SCS 1306 – Introduction to Software Engineering
Feasibility Study

A feasibility study is a critical step in the project planning process that assesses whether a proposed solution is viable, practical, and achievable within the constraints of time, cost, and resources. It is conducted before significant resources are committed to the development of a system or product. The primary goal of a feasibility study is to determine if the project is worth pursuing and to identify potential risks and challenges early on.

Feasibility studies typically examine several key aspects, including technical, economic, legal, operational, and schedule feasibility. By analyzing these dimensions, stakeholders can make informed decisions about whether to proceed with the project, modify it, or abandon it altogether. A well-conducted feasibility study provides a clear understanding of the project's potential success and supports strategic planning and resource allocation.

1. **Technical Feasibility**
    - Technology availability and technical team skills
2. **Economic Feasibility**
    - Cost-benefit analysis, budget analysis
3. **Operational Feasibility**
    - Organizational readiness, user acceptance
4. **Legal Feasibility**
    - Compliance with laws and regulations (e.g., GDPR, HIPAA)
5. **Schedule Feasibility**
    - Timeliness and project deadlines

Instructions

Read the given scenarios carefully. Evaluate the feasibility of the project by filling in the table below. For each feasibility type, note your evaluation, potential risks or concerns, and your justification based on the scenario.

Feasibility Type	Evaluation (Yes/No/Partial)	Risk/Concern	Justification
Technical			
Economic			
Operational			
Legal			
Schedule			

Scenario 1: Small Healthcare Clinic System

A small private healthcare clinic located in a semi-urban area wants to digitize its operations by implementing an online system for managing patient appointments and storing electronic health records (EHR). The clinic currently uses a paper-based system. The new system should allow patients to book appointments online, doctors to access patient records digitally, and administrative staff to update patient files after consultations.

The clinic has only one IT technician who usually handles basic troubleshooting and internet maintenance. Management is concerned about whether they can afford a full software development project or should buy a ready-made solution. They are also highly cautious about the legal implications of handling patient data under privacy regulations and data protection laws. Additionally, the clinic hopes to launch this new system in less than four months, before their peak patient season.

- Identify and assess all five components of feasibility.
- Provide a brief justification for each assessment.

Feasibility Type	Evaluation	Risk/Concern	Justification
Technical	Partial	Only one IT technician; no prior system integration	Limited in-house expertise
Economic	No	High cost of custom solution; budget likely insufficient	May need an external vendor or subscription-based solution
Operational	Yes	Clinic staff may adopt a system if training is provided	Small team, clear workflow benefits
Legal	No	Patient data must comply with HIPAA/GDPR	Needs legal vetting for privacy & security
Schedule	Partial	4 months may be tight depending on complexity	Off-the-shelf product may help meet timeline

Scenario 2: University Student Portal Upgrade

A state university plans to upgrade its existing student portal to include mobile access, real-time grade tracking, chat support with faculty, and digital submission of assignments. The current portal is web-based and rarely updated. Students have frequently complained about difficulty in accessing grades and delays in information updates.

The IT department has a small team of developers who maintain the university's digital infrastructure. The university has received limited government funding for the upgrade. There are also concerns from staff about the adaptability of older faculty members who are not comfortable with new technology. The project needs to be completed before the next academic year begins, which is six months away.

The administration wants to ensure that the system complies with national educational data protection policies and that student data is not shared with third parties. They are also considering integrating AI-based chat support in future phases.

- Evaluate the feasibility based on technical, economic, operational, legal, and schedule aspects.
- Identify risks and suggest mitigation strategies.

Scenario 3: Smart Retail Kiosk System

A large retail chain with over 200 outlets across the country is considering the implementation of smart kiosks inside each store. These kiosks would allow customers to check product availability, compare features, watch promotional videos, and place orders. The goal is to reduce the burden on sales staff and improve customer engagement.

The company has strong financial capacity but limited experience in hardware-software integration. They are planning to use custom-built kiosks with touchscreen displays and built-in inventory access through their existing ERP. Concerns include high setup costs, maintenance logistics across all outlets, training retail staff to assist customers in using the kiosks, and the time it will take to deploy the system chain-wide.

Management wants the first phase (50 kiosks) to be deployed within 3 months as a pilot before committing to a national rollout.

- Discuss each type of feasibility in the context of this smart kiosk system.
- Make a recommendation on whether the pilot should proceed.

Scenario 4: Online Freelance Tutoring Platform

A tech startup aims to launch a global online platform connecting freelance tutors with students. The platform will support video conferencing, schedule management, subject filtering, secure payments, and real-time progress tracking. The startup team consists of 3 full-time developers and 1 project coordinator, all working remotely.

They have initial seed funding for only six months and plan to launch a minimum viable product (MVP) within 4 months. Their target market includes high school students in South Asia, with plans to expand globally. Major concerns include integrating a stable video platform, ensuring payment gateway security, meeting country-specific education and data regulations, and attracting users through social media campaigns.

- Conduct a full feasibility study for the MVP launch.
- Determine which areas are most risky and suggest alternatives.

Scenario 5: Mobile Voting Application for University Elections

A student union at a major university is proposing a mobile voting application for conducting student elections. The idea is to allow students to vote remotely using their smartphones rather than physical ballot boxes. The application must ensure security, user identity verification, transparency, and real-time vote counting.

The project has support from the student council and partial funding from the university's IT budget. The development will be carried out by final-year students from the Computer Science department as part of their capstone project. The plan is to complete and deploy the app within 3 months to coincide with the upcoming student elections.

However, concerns have been raised about vote tampering, data security, and whether the student team has the expertise to deliver a secure, scalable application. There is also the question of whether students and faculty members will trust and adopt this digital approach over the traditional manual voting system.

Scenario 6: Disaster Relief Coordination Web Portal

A non-governmental organization (NGO) focused on emergency disaster response wants to build a web-based portal to coordinate relief efforts. This system would track ongoing disaster zones, allow volunteers to register and be assigned tasks, and let donors see real-time needs and make donations directly.

The NGO has some donor backing and access to a few freelance developers. The system must work even under poor network conditions in rural disaster-hit areas. The organization also needs the system to be multilingual to serve different regions and must comply with international standards for humanitarian data handling.

The expected completion time is 5 months, but the NGO leadership lacks technical background. They are unsure whether to build the system from scratch or use existing open-source frameworks and customize them. The project is highly mission-critical, especially during seasonal floods and earthquakes.

Submission:

- **Time allowed:** 1.00 PM – 3.00 PM.
- **Submission method:** Upload your report to the **VLE (Virtual Learning Environment)** using the provided link.
- **Report**: Include tables for each scenario.
- **File format:** PDF
- **File naming format: YourName with Initials_IndexNumber_FS.pdf**
  (e.g., Weerawardhana APK_122344_FS.pdf)