusiuba, I. A., Karim Usman, Ekwealor, O. U., & Igbonekwu, J. O. (2021). Design and Implementation of a Tertiary Institution Web-Based Student Complaint Management System. *International Journal of Software & Hardware Research in Engineering (IJSHRE)*. 9(8), 24-36. DOI: 10.26821/IJSHRE.9.8.2021.9802
- [5]. Aziz, S. (2015). Complaint management in a public governmental organization. *International Journal of Business and Management*, 10(3), 62-71. <https://doi.org/10.5539/ijbm.v10n3p62>
- [6]. Barlow, J. (1996). *Customer satisfaction: A key to survival in the third millennium*. ASQC Quality Press.
- [7]. Coussement, K., & Van den Poel, D. (2010). Improving customer complaint management by automatic email classification using linguistic style features. *Decision Support Systems*, 49(4), 515-523. <https://doi.org/10.1016/j.dss.2010.03.001>
- [8]. Dolinsky, A. L. (1994). Resolving student complaints: A changing role for college and university ombudsman. *Journal of College Student Development*, 35(4), 307-312.
- [9]. Fitz, J., Patrick, K., Davey, A., & Dai, Y. (2012). Complaints from university students in China. *Asia Pacific Journal of Education*, 32(3), 265-277. <https://doi.org/10.1080/02188791.2012.689507>
- [10]. Fornell, C., & Wernerfelt, B. (1987). Defensive marketing strategy by customer complaint management: A theoretical analysis. *Journal of Marketing Research*, 24(4), 337-346. <https://doi.org/10.1177/002224378702400403>
- [11]. Goldstein, S. M. (2009). The implications of dissatisfied and complaining customers. *Journal of Services Research*, 9(1), 29-49. <https://doi.org/10.1177/1094670508329865>
- [12]. Hennig-Thurau, T., & Hansen, U. (2000). *Relationship marketing: Gaining competitive advantage through customer satisfaction and customer retention*. Springer-Verlag Berlin Heidelberg.
- [13]. Homburg, C., & Fürst, A. (2007). The impact of complaints management on customer loyalty and word-of-mouth communication: A field study in the automotive industry. *Journal of Customer Behavior*, 6(2/3), 115-137. <https://doi.org/10.1362/147539207X207513>
- [14]. IONOS. (2019). *Complaint management: Tips for successful complaint handling*. <https://www.ionos.com/startupguide/customer-service/complaint-management/>
- [15]. Johnston, R. (2001). Service recovery strategies for retaining customers. *The Service Industries Journal*, 21(2), 121-138. <https://doi.org/10.1080/714005277>
- [16]. Kotler, P., & Fox, K. F. (1995). *Strategic marketing for educational institutions*. Prentice-Hall.
- [17]. Kolsky, E. (2015). Customer experience 2020: 20 statistics that reveal the future. eTouchPoint. <https://www.etchpoint.com/blog/customer-experience-2020-20-statistics-that-reveal-the-future>
- [18]. Ksraa, A. A. & Mona, A. K. (2019). Electronic-Customer Complaint Management System (E-CCMS) - a Generic Approach. *International Journal of Advanced Networking and Applications*. 11(1), 4125-4141. DOI: 10.35444/IJANA.2019.11011



- [19]. Laird, L. (2016). "Strengthening the "Engineering" in Software Engineering Education: A Software Engineering Bachelor of Engineering Program for the 21st Century," 2016 IEEE 29th International Conference on Software Engineering Education and Training (CSEET), Dallas, TX, USA, 2016, pp. 128-131. DOI: 10.1109/CSEET.2016.13
- [20]. Malali Rajegowda, P., & SOHAIL, U.-E.-H. M. S. (2017). Research on the Implementation of a Web Based Institutional Support System for Middle East College: Proof of Concept Study. Journal of Student Research. DOI: 10.47611/jsr.vi.547
- [21]. Manuhutu M. A., & Uktolseja, L. J. (2018). Design and Implementation of Online Students' Complaint (Case Study of English Study Program at Victory University, Sorong). International Journal of Computer Sciences and Engineering. 6(1), 228-232. DOI: 10.26438/ijcse/v6i1.228232
- [22]. Metehan, M., & Yasemin, A. (2011). Managing customer complaints: The case of Turkey. Journal of Business Research, 64(7), 748-756. <https://doi.org/10.1016/j.jbusres.2010.08.002>
- [23]. Nasr, O., & Alkhider, E. (2015). Online Complaint Management System. IJISSET - International Journal of Innovative Science, Engineering & Technology. 2(6), 305-307. Retrieved from [https://ijiset.com/vol2/v2s6/IJISSET\\_V2\\_I6\\_45.pdf](https://ijiset.com/vol2/v2s6/IJISSET_V2_I6_45.pdf)
- [24]. Oguntosin, V., Mejabi O., Adoghe, A., Abdulkareem, A., & Adeyemi, G. (2021). Development of a Web-Based Complaint Management Platform for a University Community. Journal of Engineering Science and Technology Review. 14 (1), 150 - 159. DOI: 10.25103/jestr.141.17
- [25]. Ombudsman. (2020). Complaint management. <https://www.ombudsman.gov.au/How-we-can-help/complaint-management>
- [26]. Plymire, L. R. (1991). The complaint is a gift: The recovery of customer loyalty. E. M. Ward, Inc.
- [27]. Salemme, K. (2020). The 10 steps to effective complaint management. Customer Think. <https://customerthink.com/the-10-steps-to-effective-complaint-management/>
- [28]. Stone, M. (2019). Poor service organizations are a pain to do business with. Forbes. <https://www.forbes.com/sites/micahsolomon/2019/03/03/poor-service-organizations-are-a-pain-to-do-business-with-heres-how-to-reverse-the-trend/?sh=34c5a5a618d3>
- [29]. Surbhi. (2018). What is Management? Definition and Meaning. Marketing91. <https://www.marketing91.com/management-definition-meaning/>
- [30]. Uusitalo, O., Hakala, H., & Kautonen, T. (2011). Understanding relationship marketing outcomes: An integration of relational benefits and relationship quality. Journal of Relationship Marketing, 10(2), 89-102. <https://doi.org/10.1080/15332667.2011.571000>
- [31]. Van Hoorebeek, I., & Gale, T. (2011). University student complaints-handling procedures: Perceived quality, justice and intention to complain. Journal of Higher Education Policy and Management, 33(3), 287-298. <https://doi.org/10.1080/1360080X.2011.560472>

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