

Centre for Development of Advanced Computing
Software Training and Development Centre (Thiruvananthapuram)
PG - DAC September 2022

Web based Java Programming

Date	Theory Session (09:00 AM to 1.00 PM)	Lab Session (02:00 PM to 06:00 PM)	Faculty
17-Dec-22	JDBC & Transaction Management <ul style="list-style-type: none"> • Introduction to JDBC API • JDBC Architecture • JDBC Drivers • JDBC Classes& Interfaces: Driver, Connection, Statement, PreparedStatement, ResultSet and their relationship to provider implementations • Stored procedures and functions Invocation • SQL Injection overview and prevention • Design Pattern: Data Access Object Pattern 	Lab assignments on JDBC up to PreparedStatement	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh

19-Dec-22	<p>J2EE Overview</p> <ul style="list-style-type: none"> • J2EE Container • Packaging Web applications • J2EE compliant web application • Deployment tools. • Web application life cycle • Deploying web applications. • Web Services Support 	<p>Lab assignments on JDBC on Stored Procedures onwards</p>	<p>Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh</p>
20-Dec-22	<ul style="list-style-type: none"> • Servlets: Dynamic Content Generation • Advantages of Servlets over CGI • Servlet Life cycle • Servlet API & Deployment • Servlet Annotations • The Servlet interface • The HttpServlet, HttpServletRequest, HttpServletResponse • Exception Handling • Servlet, DAO, POJO DB Layers 	<ul style="list-style-type: none"> • Installing a servlet container (Tomcat) • Adding Server to IDE • Develop a structured dynamic web application(e.g. Library Management System) using servlets, deploy it in Tomcat 	<p>Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh</p>

21-Dec-22	<ul style="list-style-type: none"> • Session • Session Management • Session Tracking with <ul style="list-style-type: none"> o Cookies o HttpSession • Request Dispatcher • Page Navigation • Complete Case study Servlet Based 	<ul style="list-style-type: none"> • Use HTTP Session in the Air Ticket Reservation System 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh
22-Dec-22	<ul style="list-style-type: none"> • JSP: Separating UI from Content generation code • MVC architecture • Design Pattern: MVC Pattern • Life cycle of a JSP page • Directives, Implicit and Explicit Objects, Scriptlets, Expressions, Expression Language • Scope 	<ul style="list-style-type: none"> • Separate UI code from the controller code in your Library Management System by incorporating JSP and Servlets. 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh

23-Dec-22	<ul style="list-style-type: none"> • JSP Error Page handling • JSTL 	<ul style="list-style-type: none"> • Complete the implementation of Air Ticket Reservation System. • Implement MVC based web application using Servlet, JSP 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh
24-Dec-22	<ul style="list-style-type: none"> • Hibernate Framework <ul style="list-style-type: none"> o Introduction to Hibernate Framework o Architecture • Hibernate in IDE <ul style="list-style-type: none"> o Creating web application using Hibernate API o Lifecycle of Hibernate Entities 	<ul style="list-style-type: none"> • Demonstrate Hibernate as standalone library in Java application 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh
26-Dec-22	<ul style="list-style-type: none"> • HB with annotation example • Hibernate Mappings and Relationships • Collection and Component Mapping • HQL, Named Queries, Criteria Queries 	<ul style="list-style-type: none"> • Develop a web application (Online Bookshop) using Hibernate Persistence 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh

27-Dec-22	<ul style="list-style-type: none"> • What is Spring Framework • Overview of Spring Architecture <ul style="list-style-type: none"> • Spring MVC architecture • Spring Modules Overview • Understanding Spring 4 annotations (Basic Introduction) • What is IoC (Inversion of Control) <ul style="list-style-type: none"> • IOC container • Dependency Injection <ul style="list-style-type: none"> • Spring Beans • Autowiring Beans • Bean Scopes 	<ul style="list-style-type: none"> • Design and deploy Library Management System using Spring Web 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh
28-Dec-22	<ul style="list-style-type: none"> • Spring MVC • Model, Model & View, HandlerMapping, ViewResolver • Design Pattern: Front Controller Pattern • Spring MVC Web application with JSP views (without Spring Boot) • Using Thymeleaf as alternate View Technology (only introduction) • Spring Validations • Spring i18n, Localization, Properties • File Upload example 	<ul style="list-style-type: none"> • Design and deploy Library Management System using Spring Web 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh

29-Dec-22	<ul style="list-style-type: none"> • Spring Boot essentials • Why Spring boot • Spring Boot Overview • Basic Introduction of MAVEN • Building Spring Web application with Boot • Spring Boot in detail (Use Spring Boot for all demo & assignments here onwards) 	<ul style="list-style-type: none"> • Create Hello World Spring Boot Web application • Check Libraries imported by Spring Boot 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh
30-Dec-22	<ul style="list-style-type: none"> • Running a web application using Spring Boot with CRUD (with Static Data not DB) 	<ul style="list-style-type: none"> • Create Spring Boot CRUD application with Thymeleaf as View technology 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh

31-Dec-22	<p>Spring AOP</p> <ul style="list-style-type: none"> • AOP Overview • Spring AOP • AOP Terminology and annotations: Advice, Join Points, Pointcuts, Aspects 	<ul style="list-style-type: none"> • Modify earlier Spring MVC application to Log all the requests using AOP 	<p>Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh</p>
2-Jan-23	<p>Building REST services with Spring</p> <ul style="list-style-type: none"> • Introduction to web services • SOAP Vs RESTful web services • RESTful web service introduction • Create RESTful web service in java using Spring Boot 	<ul style="list-style-type: none"> • Create REST API for Employee Management using Spring Boot 	<p>Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh</p>
3-Jan-23	<ul style="list-style-type: none"> • RESTful web service JSON example • RESTful web service CRUD example • Using POSTMAN client to invoke REST API's • REST service invocation using REST Template 	<ul style="list-style-type: none"> • Invoke the previous application from POSTMAN app • Invoke it from another Spring Boot Web application using REST Template 	<p>Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh</p>

4-Jan-23	<ul style="list-style-type: none"> • Testing in Spring • Unit Testing of Spring MVC Controllers • Unit Testing of Spring Service Layer • Integration Testing of Spring MVC Applications: REST API • Unit Testing Spring MVC Controllers with REST 	<ul style="list-style-type: none"> • Design & Test Spring Application 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh
5-Jan-23	<ul style="list-style-type: none"> • What is Spring Security • Spring Security with Spring Boot • Basic Authentication • Authentication with User credentials from Database and Authorization 	<ul style="list-style-type: none"> • Secure the Spring Web application created in earlier exercise 	Mr. Sailesh Pawar Ms.Suraja PK Ms. Hema S Mr.Jayaram Mr.Shivraj Singh
6-Jan-23	Buffer Day		

