

## Online Help Desk System Guide to Enhance Learning

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## Abstract

The advent of online education has revolutionized the higher education landscape, providing learners with flexible and accessible opportunities to pursue their academic goals. Just like other Learning Management Learning Platforms (LMS), the Cavendish University Uganda (CUU) Online Distance Education and Learning (ODEL) platform represents a cutting-edge initiative aimed at delivering quality education to students irrespective of their geographical location. Through a number of avenues like chats, group discussions and real time discussions that incorporate online education, teaching and learning is seamlessly done. Although LMS have supported teaching and learning, effective communication and efficient content management, monitoring of its application is wanting. Learners have been known to face setbacks that do not allow them to complete the learning process smoothly. The development of an online help desk system is assumed to enhance the learning experience of a student who is able to solve LMS challenges as soon as a complaint is logged in. The help desk was developed through the issues identified by students through a baseline survey and needs assessment.

**Key words:** *Online help desk, e-learning, education institutions*

## **Introduction and Background**

In the context of online education, teaching and learning support assumes a critical role in facilitating student engagement, knowledge acquisition, and academic success. It encompasses a wide range of components, including technical assistance, instructional design, multimedia resources, interactive forums, and prompt problem-solving mechanisms. These help desks or support systems are pivotal in mitigating the challenges faced by students, faculty, and staff on the CUU ODEL platform, fostering an optimal online learning environment. Garrison, D. R., Anderson, T., & Archer, W. (2000)

A comprehensive analysis of the CUU ODEL platform revealed several challenges that hindered the seamless delivery of education. These challenges encompassed difficulties encountered during the login process, ineffective communication channels, erroneous module uploads on individual ODEL accounts, and delays in uploading course units and exams. These issues not only impeded the learning experience but also hindered effective engagement and collaboration among stakeholders. It became evident that a robust and integrated help desk system was necessary to address these challenges and elevate the quality of teaching and learning support.

Various academic institutions have come up with ways to solve problems encountered and most of them involve a student logging in a complaint and having to wait a few hours or days to have the issues rectified or looked into of which CUU is not an exception. Although CUU has put mechanisms in place to solve student issues, the absence of a sophisticated and centralized help desk system tailored to the unique requirements of the CUU ODEL platform is lacking. The lack of an integrated support system resulted in communication gaps, prolonged issue resolution times and suboptimal learning experiences for students and respective faculties. The design of a comprehensive help desk system to enhance teaching and learning support on the CUU ODEL platform bred efforts in solving student related LMS issues.

## **Objectives of the Study**

This study aimed to accomplish the following objectives:

- Identify the existing help desk systems adopted to enhance teaching and learning in academic institutions
- Develop a customized and scalable step by step online help desk guide for specific needs of the CUU ODEL platform users.

## **Literature Review**

### **2.1 The need for online help desk systems**

The transition to online learning has presented new challenges for universities and students alike. As students rely on digital platforms and virtual learning environments, they encounter various issues that require timely support and resolution. Online help desk systems have emerged as effective tools to address these challenges and provide assistance to students (Ali, 2020). These systems offer a centralized platform for students to seek help, report problems, and receive timely support, ensuring a smoother online learning experience as well as eliminating the need for multiple communication channels and streamlining support services (Alexander & Golja, 2007). Students can submit their concerns and queries conveniently through the system, ensuring that their issues are properly documented and addressed.

Online help desk systems play a crucial role in monitoring and analyzing student feedback and concerns, enabling universities to identify common trends and address systemic issues (Bienkowski et al., 2012). By collecting data on the types of problems students encounter and the frequency of occurrence, universities can make informed decisions to improve their online learning platforms and support services. Alexander & Golja, (2007) argues that if multiple students report difficulties with a specific feature of the LMS, such as accessing discussion forums, the university can prioritize resolving that issue and providing additional guidance or training to ensure a seamless user experience.

Moreover, online help desk systems can contribute to building a sense of community and belonging in the online learning environment. These systems often include discussion boards or forums where students can interact with their peers and seek assistance from fellow students who may have faced similar challenges. This peer-to-peer support fosters collaboration, knowledge sharing, and a supportive learning community. Research by Ratliff, (2019) suggests that the availability of such platforms positively influences student engagement and motivation in online courses.

Online help desk systems have become essential components of universities' support infrastructure in the online learning environment (Patel, 2019). These systems offer specific features and functionalities, such as ticket submission, knowledge bases, real-time chat, and data analysis capabilities, to address student concerns, streamline support services, and enhance the overall learning experience (Martin & Bolliger, 2018). By utilizing these systems, universities can provide timely and efficient assistance, promote self-help and peer collaboration, and gather valuable feedback for continuous improvement. As technology continues to advance, the evolution of online help desk systems will play a pivotal role in shaping the future of online education support (Salmon, 2013).

### **Review of Existing Help Desk Systems**

Help desk systems have become vital components of online education support infrastructure, facilitating effective communication and issue resolution. (Mayoka & Kyeyune, 2012) conducted a detailed analysis of help desk systems in educational institutions. They emphasized the significance of user-friendly interfaces that allow users to submit queries and report issues seamlessly. Furthermore, efficient ticket management systems ensure that queries are tracked, prioritized, and resolved in a timely manner. Effective communication channels, such as live chat or email, foster clear and prompt interactions between users and support staff, contributing to an enhanced user experience.

To optimize teaching and learning support in the online education context, it is crucial to consider best practices and frameworks. Garrison and Kanuka (2004) conducted a seminal study on teaching presence, cognitive presence and social presence in online learning environments. Their work emphasized the importance of instructor presence in fostering learner engagement and facilitating meaningful interactions. Effective communication channels, including discussion forums, video conferencing, and collaborative tools, enable students to connect with instructors and peers, promoting a sense of community and active participation (Martin & Bolliger, 2018).

Moreover, the Community of Inquiry (CoI) model developed by Garrison, Anderson, and Archer (2000) provides a theoretical framework for understanding and designing online learning environments. The CoI model identifies three essential presences: cognitive presence, social presence, and teaching presence. Integrating these presences into the design of support systems allows educational institutions to create engaging and interactive online learning experiences that promote deep learning and student success.

### **Specifications of online help desk systems**

Several universities, including Uganda Christian University (UCU) and Makerere University, have implemented online help desk systems to address student concerns and provide timely support. These systems effectively solve various problems faced by students in the online learning environment (Smith & Johnson, 2015).

UCU's help desk system enables students to submit support tickets regarding issues accessing course materials on the learning management system (LMS) (UCU Help Desk Manual). The system automatically assigns these tickets to the appropriate department, such as the IT support team or the LMS administrator. The staff promptly investigates the issues, troubleshooting server configurations, account permissions, or LMS integration problems. Once resolved, the staff updates the ticket and notifies the student, ensuring transparency and allowing students to track progress.

At Makerere University, the help desk system addresses challenges related to assignment submission and feedback. Students can submit tickets explaining their problems, such as technical issues or queries regarding grading criteria. The system assigns the tickets to the relevant department, and staff members work to resolve the issues. This may involve addressing technical glitches, increasing server capacity, or providing clarifications on grading criteria. Once resolved, the staff updates the ticket and communicates the solution to the student. In cases where further action is required, such as re-opening the submission portal or granting extensions, the necessary adjustments are made.

These universities' online help desk systems effectively streamline support services, enhance communication, and provide timely resolutions to student issues. By utilizing these systems, universities can ensure that students receive the assistance they need, facilitating a smoother online learning experience (Bailey & Brown, 2016).

Furthermore, research conducted by (Pham et al., 2019) highlights the positive impact of online help desk systems on student satisfaction and academic performance. Their study found that universities implementing such systems observed a significant reduction in response time to student inquiries and an improvement in problem resolution rates. The availability of 24/7 support through online help desk systems has also been shown to alleviate student stress and anxiety related to technical difficulties or academic concerns (Booker et al., 2014).

The implementation of online help desk systems in universities demonstrates a commitment to supporting students in the online learning environment (Selim, 2007). These systems not only address technical issues but also promote self-help, collaborative problem-solving, and information literacy skills. The positive impact of these systems on student satisfaction and academic performance reinforces their significance in facilitating a smooth and productive online learning experience (Shirish et al., 2021).

### **Enhancing Student Support and Engagement**

Apart from resolving issues, online help desk systems have the potential to enhance student support and engagement in the online learning environment. These systems can deliver proactive notifications and reminders to students, keeping them informed about important deadlines, course updates, and academic resources. By utilizing automated reminders, universities can ensure that students stay on track, reducing the likelihood of missed deadlines and promoting a sense of accountability (Balu & Ehrlich, 2018).

Moreover, online help desk systems can facilitate personalized and targeted support for students with diverse learning needs. By analysing student data, universities can gain insights into individual learning patterns, preferences, and areas of struggle. This information can be utilized to deliver customized recommendations, resources, and interventions through the help desk system. For instance, if a student consistently struggles with a particular topic, the system can suggest supplementary learning materials, provide access to additional tutorials or workshops, or connect the student with a subject matter expert for personalized assistance. This personalized support significantly enhances the learning experience and improves student outcomes (Paiva et al., 2016)

### **Challenges and Limitations**

It is important to acknowledge the potential challenges and limitations of online help desk systems. Technical issues, such as system downtime or connectivity problems, can disrupt the smooth functioning of these systems and hinder timely support delivery. To minimize such disruptions, universities such as Cavendish must ensure robust infrastructure and develop contingency plans. Additionally, providing alternative channels of communication during emergencies can help maintain contact with students when the online help desk system is inaccessible (Iglesias-Pradas et al., 2021).

The success of online help desk systems also relies on effective communication and collaboration among different departments and support staff (Rezgui, 2007). Adequate training, coordination, and clear escalation processes are vital to ensure efficient problem resolution and avoid delays or miscommunications (Goudar, 2010).

### **Best Practices for Implementing Online Help Desk Systems**

To maximize the effectiveness of online help desk systems, universities should consider implementing best practices during the implementation and management stages. Firstly, universities should provide comprehensive training to support staff who will be using the system. This training should cover system functionalities, ticket management processes, and effective communication techniques to ensure staff members are equipped to handle student issues efficiently (Best, 2006).

Additionally, regular monitoring and evaluation of the system's performance are crucial to identify areas for improvement. Universities can collect feedback from students and support staff to assess the system's usability, effectiveness, and satisfaction levels. This feedback can inform updates and enhancements to the system, ensuring its continued relevance and effectiveness in meeting student needs (Riandi et al., 2021).

Furthermore, universities should prioritize data security and privacy when implementing online help desk systems. Student information and communication should be protected through robust security measures, such as encryption and access controls, to safeguard sensitive data (Mishra et al., 2022)

The implementation of online help desk systems in universities has proven to be an effective strategy for addressing student concerns, providing timely support, and enhancing student engagement in the online learning environment. These systems streamline support services, improve communication and transparency, and contribute to overall student satisfaction. By adhering to best practices in implementation and management, universities can optimize the benefits of online help desk systems and ensure a positive learning experience for their students (Coman et al., 2020).

## **Methodology**

The study adopted a positivist, interpretive and critical approach. The positivist approach emphasizes objectivity and the use of quantitative methods, while the interpretive approach emphasizes subjectivity and the use of qualitative methods. (Creswell,2014). These were achieved through the adoption of international benchmarking which is the process of identifying, understanding and adopting outstanding practices from an organization for the sole purpose of improving performance (Watson; 1993). The overall goal of benchmarking was to ensure transfer of knowledge and experiences from academic institutions using the best practices criteria.

Interviews involved asking open-ended questions to gather detailed information about a user's experience on the platform to solve problems or issues. The explorative interviews enabled the creation of an open and inclusive dialogue that allowed all stakeholders to share their perspectives, concerns and ideas. These allowed for flexibility where follow-up questions were asked to allow stakeholders to provide detailed responses and insights hence identifying key parameters to include in the development of the online help desk system.

A review of the literature was necessary because it provided a comprehensive understanding of the existing knowledge, research and perspectives on the development and adoption of online help desks for academic institutions. To ensure a rigorous literature review, a systematic approach was adopted. Relevant scholarly articles, research papers, books and other authoritative sources were identified through comprehensive searches in academic databases and digital libraries. Keywords such as "online education support systems," "help desk systems," "teaching and learning support," and "online learning frameworks" were used to gather relevant literature. The selected sources were critically analyzed to inform the research, (Garrison & Kanuka, 2004).

### ***Stakeholder Consultations:***

Stakeholder consultations were conducted to gather insights from key individuals involved in the usage of the CUU ODEL platform. The stakeholders included students, faculty administration and teaching staff. Semi-structured interviews were conducted to understand their experiences, challenges and expectations regarding the existing CULP. The input provided by stakeholders served as valuable feedback for identifying specific requirements and features for the online Help Desk System, (Smith & Johnson, 2015).

### ***System Analysis Techniques***

System analysis techniques were employed to assess the current support system and identify its limitations and areas for improvement. Through a thorough examination of the existing infrastructure, workflows and user feedback, the research team identified pain points and bottlenecks in the support process. This analysis helped in identifying the functionalities, features, and integration requirements of the online Help Desk System to address the identified gaps effectively.

### ***Ethical Considerations***

Throughout the data collection process, ethical considerations were prioritized. Informed consent was obtained from participants involved in stakeholder consultations and their privacy and confidentiality were ensured. The collection and handling of data followed ethical guidelines and regulations, with appropriate measures taken to secure and protect sensitive information. The research team also adhered to relevant institutional ethical guidelines and obtained necessary approvals before conducting the study.

## **Results and findings**

### ***The Help Desk System***

The design and deployment of the online Help Desk System involved several stages. Initially, based on the findings from the stakeholder consultations, a conceptual framework was developed, outlining the desired features and functionalities of the system. Subsequently, a team of experienced developers and system designers translated the conceptual framework into a practical design, ensuring a user-friendly interface, seamless integration with the CUU ODEL platform and scalability. The Help Desk System was designed with a robust and scalable architecture to support the needs of the CUU ODEL platform. The system architecture comprises multiple components, including a web server, an application server and a database server. The web server provides the interface for users to access the system, while the application server handles the core functionalities and business logic. The database server stores all the relevant data, including user information, support tickets and system configurations.

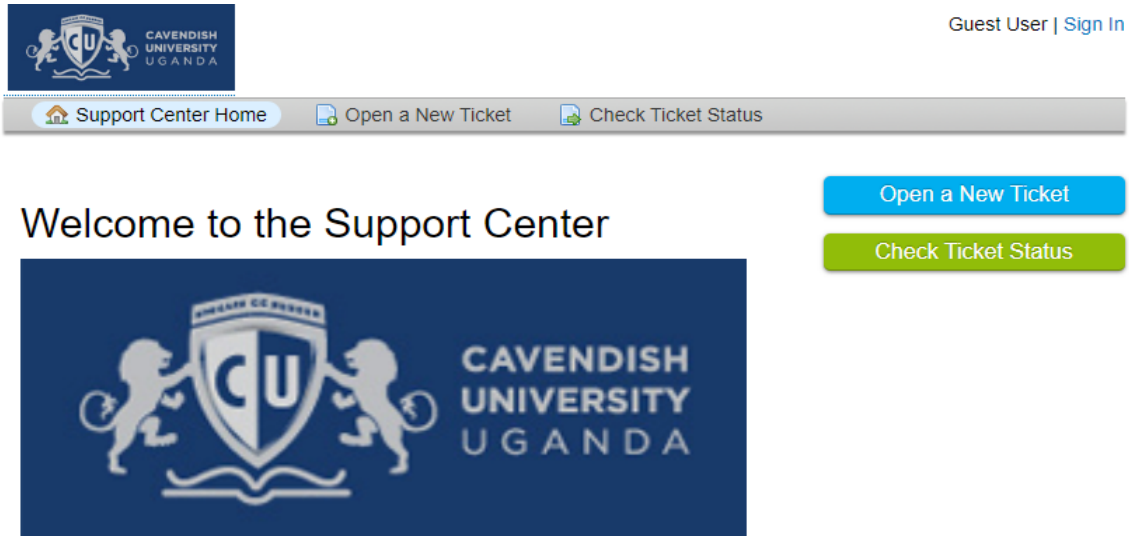
### ***4.2 User Interface Design***

The user interface (UI) of the Help Desk System was carefully designed to ensure ease of use and a seamless user experience. The UI features a clean and intuitive layout, allowing users to navigate the system effortlessly. The interface incorporates clear and descriptive labels, icons and buttons to guide users through the support ticket submission process. It is designed to be responsive, ensure compatibility across different devices and screen sizes.

Below is the step by step guide a user of the platform uses to post an issue

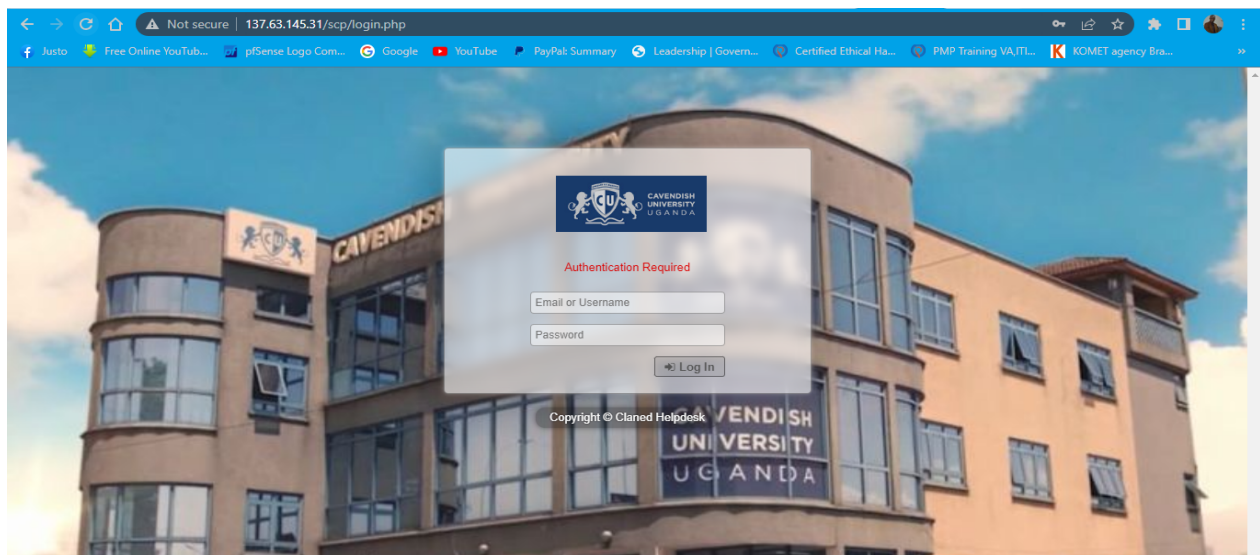
Step 1: A user has to sign into the platform as shown in the figure 1 and 2 below.

Figure 1: Welcome Page



In order to streamline support requests and better serve you, we utilize a support ticket system. Every support request is assigned a unique ticket number which you can use to track the progress and responses online. For your reference we provide complete archives and history of all your support requests. A valid email address is required to submit a ticket.

Figure 2: Staff Page





Once the user has signed in, he or she is able to log into the platform and log in a complaint. The process of logging in a complaint is known as create a ticket as shown in figure 4 below. However, if a user doesn't have an account, figure 3 below shows how to register an account.

**Figure 3: Account Registration for student**

**CAVENDISH UNIVERSITY UGANDA** Guest User | [Sign In](#)

[Support Center Home](#) [Open a New Ticket](#) [Check Ticket Status](#)

### Account Registration

Use the forms below to create or update the information we have on file for your account

---

**Contact Information**

**Email Address \***

**Full Name \***

Phone Number  Ext:

---

**Preferences**

Time Zone:

---

**Access Credentials**

Create a Password:

Confirm New Password:

Figure 4: Create a new Ticket

The screenshot shows the 'Open a New Ticket' page. At the top left is the Cavendish University Uganda logo. At the top right, it says 'Guest User | Sign In'. Below the logo is a navigation bar with three buttons: 'Support Center Home', 'Open a New Ticket' (which is highlighted), and 'Check Ticket Status'. The main heading is 'Open a New Ticket' in blue. Below it is the instruction: 'Please fill in the form below to open a new ticket.' The form is divided into three sections: 1. 'Contact Information' with fields for 'Email Address \*', 'Full Name \*', 'Phone Number', and 'Ext:'. 2. 'Help Topic' with a dropdown menu showing 'Feedback \*'. 3. 'Ticket Details' with the instruction 'Please Describe Your Issue'. It includes an 'Issue Summary \*' field, a rich text editor with a toolbar (containing icons for bold, italic, underline, link, etc.), a text area with the placeholder 'Details on the reason(s) for opening the ticket.', and a file upload area with the text 'Drop files here or choose them'. At the bottom of the form are three buttons: 'Create Ticket' (in red), 'Reset', and 'Cancel'. The footer of the page contains the text 'Copyright © 2023 - All rights reserved.'

Once a query or complaint has been logged in, the system sends it through to the relevant office who is also expected to log in for more details about the inquiry as shown in figure 4 above. One can be able to check on the status of the ticket by checking for a response through email. Figure 5 and 6 below show that one is given a unique identification number to enable follow up and know the status of the complaint, issue or ticket.

Figure 5: Email verification

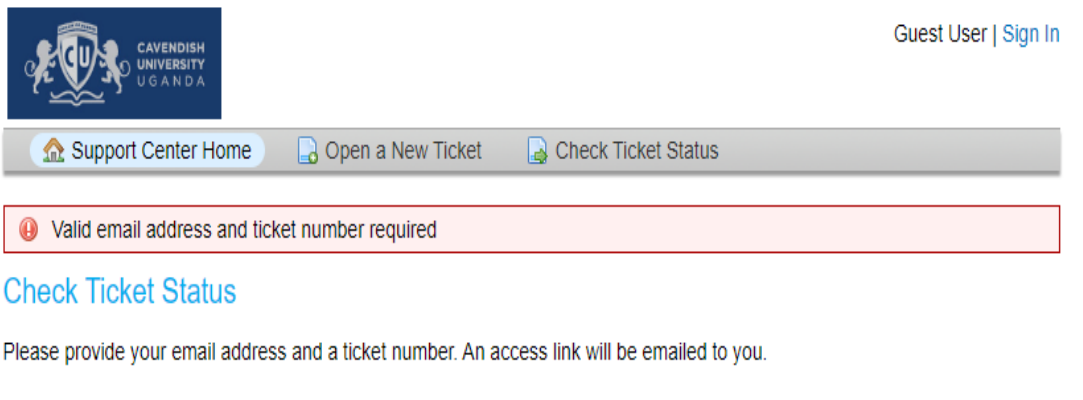
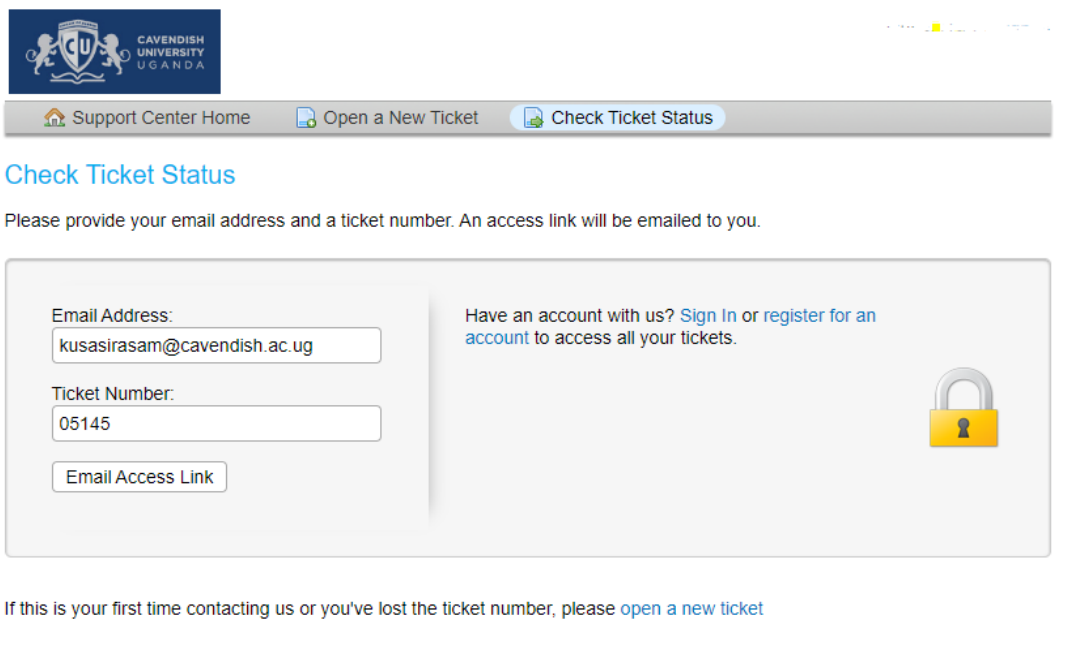


Figure 3: Check the status of your ticket



Once a query has been responded to, the complainant is notified through email as shown in figure 7 below. One is asked to rate the service if the complaint was responded to or solved in terms of time and efficiency.

Figure 4: Ticket responded to by relevant personnel

The screenshot shows the Claned Helpdesk interface. At the top left is the Cavendish University Uganda logo. The top right shows a user greeting: "Welcome, Justus. | Admin Panel | Profile | Log Out". The main navigation bar includes "Dashboard", "Users", "Tasks", "Tickets" (selected), and "Knowledgebase". Below this, there are filters for "Open" (2), "My Tickets", "Closed", "Search", and "New Ticket". A search bar contains "[advanced]". A dropdown menu for "Open" shows "Answered" (0) and "Overdue" (1). Below the filters is a table of tickets:

Subject	From	Priority	Assigned To
Not able to login in claned	kelan Nelah	Low	

At the bottom of the interface, it says "2023 Claned Helpdesk".

In response to figure 7 above, an example of a complaint by a student can be, inability to access modules on the platform. If a student says that he or she is encountering a problem of not accessing the modules on the Claned platform. Below is how the problem can be rectified.

The user can navigate the help desk system and select the option to submit a new support ticket. Here, the student will be presented with a form where he or she can provide details about the problem, including a description and any relevant attachments, such as error messages or screenshots as illustrated in Figure 8 below.

Figure 8: Submitting a Support Ticket

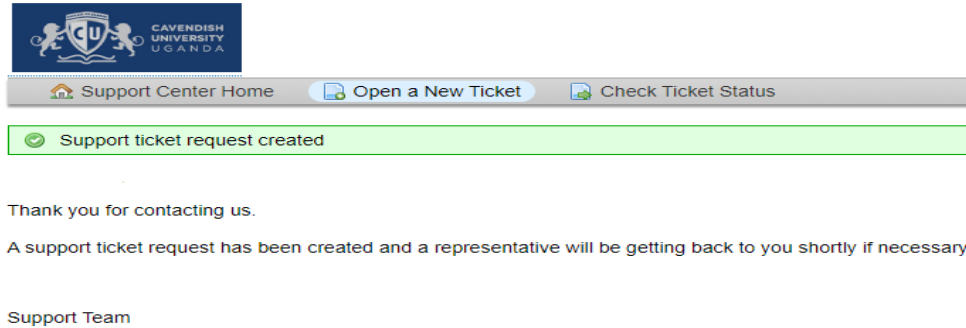
The screenshot shows the "Ticket Details" form. The title is "Ticket Details" and the subtitle is "Please Describe Your Issue". The "Issue Summary" field contains the text "not seeing the modules on the Claned platform". Below the summary is a rich text editor with a toolbar containing icons for bold, italic, underline, link, unlink, and other text formatting options. The text in the editor reads:

Hello ICT,  
 Im called Abbas, aa2776@sudents.cavendish.ac.ug,  
 I am trying to access claned platform but one module; Introduction to Programming is missing.  
 I have attached the screenshot for further clarification

Below the text area, there is a message "all changes saved" and a dashed box for file uploads with the text "Drop files here or choose them". At the bottom of the form, there are three buttons: "Create Ticket", "Reset", and "Cancel".

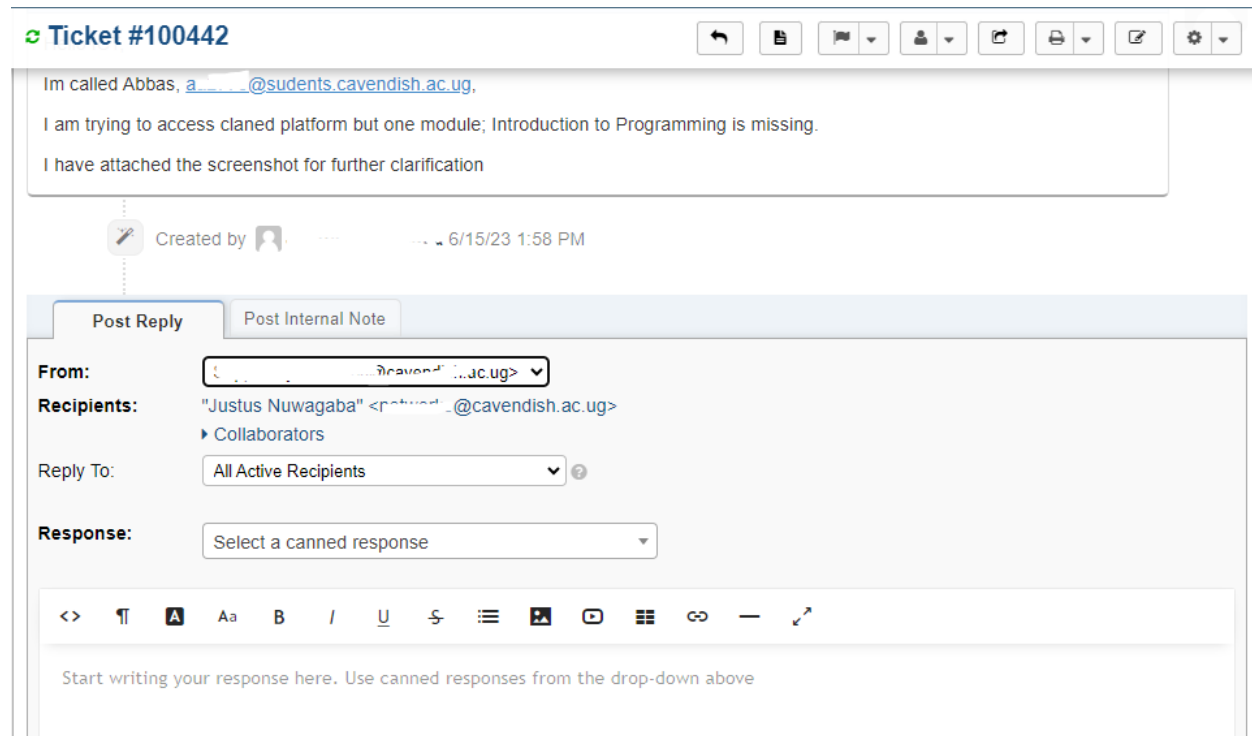
Once the user submits the ticket, he or she will receive a confirmation message indicating that the request has been successfully submitted. The ticket will then be assigned to the appropriate department for further investigation and resolution as shown in Figure 9 below.

Figure 9: Confirmation Message



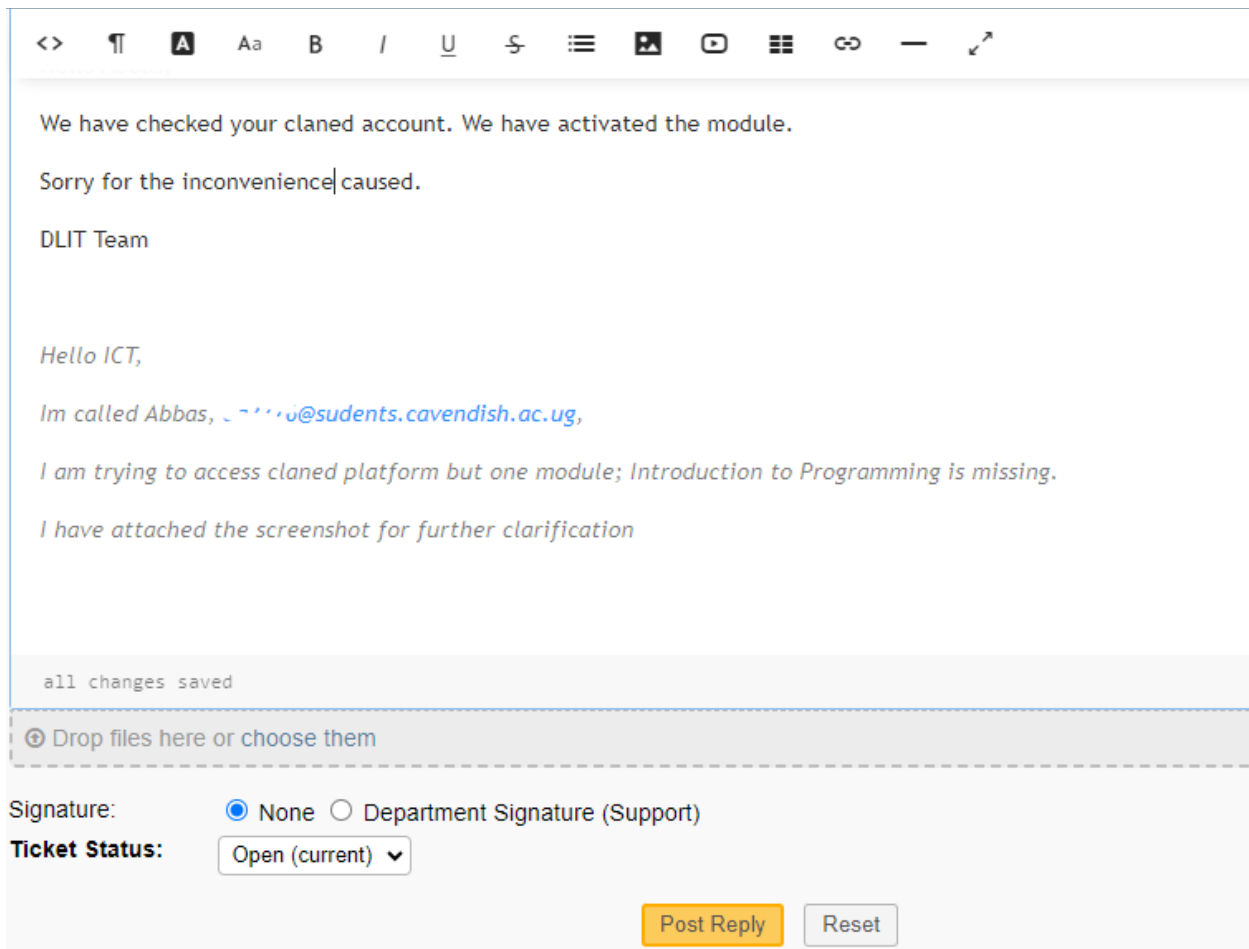
The designated department will receive the ticket and proceed with troubleshooting the issue. This includes investigating potential causes such as server configurations, account permissions, or platform integration problems. During this process, regular updates will be provided to the user to ensure transparency and keep them informed about the progress being made as shown in Figure 10 below.

Figure 10: Ticket process updates



Once the problem is identified and resolved, the support staff will update the ticket with the solution and notify the user accordingly. In the case of not being able to see modules on the CUU Claned online learning platform, the solution might involve checking the user's account settings, verifying module access permissions, or clearing browser cache and cookies. The user will be guided through the steps to implement the solution and resolve the problem as shown in Figure 11 below.

**Figure 11: Solution and User Notification**



The screenshot shows a support ticket reply interface. At the top is a rich text editor toolbar with icons for undo, redo, bold, italic, underline, link, unlink, list, image, video, table, and link. The main content area contains the following text:

We have checked your claned account. We have activated the module.

Sorry for the inconvenience|caused.

DLIT Team

*Hello ICT,*

*Im called Abbas, [abbas@students.cavendish.ac.ug](mailto:abbas@students.cavendish.ac.ug),*

*I am trying to access claned platform but one module; Introduction to Programming is missing.*

*I have attached the screenshot for further clarification*

Below the text is a status bar that says "all changes saved". Underneath is a dashed box for file uploads with the text "Drop files here or choose them". At the bottom, there are two radio buttons for "Signature": "None" (selected) and "Department Signature (Support)". To the right is a "Ticket Status:" dropdown menu set to "Open (current)". At the bottom right are two buttons: "Post Reply" (orange) and "Reset" (grey).

As seen in Figure 12 below, there are situations where further assistance is required, such as additional troubleshooting or personalized guidance. The user can communicate directly with the support staff through the help desk system. This ensures a seamless and efficient communication process, facilitating the resolution of more complex issues.

Figure 12: Direct Communication with Support Staff

<> T A Aa B I U ↵ ☰ 🖼️ 📺 ☰ 🔗 - ↗

*Hello ICT,*

*Im called Abbas, aa2776@sudents.cavendish.ac.ug,*

*I am trying to access claned platform but one module; Introduction to Programming is missing.*

*I have attached the screenshot for further clarification*

In case you still find it difficult, kindly reach out to me on this

Contact. 256 779 ... 54 32

unsaved

📎 Drop files here or choose them

Signature:  None  Department Signature (Support)

Ticket Status:

Post Reply Reset

By providing an intuitive user interface and guiding users through the process of submitting a support ticket, tracking progress, receiving updates and communicating with support staff, online help desk systems enable efficient and effective problem-solving. The use of screenshots within the system enhances the user experience by visually demonstrating the steps involved and ensuring clarity in communication.

Hello DLIT and ICT team,

Thank you for your support. My issue has been resolved.

Overall, a well-designed user interface in an online help desk system simplifies the process of problem-solving for users and contributes to a positive support experience on the CUU Claned online learning platform.

### **Integration of the online help desk into CUU ODEL Platform**

Integration of the online help desk system into the CULP ODEL platform should be achieved by first training all users on usability. Training sessions should benefit administrators, support staff, faculty staff and students to familiarize them with the system's features and functionalities. The training should cover various aspects like ticket submission, ticket management, communication channels and reporting capabilities. User-friendly documentation and tutorials should be provided to serve as reference materials.

It should be noted that the Help Desk System is configured and customized to align with the specific requirements of the CUU ODEL platform. Customization includes adapting the system's workflows, ticket categories and notification settings to match the support processes and terminology used in the ODEL platform. The system is also configured to incorporate CUU branding elements and visual identity, ensuring a consistent look and feel for users.

To evaluate the effectiveness of the online Help Desk System, user feedback and satisfaction surveys can be conducted by students and staff. The surveys will be designed to gather quantitative and qualitative data on user experiences, satisfaction levels and perceptions of the help desk system. Participants will be asked to rate various aspects such as ease of use, responsiveness, timeliness of support and overall satisfaction. The periodic feedback obtained from the surveys will be used to provide valuable insights into the system's impact on user satisfaction. These will be used to improve its usability.

To create an understanding of the outcomes of the support processes by the system, qualitative assessments will be done for purposes of getting real time feedback on experiences, timely response to issues, system efficiency and effectiveness. This is assumed to ensure improved usability, faster resolution enhanced communication channels between users and support staff with eventual promotion of a collaborative teaching and learning environment.

The system in addition aims at providing efficient workflows for uploading and managing course units and exams, minimizing errors and ensuring timely availability of learning materials. Faculty members and administrators could easily identify and rectify any content-related issues reported by students, leading to improved accuracy and quality of the educational resources.

In this section, the report summarizes the key findings of the study, highlighting the positive impact of the Help Desk System on the CUU ODEL platform. The findings demonstrated improved support processes, enhanced user experiences, and streamlined content management.



## Conclusion

The development of the online help desk system streamlines and emphasizes the importance of comprehensive training for all users to familiarize themselves with the system's features and functionalities. It establishes mechanisms for monitoring system performance, collecting user feedback and providing timely support and assistance. It emphasizes the dynamic nature of online education support and the need for the help desk system to evolve alongside technological advancements and user requirements.

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