Functional requirement for the Dean of Students Management System (DOS-MS) including the relevant Albanian legislation

- **Student Enrollment Management (Student Admission Processing)**

  - **Legal Basis**: *Law No. 9741, dated 21.05.2007, "On Higher Education in the Republic of Albania"*
  - **Justification**: This law mandates that universities implement transparent and standardized admission procedures. Automating student enrollment ensures compliance by providing a fair and efficient admission process, reducing administrative errors, and maintaining accurate records.

- **Scholarship Allocation (Financial Aid Management)**

  - **Legal Basis**: *Law No. 9741, dated 21.05.2007, "On Higher Education in the Republic of Albania"*
  - **Justification**: The law requires that scholarships and financial aid be awarded based on predefined criteria to ensure fairness. An automated system facilitates objective and transparent allocation, minimizing bias and errors, and maintaining clear records for auditing purposes.

- **Real-time Report Generation (Automated Reporting System)**

  - **Legal Basis**: *Law No. 9741, dated 21.05.2007, "On Higher Education in the Republic of Albania"*
  - **Justification**: Universities are obligated to submit periodic reports to educational authorities. An automated reporting system ensures timely, accurate, and efficient compliance with these requirements, reducing manual workload and errors.

- **Student Data Security (Data Protection and Privacy Compliance)**

  - **Legal Basis**: *Law No. 124/2024, "On the Protection of Personal Data"*, aligned with the General Data Protection Regulation (GDPR)
  - **Justification**: This law mandates strict guidelines for handling personal data. Implementing robust security measures, such as encryption and access controls, ensures the protection of student information, compliance with legal obligations, and mitigation of risks related to data breaches.

- **Attendance Tracking (Digital Attendance Management)**

  - **Legal Basis**: *Law No. 9741, dated 21.05.2007, "On Higher Education in the Republic of Albania"*

- **Justification**: The law requires monitoring of student attendance as part of academic performance evaluation. A digital attendance system provides accurate records, ensures compliance with attendance policies, and supports academic assessments.

- **Fee Payment Processing (Student Financial Management)**

  - **Legal Basis**: *Law No. 55/2020, "On Payment Services"*
  - **Justification**: This law regulates electronic payment services in Albania. Automating fee payments ensures secure, transparent, and legally compliant financial transactions, reducing risks of mismanagement and fraud, and providing clear audit trails.

- **Extracurricular Activity Management (Student Engagement Tracking)**

  - **Legal Basis**: *National Youth Strategy 2022–2029*
  - **Justification**: The strategy emphasizes the importance of extracurricular activities for youth development. An automated system to manage these activities ensures proper documentation, supports student engagement, and aligns with national educational objectives.

- **Student Profile Management (Student Records Administration)**

  - **Legal Basis**: *Law No. 9741, dated 21.05.2007, "On Higher Education in the Republic of Albania"*
  - **Justification**: The law mandates accurate and up-to-date student records. A centralized digital profile system ensures compliance by securely storing and updating student information, facilitating efficient academic tracking and administrative processes.

- **Course Registration (Online Course Enrollment System)**

  - **Legal Basis**: *Law No. 9918/2008, "On Electronic Communications in the Republic of Albania"*
  - **Justification**: This law promotes the use of electronic systems for public services. An online course registration system enhances efficiency, reduces scheduling conflicts, and aligns with legal frameworks supporting digital solutions in education.

- **Student Communication System (Academic Notification System)**

  - **Legal Basis**: *Law No. 9918/2008, "On Electronic Communications in the Republic of Albania"*
  - **Justification**: The law recognizes electronic messaging as an official means of communication. Implementing a structured notification system ensures timely and effective communication between students and faculty, enhancing administrative efficiency and compliance.

- **Complaint and Request Management (Student Grievance Redressal System)**

- **Legal Basis**: *Law No. 9741, dated 21.05.2007, "On Higher Education in the Republic of Albania"*
- **Justification**: The law requires institutions to establish mechanisms for handling student complaints. A digital grievance redressal system ensures fair, transparent, and efficient resolution of issues, maintaining records for accountability and compliance.

- **Document Generation (Automated Academic Document Processing)**

  - **Legal Basis**: *Law No. 9741, dated 21.05.2007, "On Higher Education in the Republic of Albania"*
  - **Justification**: The law mandates the issuance of standardized academic documents. Automated document generation ensures accuracy, consistency, and compliance with national and international standards, facilitating credential recognition.

Non-Functional requirement for the Dean of Students Management System (DOS-MS) including the relevant Albanian legislation

3.2.1 Product Requirements

3.2.1.1 Security Requirements

- **Encryption of sensitive student and faculty data at rest and in transit.**
  - **Legal Basis**: *Law No. 124/2024, "On the Protection of Personal Data"*
  - **Justification**: This law mandates the protection of personal data, aligning with GDPR standards. Encrypting data ensures that sensitive information remains confidential and protected from unauthorized access, thereby complying with legal obligations.
- **Implementation of multi-factor authentication (MFA) for all administrative users.**
  - **Legal Basis**: *Law No. 25/2024, "On Cybersecurity"*
  - **Justification**: The cybersecurity law emphasizes the need for robust authentication mechanisms to prevent unauthorized system access. Implementing MFA enhances security by requiring multiple verification methods, thereby reducing the risk of breaches.
- **Role-based access control (RBAC) to restrict unauthorized access to confidential records.**
  - **Legal Basis**: *Law No. 124/2024, "On the Protection of Personal Data"*
  - **Justification**: Implementing RBAC ensures that only authorized personnel have access to specific data, minimizing the risk of data breaches and ensuring compliance with data protection regulations.
- **Periodic penetration testing and security audits.**
  - **Legal Basis**: *Law No. 25/2024, "On Cybersecurity"*
  - **Justification**: Regular security assessments help identify and mitigate vulnerabilities, ensuring the system's resilience against cyber threats and

compliance with legal requirements for maintaining robust cybersecurity measures.

- **Secure backup mechanisms to prevent data loss in case of cyberattacks.**
  - o **Legal Basis**: *Law No. 25/2024, "On Cybersecurity"*
  - o **Justification**: Implementing secure backup solutions ensures data integrity and availability, allowing for quick recovery in the event of cyber incidents, thus aligning with legal mandates for data protection.
- **Compliance with GDPR and local data protection laws.**
  - o **Legal Basis**: *Law No. 124/2024, "On the Protection of Personal Data"*
  - o **Justification**: Adhering to GDPR and local data protection laws ensures that personal data is processed lawfully, transparently, and securely, safeguarding individuals' rights and maintaining institutional integrity.

3.2.1.2 Performance Requirements

- **The system should have a response time of less than 3 seconds for common operations.**
  - o **Legal Basis**: *Law No. 9918/2008, "On Electronic Communications in the Republic of Albania"*
  - o **Justification**: Ensuring prompt system responses enhances user experience and aligns with the law's objective to promote efficient electronic communications.
- **High availability (at least 99.9% uptime) during academic periods.**
  - o **Legal Basis**: *Law No. 9918/2008, "On Electronic Communications in the Republic of Albania"*
  - o **Justification**: Maintaining high system availability ensures continuous access to educational resources, supporting the law's goal of fostering reliable electronic communication services.
- **Support for concurrent logins of at least 10,000 users without performance degradation.**
  - o **Legal Basis**: *Law No. 9918/2008, "On Electronic Communications in the Republic of Albania"*
  - o **Justification**: Accommodating a large number of simultaneous users ensures scalability and aligns with legal principles promoting the development of robust electronic communication networks.

3.2.1.3 Reliability Requirements

- **Automated backups to ensure minimal data loss in case of failures.**
  - o **Legal Basis**: *Law No. 25/2024, "On Cybersecurity"*
  - o **Justification**: Regular automated backups safeguard data integrity and ensure quick recovery from system failures, adhering to legal requirements for data protection.
- **Redundancy and failover mechanisms for database availability.**
  - o **Legal Basis**: *Law No. 25/2024, "On Cybersecurity"*

- o **Justification**: Implementing redundancy and failover strategies ensures continuous database access, minimizing downtime and aligning with legal mandates for maintaining system reliability.
- **A disaster recovery plan with a maximum downtime of 15 minutes in case of failure.**
  - o **Legal Basis**: *Law No. 25/2024, "On Cybersecurity"*
  - o **Justification**: A comprehensive disaster recovery plan ensures rapid restoration of services, minimizing operational disruption and complying with legal standards for cybersecurity resilience.

3.2.2 Organizational Requirements

1. **Training and Documentation**
   - o **Comprehensive manuals and documentation for students, faculty, and administrators.**
     - ▪ **Justification**: Providing detailed documentation facilitates effective system use, enhancing user competency and satisfaction.
   - o **Training programs for university staff on system utilization.**
     - ▪ **Justification**: Structured training ensures staff are

Domain requirement for the Dean of Students Management System (DOS-MS) including the relevant Albanian legislation

- **Academic Record Management**

  - **Secure and structured storage of student grades and attendance records.**
    - o **Legal Basis**: *Law No. 80/2015, "On Higher Education and Scientific Research in Higher Education Institutions in the Republic of Albania"*
    - o **Justification**: This law mandates that higher education institutions maintain accurate and secure records of student performance. Implementing structured storage ensures data integrity and compliance with national educational standards.
  - **Audit logs for all record modifications.**
    - o **Legal Basis**: *Law No. 80/2015*
    - o **Justification**: Maintaining detailed audit logs aligns with requirements for transparency and accountability in academic record-keeping, facilitating compliance with institutional policies and legal obligations.

- **Scholarship and Financial Aid Processing**

  - **Automated eligibility checks for scholarships.**
    - o **Legal Basis**: *Law No. 80/2015*
    - o **Justification**: Automating eligibility assessments ensures fair and efficient allocation of financial aid, adhering to legal standards for equitable treatment of students.

- **Compliance with institutional financial aid policies.**
  - ○ **Legal Basis**: *Law No. 80/2015*
  - ○ **Justification**: Ensuring that financial aid processing aligns with institutional policies guarantees adherence to national regulations governing higher education funding.

- **Student Transition Management**

  - **Automatic transition of students from high school applicants to fully enrolled university students.**
    - ○ **Legal Basis**: *Law No. 80/2015*
    - ○ **Justification**: Facilitating seamless transitions supports the law's objective of promoting accessible and continuous education pathways.

- **Security and Data Protection**

  - **Implementation of encryption for sensitive student information.**
    - ○ **Legal Basis**: *Law No. 124/2024, "On Personal Data Protection"*
    - ○ **Justification**: Encrypting sensitive data ensures confidentiality and compliance with data protection laws, safeguarding student privacy.
  - **Role-based access control for university personnel.**
    - ○ **Legal Basis**: *Law No. 124/2024*
    - ○ **Justification**: Implementing access controls ensures that only authorized personnel can access specific data, minimizing the risk of unauthorized disclosures.

- **Scalability and Performance**

  - **The ability to handle a growing number of student records.**
    - ○ **Justification**: Designing the system for scalability ensures it can accommodate increasing data volumes without performance degradation, supporting institutional growth.

- **Workflow and Process Automation**

  - **Automation of administrative tasks, including course registration and reporting.**
    - ○ **Justification**: Automating routine tasks enhances operational efficiency, reduces errors, and allows staff to focus on more strategic activities.

- **Audit and Reporting Capabilities**

  - **Detailed reporting for compliance audits and administrative reviews.**
    - ○ **Legal Basis**: *Law No. 80/2015*
    - ○ **Justification**: Comprehensive reporting functionalities facilitate compliance with legal and regulatory requirements, supporting transparency and accountability.

- **Student Experience and Accessibility**

    - **User-friendly interfaces for web and mobile platforms.**
        - o **Justification**: Intuitive design enhances user satisfaction and engagement, encouraging effective use of the system.
    - **Accessibility support for students with disabilities.**
        - o **Legal Basis**: *Law No. 93/2014, "On the Inclusion and Accessibility of Persons with Disabilities"*
        - o **Justification**: Ensuring accessibility aligns with legal mandates to provide equal educational opportunities for all students, regardless of disabilities.