

L4 SOD A&B

Backend System Design homework

To be submitted on Monday

I. Multiple Choice Questions

1. Which of the following is **NOT** a phase in the System Development Life Cycle (SDLC)?
 - A) Implementation
 - B) Maintenance
 - C) Abstraction
 - D) Testing
2. Which framework is commonly used with Python for backend development?
 - A) Django
 - B) Laravel
 - C) Ruby on Rails
 - D) Spring
3. What does the acronym FURPS stand for in requirements gathering?
 - A) Functionality, Usability, Reliability, Performance, Supportability
 - B) Functionality, Usability, Responsiveness, Performance, Scalability
 - C) Functionality, Universality, Reliability, Performance, Supportability
 - D) Flexibility, Usability, Reliability, Performance, Supportability
4. Which of the following is an example of a system analysis tool?
 - A) JSON
 - B) Decision tree

- C) API
- D) UML

5. Which of the following is a key component of system interaction?

- A) Web server
- B) Functionality requirements
- C) FURPS
- D) SDLC

II. True or False Questions

Indicate whether the following statements are True (T) or False (F).

- a) FURPS is an acronym used to describe the phases of the System Development Life Cycle (SDLC).
- b) PHP is a backend development technology that has its own frameworks.
- c) JSON is a data interchange format that is often used in APIs.
- d) A Decision table is a system analysis tool used to represent and analyze complex decision-making scenarios.
- e) The purpose of system interaction is to define the roles and functions of various components within a system.

III. Matching Questions

Match each Key Term in Column A with its corresponding Definition from Column B. Write the correct letter in the blank space provided in Column No.

No.	Column A: Key Terms	Column B: Definitions
.....	1. Backend	A) A structured collection of data stored and accessed electronically.
.....	2. FURPS	B) A software environment that provides foundational services for other software.
.....	3. System	C) A set of guidelines, libraries, and tools used to develop software applications.

.....	4. Server	D) The physical or virtual machine that provides services to other computers over a network.
.....	5. Database	E) The process of planning, creating, testing, and deploying an information system.
.....	6. Operating System	F) A method of representing complex systems visually through diagrams.
.....	7. System Development Life Cycle (SDLC)	G) A software component that allows two applications to communicate with each other.
.....	8. API	H) A concept that outlines the requirements for software, focusing on different quality attributes.
.....	9. JSON	I) The part of a system that handles the logic, database interactions, and server-side processing.
.....	10. Framework	J) A data format often used in web APIs for transmitting structured data.
.....	11. UML	K) An organized set of components working together to achieve a common goal.

IV. Open-Ended Questions

- What is meant by the term "Technology Stack" in a system report?
- How is backend security typically addressed in a system report?
- Why is it important to measure a system's performance?
- What kind of operational challenges can occur in managing backend systems?
- Provide some examples of problems that can be found in backend systems.
- Why is scalability an important consideration for a backend system?
- What role does team training play in improving a backend system?