**FINAL YEAR PROJECT – I**

***HR360-USING AI FOR SMART WORKFORCE AND PAYROLL AUTOMATION***

**Cross-Cutting Concerns:**

| **Concern** | **Description** | **Implementation in HR360** |
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| **Security** | Protecting system and data from unauthorized access | User authentication & authorization, Password encryption, 2FA for HR accounts, Data encryption for sensitive info |
| **Logging** | Recording system activities and events | User login/logout logs, Payroll processing logs, Leave request tracking, System error logs |
| **Error Handling** | Managing and responding to system errors | User-friendly error messages, Database connection failures, File upload errors, API timeout handling |
| **Performance** | System efficiency and response time | Database query optimization, Fast API responses, Concurrent user handling (50+), Efficient file processing |
| **Data Validation** | Ensuring data integrity and correctness | Employee data validation, Salary calculation accuracy, Leave date validation, Resume file format checking |
| **Configuration Management** | Managing system settings and parameters | Database connection settings, Email notification configs, Tax calculation parameters, System-wide constants |
| **Caching** | Storing frequently accessed data temporarily | Employee profile caching, Payroll templates, Attendance records, Common HR policies |
| **Auditing** | Tracking changes and maintaining records | Salary change history, Leave approval trail, Employee data modifications, System access records |
| **Notification** | Informing users about system events | Email notifications for leave status, Interview scheduling alerts, Payslip availability notices, System maintenance updates |
| **Session Management** | Managing user sessions and state | User login sessions, Session timeout handling, Multi-device login control, Secure logout functionality |

**Implementation Priority for University Project:**

1. **High Priority**: Security, Error Handling, Data Validation
2. **Medium Priority**: Logging, Performance, Notification
3. **Low Priority**: Caching, Auditing, Configuration Management