

## ONLINE CLIPBOARD – PROJECT REPORT

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1. Introduction The Online Clipboard project is a web-based application developed using Spring Boot. It allows users to store, manage, and share text snippets securely across devices. The project demonstrates a full-stack approach with a focus on modularity, scalability, and user-friendly interface.

Objectives:

- Provide a centralized platform for clipboard management.
- Ensure secure storage and retrieval of text entries.
- Enable cross-device accessibility.
- Maintain a simple and responsive UI.

2. System Architecture The application follows a three-tier architecture:

1. Presentation Layer – Thymeleaf templates integrated with Spring Boot controllers.
2. Business Logic Layer – Services handling validations and business rules.
3. Data Access Layer – MySQL database with JPA/Hibernate ORM.

Flow: User → Controller → Service → Repository → Database

### 3. Implementation

Backend:

- Built with Spring Boot.
- REST APIs implemented in controllers to handle CRUD operations.
- Core components: Model classes (User, ClipboardEntry), Service layer, Repository interfaces.

Example Snippet:

```
@RestController
@RequestMapping("/api/clipboard")
public class ClipboardController {
    @Autowired
    ClipboardService service;
```

```
@PostMapping("/add")
public ResponseEntity add(@RequestBody ClipboardEntry entry) {
    service.saveEntry(entry);
    return ResponseEntity.ok("Added Successfully");
}
```

Frontend:

- Uses Thymeleaf, HTML5, CSS3, and Bootstrap.
- JavaScript enables clipboard interactions (copy/paste).
- Responsive and clean interface for ease of use.

Database: - MySQL database with tables for Users and Clipboard Entries. - Entities mapped via JPA/Hibernate. - Supports structured storage and quick retrieval.

4. Testing and Deployment Testing: - Unit Testing: JUnit - Integration Testing: Postman - Logging and Exception Handling

Deployment: - Hosted on embedded Spring Boot server or Apache Tomcat. - Remote MySQL database connection configured.

Future Scope: - Add cloud synchronization - Implement user collaboration - Mobile app integration

Conclusion: The Online Clipboard project successfully demonstrates a full-stack Spring Boot application that provides secure, accessible, and efficient clipboard management.