Project and Professionalism

(6CS007)

A1: Project Report

Assignment Management System

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Professionalism Aspects

Professionalism consists of a list of characteristics and conduct that shape an individual's behaviour in an occupational or academic environment. It entails adherence to ethical standards, responsibility, and respect for colleagues, clients or fellow students. Being proficient in communication, both verbal and written is a key aspect with the potential to be professional and clear in communication. Reliability and time management are essential in establishing trust, whereas flexibility and ongoing learning demonstrate dedication to excellence and enhancement. Professionalism also entails a good attitude, mature conflict resolution, and adherence to organizational values. (Bell, 2025)

The social Impact

Social impact is the way an activity, policy, programme, or event influences individuals, communities, and society. It includes the alteration to social structures, behaviour, and relationships, with impacts on such matters as education, health, employment, culture, and general quality of life. Social impact can result in quality of life, opportunity, and stronger community ties if it is positive, but inequality, unrest, or environmental damage if it is negative. Organizations, governments, and individuals alike generally monitor social impact so that they can be sure their activities are adding to sustainable and significant development in society. (Mitchell, 2021)

Beneficial

It provides many advantages to both students and teachers, making the entire process of completing assignments and academic documents simpler. For students, it provides them with a single place where they can see, submit, and monitor their assignments. This eliminates the chances of missing deadlines and allows the student to have a notion of prerequisites and due dates for all assignments. The system also enables students to get feedback from instructors in real-time so that they may enhance their work and learn from their errors. Instructors benefit from the AMS because it simplifies grading through the organization of submissions and by giving an efficient way of reading and grading assignments. The system minimizes paperwork and manual tracking, which saves instructor time and provides a fair and transparent evaluation process. Additionally, the AMS may have features like plagiarism detection, maintaining academic integrity and lowering cheating incidences. It also allows for a more effective, streamlined, and productive learning experience, serving the interests of both students and educators by enhancing communications, accountability, and productivity. (Edsys, 2024)

Detrimental

Even though there are a lot of benefits to online forums, there are some drawbacks as well. Success for a forum depends heavily on active use, like posts, replies, and comments. If not used on a regular basis, members become disenchanted, which negatively affects learning and lowers overall activity levels. Furthermore, forums have a lot of individuals with varying opinions, and this can lead to misunderstandings or miscommunication, especially when differing views collide. With all these messages coming in on the platform, it could be hard to keep track of them, thereby resulting in stress and making it hard to address all concerns. Moreover, failure to respond could discourage users from further use, leading to frustration. In other cases, discussions would steer off course, losing valuable time. In addition, online forums sometimes act as a platform for inappropriateness or offensive posts, which create an unpleasant environment for users. Popular like based posts may also discourage open expression because users will always prefer popular opinions to others, undermining diversity of thought. (Robins-Early, 2024)

The Ethical Issues

Ethical issues in software development have become increasingly prominent in recent years, particularly concerning data privacy, algorithmic bias, and transparency. A significant concern is the misuse of personal information, where companies collect extensive user data without explicit consent, leading to potential exploitation and privacy violations. For instance, the proliferation of AI technologies has raised questions about personal data is harvested and utilized, often without individual's awareness or approval. Additionally, the rise of misinformation and deepfakes has been facilitated by advanced software tools, challenging the authenticity of information and posing risks to public trusts. The lack of oversight and accountability in software development processes further exacerbates these issues, as developers may not fully consider the ethical implications of their creations. To address these challenges, it is imperative for developers to integrate ethical considerations into the software development lifecycle, ensuring transparency, fairness, and respect for user autonomy. This includes obtaining informed consent for data collection, actively working to eliminate biases in algorithms, and fostering a culture of responsibility and ethical awareness within the tech community. (AIMultiple, 2024)

Case-Study1

In this case, a student subscribes to an online service for example, Chegg which offers solutions to textbooks and past assignment problems. The student uses these to complete their own assignments, submitting the provided solutions as their own without acknowledging the service or the authors of the solutions. This is a violation of academic integrity and university plagiarism policy. Not only does the student's behaviour misrepresent their own knowledge and abilities, but it is also part of a broader issue in educational contexts where these types of sites are used to circumvent learning. By submitting pre-formulated responses, the student is not interacting with course material in a manner that can lead to a failure to acquire actual skills. Additionally, this is also an ethical concern regarding grading fairness since the tutors end up marking work that does not belong to the student without their knowledge. The degree of use of these services poses a threat to the value of educational qualifications and the integrity of educational systems. (Chegg, 2024)

Case-Study2

In this case, a student who is stressed out by the demands of educations, employs the services of a third-party agency commonly known as an essay mill to create a pivotal assignment. Essay mills provide bespoke work for a fee, commonly promising high quality, original work that is tailored to the requirements of the student. The student subsequently submits the bought paper as his or her own deceiving, instructor and violating academic honesty standards. Such a contract cheating activity not only undermines the integrity of the educational system but also deprives the student of the learning experience of subject matter, exercise of critical thinking, and working independently on the assignment. Moreover, it distorts the grading process, as lecturers unknowingly grade work that is not a product of the student's own initiative or ability. The essay mill is increasingly becoming an issue of worry on all educational campuses and has urged greater demand for regulatory efforts and increased attention to eliminate this form of cheating and alleviate its negative impact on scholastic honesty and personal growth. (Michael Draper, 2021)

Possibilities of ethical issues in Assignment management system

1. Data Privacy Concerns
   - Handling of private student data, including personal and academic records
   - Risk of privacy violations if security measures are inadequate

- Potential vulnerability to hacking and unauthorized access

2. Plagiarism Detection Issues
   - Ethical issues if submissions from students are archived or redistributed without permission
   - Risk of intellectual property rights infringement
3. Grading Equity and Fairness
   - Computer or instructor grading must be transparent and unbiased
   - Risk of uneven academic performance due to biased grading systems
4. Unequal Distribution of Assignments
   - Favouritism or discrimination in assigning tasks
   - Underprivileged students, thus leading to unequal learning experiences
5. Intellectual Property Concerns
   - Student's original work may be turned in without acknowledgment or protection
   - No rights of ownership to the material presented by them
6. Transparency in Grading and Assignment Allocation
   - Lack of clarity in the grading algorithms may lead to compromised trust
   - Assignment distribution processes must be accountable and transparent
7. Informed Consent
   - Students must be aware of their data usage, storage, and sharing
   - Insufficient consent can lead to ethical as well as legal violations
8. Surveillance and Monitoring
   - Excessive monitoring via keystroke logging or time spent on activity
   - Can create a totalitarian learning environment, violating privacy
9. Ethical Solutions
   - Implement rigorous security policies for the protection of student data
   - Ensure transparency and fairness in grading and assignment of tasks
   - Obtain informed consent before collecting or using student data
   - Avoid excessive monitoring and respect student's privacy
   - Possess clear policies that safeguard academic integrity and intellectual property

The Legal Implications

A mainly deals with issues of copyright violation, data privacy, and accessibility. If students submit plagiarized work or use unauthorized software, it may lead to academic penalties or legal actions. AMS platforms also need to comply with data protection acts like GDPR or FERPA, safeguarding student data to avoid legal consequences. Accessibility issues may also lead to legal issues if the system is not accessible for disabled students. Besides, unauthorized use of software or failure to honor terms of use agreements can expose developers or institutions to lawsuits. Therefore, one needs to be in line with legal requirements to avoid serious legal threats.

Copyright issues

Copyright infringement arises when students or teachers use or redistribute copyrighted content without permission. When a student submits work with plagiarized content or employs copyrighted content without permission, they can draw serious legal consequences such as lawsuits, academic sanctions, and institutional sanctions (Johnson M. &., 2023). Most academic institutions have in position protocols to address this, ensuring proper citation and use of materials. In addition, instructors and administrators must ensure that any material uploaded on the site, whether readings, lectures, or multimedia, is lawfully licensed or uploaded under fair use provisions. To ensure non-infringement of copyright, the system will

provide guidance on proper citation and provide transparent references to original sources, thereby preventing unauthorized usage of materials.

General Data Protection Regulation

The General Data Protection Regulation states that individuals must be in control of their personal information. In an assignment management system, where users such as students, teachers, and administrators are interacting and sharing personal details, GDPR mandates that companies make sure this information is secure from unauthorized access or abuse. Personal details like names, email addresses, phone numbers, and other sensitive data must be processed securely. In this system, the user's privacy is respected by providing the facility of anonymous usernames, hiding the full name and other sensitive data unless absolutely required. Passwords are encrypted and only available to the user, with no access to the admin. The users are required to provide a valid email address for account recovery, but other personal information is not asked unless necessary for assignment submission. When an admin deletes a user account, all the personal details associated with the account are erased from the system database, according to GDPR protocols for data deletion and security. (Commission, 2021)

Case Study

In March 2024, the United States judicial conference made an important policy change mandating random judge assignment in civil cases to enjoin or mandate state or federal action. The policy was enacted to offset judge shopping, which is the selective filing of cases with specific court divisions so that they would be heard by a judge who is perceived to be sympathetic to their side. The new policy ensures that cases are randomly allocated across an entire district and not grouped in specific divisions, precluding potential prejudices and enhancing judicial impartiality. The reform was particularly significant in politically sensitive cases where plaintiffs previously abused the freedom to sue in regions where judges had a well-known ideological learning. The ruling has been widely viewed as a move towards maximizing transparency and fairness in the federal courts, reacting to concerns that the choice of venue could be gamed to influence case outcomes. Critics argue that the reform may cause efficiency issues for that courts and lawyers who are now required to adapt to an assignment process that has less predictability, but others note that the integrity of the system is of greater importance than any type of administrative barrier. By enforcing this randomization, the judicial conference aims to preserve basic principles of fairness, impartiality, and equal access to justice, so that no party can unjustly influence the adjudication process by manipulative forum choice. (States, 2024)

The Security Aspects

Security is a critical element in protecting sensitive data by implementing appropriate measures to safeguard information such as user credentials, personal details, and submitted assignments. (Johnson, 2022) The increasing number of cyber threats necessitates the development of secure applications to prevent unauthorized access, data breaches, and leaks. Weak security implementations can expose user data, leading to potential misuse and privacy violations. Common security risks include weak authentication mechanisms, poor access control policies, and system misconfigurations that create vulnerabilities. (Insights, 2021)

Case Study

In 2021, a massive security incident occurred in the major university. The incident began when an external hacker gained remote access to the student portal of the university by exploiting poor password policies. The intruder utilized this entry to manipulate assignment submissions, modifying grades and posting counterfeit documents. The attacker bought the admin's account through a phishing attack that compromised their login credentials on May 10. The earlier introduced MFA was turned off by the attacker to achieve higher levels of access. Upon accessing levels, the attacker took over the AMS database and extracted sensitive information related to the students such as marks and information that is personally identifiable. The system security flaw was found on May 15 when students began noticing discrepancies in their grades. The university IT department, upon investigation, found that the intruder had used SQL injection to gain access to academic data and manipulate grades. The university immediately took steps to lock down the system, restore access using backup data, and reapply security features such as stronger encryption, stronger access controls, and revised MFA policies. The incident resulted in a temporary suspension of the AMS, but the institution managed to restore the system's integrity following an extensive security review. (Team C. , 2021)

Password Hashing

The AMS securely stores passwords using secure hashing algorithms like PBKDF2 or bcrypt, which save the encrypted and guard against unauthorized use. (Django, 2022)

Password Reset

Users may change their passwords through a secure mechanism:

- Enter the registered email address
- The system sends an email with a one-time, time-limited password reset link
- The user clicks the link which directs them to a secure page to enter a new password
- The password is refreshed on submission and the user can log in with the new credentials. (VAADATA, 2023)

User Deletion

- Administrators can delete user accounts that have been inactive for a specified period
- All associated data, including personal information and submissions are permanently removed to maintain privacy

Authorized User Access

There is role-based access control (TECH, 2023) :

Students

- Submit assignments
- View feedback

Teachers

- Review and grade assignments
- Provide feedback

Admins

- Manage user roles
- Schedule presentations
- Oversee system configurations

Logout Functionality

- Users can logout at any time to prevent unauthorized access, especially on shared or public devices

Session Expiration

- To enhance security, the system automatically logs out users after a period of inactivity

Security and Backup

Data Encryption

- All sensitive data, including user information and submissions are encrypted both in transit and at rest at prevent unauthorized access

Regular Backups

- The system performs regular backups of all data to ensure recovery in case of data loss or system failure

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