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| **Offshore Training Records – On-the-Job/Class Room Trainings**  Vishal Bhardwaj, Assistant Manager - Mobility  March 2017 |
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# Training Record

As a part of our employee orientation, Mr. Vishal Bhardwaj underwent various intensive training programs.

Following is a detailed description of the trainings attended by Mr. Vishal Bhardwaj.

### Advanced Android Programming

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| **Course Title** | Android |
| **Course Duration** | 30 working days (November 2012– November 2012) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (Classroom Training) |

#### Course Content:

1. **Java Concepts**
   * OOPs concepts
   * Inheritance in detail
   * Exceptional Handling
   * Interfaces and abstraction
   * Multithreading
2. **Introduction to Mobile apps and Android**
   * Types of mobile apps
     + Native
     + Hybrid
     + Mobile web app
   * Importance of native app development
   * What is Android and history behind it
   * Various API levels
   * Setting up development environment
3. **Android Architecture**
   * Overview of Android Stack
     + Linux Kernel
     + Core Libraries
     + Android runtime
     + Android Framework
     + Dalvik Virtual Machine
   * Android Features
   * Introduction to OS Layers
4. **Android Components**
   * Activity
     + Activity lifecycle
     + Communicating between activities
     + Passing data across activities
   * Services
     + Service lifecycle
     + Intent service
     + Inter process communication
     + Working on main/UI thread
   * Broadcast Receivers
     + Android runtime
   * Content Providers
     + Access built-in content provider
     + Creating custom content provider
     + Working with content files
5. **Building basic and advance UI**
   * Views, layouts and other UI components
   * Custom views and adapters
   * Menus and notifications
   * Custom dialogs and tabs
   * Animated views
6. **Styles and Themes**
   * Creating and applying themes
   * Inherit and extend built-in styles
   * Create custom styles
7. **Process and Threads**
   * Perform multithreading via
     + Asynctask
     + Handler and Loopers
     + Java multithreading classes
   * Lifecycle of app components within a process
8. **Database Storage Options**
   * Shared preferences
   * SQLite
   * Android file system
   * Internal/External storage
9. **Location based services**
   * Obtaining current location
   * Working with google maps
   * Geocoder

### HTML5 and CSS3

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| --- | --- |
| **Course Title** | HTML5 and CSS3 |
| **Course Duration** | 1 month (April 2013 – April 2013) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (Classroom Training) |

#### Course Content

1. **HTML5 Overview**

* History of HMTL5
* The HMTL5 vision
* What is part of HMTL5?
* HMTL5 Roadmap

1. **Using HTML5 Today**

* Currently available features
* Using HMTL5 in browsers that do not support it
* Detecting native availability of HMTL5 features
* Working with Emulation

1. **Understanding HMTL5 Markup**

* HMTL5Page Structure
* HMTL5 DOCTYPE
* HMTL5Markup Structural elements
* Semantic Elements

1. **HTML5 Forms**

* HMTL5Form Elements
* Building and using HMTL5Forms

1. **Overview of the HTML5 APIs**

* Overview of the HTML5 APIs
* Common building blocks
* Programming HTML5

1. **HTML5 Storage**

* Overview Local Storage
* Session Storage
* Web SQL Database
* IndexedDB
* Using the Storage APIs
* HTML5 Offline Application App Cache

1. **Introduction to CSS3**

* Content
* Fonts
* Text Shadow
* Selectors
* Styling Form Inputs

### Javascript

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| --- | --- |
| **Course Title** | Javascript |
| **Course Duration** | 1 Month (October 2013 – October 2013) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (Classroom Training) |

#### Course Content:

1. **JavaScript Core Objects:**
   * What Are Core Objects?
   * Array Objects
     + Declaring and Populating Arrays
     + Array Object Properties
     + Associative Arrays
     + Nested Arrays
   * Array Methods
   * The Date Object
     + Using the Date Object Methods
     + Manipulating the Date and Time
     + Customizing the Date Object with the prototype Property
   * The Math Object
     + Rounding Up and Rounding Down
     + Generating Random Numbers
   * Wrapper Objects (String, Number, Function, Boolean)
     + The String Object
     + The Number Object
     + The Boolean Object
     + The Function Object
   * Regular Expression (RegEx)
2. **Handling Events**
   * Introduction to Event Handlers
   * The Inline Model for Handling Events
     + HTML and the Event Handler
     + Setting Up an Event Handler
     + Return Values
     + JavaScript Object Methods and Events
   * The event Object
     + Capturing and Bubbling (Trickle Down and Bubble Up)
     + Event Object Properties
     + Using Event Object Properties
   * Event Propagation
     + Event Bubbling
     + Event Capturing
3. **An Introduction to Ajax (with JSON)**
   * Why Ajax?
   * Why Is Ajax Covered Last?
   * The Steps for Creating Ajax Communication
     + Step 1: Create the XMLHttpRequest Object
     + Step 2: Initializing the Object
     + Sending the Request to the Server
     + Step 3: Monitoring the State of the Server Response
     + Handling the Response with a Callback Function
   * Putting It All Together
     + Using Ajax to Retrieve Text from a File
     + Using Ajax to Retrieve XML from a File
     + Ajax and Forms
   * Ajax and JSON
     + JSON Data Structures
     + Steps to Use JSON
     + Putting It All Together with JSON

### jQuery

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| **Course Title** | jQuery |
| **Course Duration** | 15 working days (May 2014 – May 2014) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (Classroom Training) |

#### Course Content:

1. **jQuery Fundamentals:**
   * Introduction - Why use jQuery?
   * Referencing a jQuery Script
   * Using Content Delivery Networks
   * Using the jQuery Ready Function
   * Getting to Know the jQuery Documentation
2. **Using jQuerySelectors**:
   * What are Selectors?
   * Selecting Nodes by Tag Name
   * Selecting Nodes by ID
   * Selecting Nodes by Class Name
   * Selecting Nodes by Attribute Value
   * Selecting Input Nodes
   * Additional Selector Features
3. **Interacting with the DOM**:
   * Introduction
   * Iterating Through Nodes
   * Modifying Properties and Attributes
   * Adding and Removing Nodes
   * Modifying Styles
   * Modifying Classes
4. **Handling Events**:
   * Introduction
   * jQuery Event Model Benefits
   * Handling Events
   * Click Event
   * Change Event
   * Mouse Events
   * Binding to Events
   * live() and delegate()
   * Handling Hover Events
   * Summary

### Angular JS

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| **Course Title** | Angular JS |
| **Course Duration** | 2 Months (November 2014 – December 2014) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (Classroom Training) |

#### Course Content:

1. **Introduction to AngularJS**

* Concepts
* Introduction to Angular
* Angular Architecture
* What does AngularJS do for me?

1. **Angular JS Architecture**

* Understanding Views
* Use of $scope
  + Methods of Scope
  + Understanding $rootScope
  + Communication between Controllers

1. **Anatomy of an AngularJS Application**

* Our first AngularJS application
* Invoking Angular
  + Loading the Script
  + Defining Angular’s Boundaries

1. **Understanding MVC (Model View Controller)**
2. **Templates and Data Binding**

* Displaying Text
* Expressions as Code Snippets
* Understanding Data Binding

1. **Data binding**

* Two Way Data Binding

1. **More about MVC**

* Controllers
  + Understating the use of Controllers
  + Managing Controllers Scope
  + Writing a basic controller
  + Separating UI Responsibilities with Controllers
* Models
  + Creating Model
  + Publishing Model With Data
  + Observing Model Changes
  + Type of Models
  + Implicit Model
  + Explicit Model
* Views
  + Writing valid HTML with Angular
  + View and Controller Association
  + View and Model Association

1. **Introduction to Services**

* Understanding Services
* Creating Your First Custom Service
* Introduction to Built-In AngularJS Services
  + Using the $http and $q Services Together
  + Using the $resource Service
  + Using the $anchorScroll Service
  + Using the $cacheFactory Service
  + Using the $compile Service
  + Using the $parse Service
  + Using the $locale Service
  + Using the $timeout Service
  + Using the $exceptionHandler ServiceUsing the $filter Service

1. **Communicating With Server**

* Introduction
* Making AJAX calls to an MVC Action
* Posting Data to an MVC Action
* Handling Server Responses
* Using Angular, MVC and WebApi Together
* Retrieving Data with Resources
* Posting Data with Resources

1. **Routing in Angular**

* Angular UI Routing
* Ng-View Directive
* Understanding SPA
  + Pros
  + Cons
* Configuring Routes in Application

1. **Directives**

* Directives and HTML Validation
* API Overview
* Naming Your Directive
* The Directive Definition Object
* Transclusion
* Compile and Link Functions
* Scopes
* Manipulating DOM Elements

### Node JS

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| --- | --- |
| **Course Title** | Node JS |
| **Course Duration** | 15 working days (June 2015 – June 2015) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (Classroom Training) |

#### Course Content:

1. **Introduction to Node.js**
   * History of Node.js
   * Non-Blocking I/O
   * Node.js Benefits
   * Node.js Place in the Tech Stack
   * Evolution of Node.js Frameworks
   * Installing Node.js
   * Node.js Building Blocks
2. **Modularizing code**
   * Core built-in modules
   * Creating Node Modules
   * Modularizing JavaScirpt code
   * Using require() to modularize application code
   * Using npm for third-party modules
3. **Events and Streams**
   * Understanding Events
   * EventEmitter class
   * File System Access
   * Reading and writing to files
   * Understanding Streams
   * Reading and writing streams
   * Using pipe()
4. **Accessing Local Resources**
   * Process Object
   * Manipulating File System
   * Understanding Buffers
5. **Node.js and the web**
   * Building a web server
   * Handling web requests
   * Returning HTML
6. **Socket IO**
   * Setting up socket.io
   * Understanding the need for web sockets
   * Real-time interaction using socket.io
7. **Using Some Node Tools and Middleware**
   * Serving HTML Pages.
   * Serving Static Contents
   * Bundling Static Contents
   * Using Browserify
8. **Creating Views**
   * **Introduction to View Engines**
     + Jade
     + EJS
     + Vash
     + HBS
9. **Building web applications using Express.js**
   * Installing Express.js
   * Routing
   * Parameters and queries in routing
   * Building views using Jade view engine
   * Using blocks for layout
   * Displaying data
   * Working with forms
   * Installing Express Generator
10. **Mongo DB**
    * What is a No SQL database?
    * Installation of MongoDB
    * Comparison between MongoDB and traditional RDBMS
    * Introduction to MongoDB
      + What is MongoDB and Why?
      + Core concepts
      + Environments
      + Documentation
      + JSON
      + Installation
    * Create and Read data using the MongoDB Shell
      + Introduction to the MongoDB API
    * Creating an Express application
      + Connecting App to Mongo DB Database
      + MongoDB Native Driver (mongodb)
      + Monk
    * Creating a Restful API for Client Side
11. **Node JS Securities**
    * Authenticating Node JS App with Passport.js
    * Using JWT for API Authentication

### Web Services

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| **Course Title** | Web Services |
| **Course Duration** | 1 month (November 2015 – November 2015) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (Classroom Training) |

#### Course Content:

1. **Architecture:**

* Overview of Service Oriented Architecture.

1. **Web Services Architecture**:
   * + Web Services Architecture
     + What is –
       - SOAP
       - WSDL
       - UDDI
     + Understanding different soap toolkits
2. **Reading WSDL**:
   * + Namespaces
     + End Points
     + Operations
     + Data Types
3. **Creating example using JaxWS**:
   * + Creating simple Service provider using JAX-WS
     + Creating business logic
     + Creating web service
     + Reading wsdl
4. **Stub Creations**:
   * + Command - wsimport to generate stub objects
     + Blocking client for stubs
     + Non-Blocking client for stubs
     + Observing SOAP interactions using some tool like tcpmon etc
5. **Exception Handling**:
   * + Understanding SOAP Faults
     + Throwing business exception
6. **XML Serialization**:
   * + JaxB Utilities
       - Convert class to schema
       - Convert Schema to java file
     + Code example
       - Convert objects to XML
       - Reading objects from XML
7. **Sending and Receiving Custom Objects using JAX-WS**:
   * + Array
     + List
     + POJOs
     + Working across platforms and languages
8. **Calling web services with SOAPUI**:
   * + Introduction to security Concerns
     + Restricting Access of web service
9. **Introduction to security Concerns**:
   * + Restricting Access of web service
     + Using basic authentication
     + Understanding interceptors
10. **Understanding REST**:
    * + Core Concepts of REST
      + Simple implementation
11. **Working with REST Web Services**:
    * + Development Approaches
        - Top-down
        - Bottom-up
12. **Case Study**
13. **Do’s and Don’ts in Web services**

### Agile Scrum

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| --- | --- |
| **Course Title** | Agile Scrum |
| **Course Duration** | 15 working days (March 2016 – March 2016) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (On-the-Job Training) |

#### Course Content:

1. **Introductions & Expectations**
2. **Introduction to Agile**
   * Agile at a glance
   * Why organizations adopt Agile
   * Agile vs Waterfall
   * History of Agile
   * The Agile Work Environment
   * Agile Metrics
3. **Scrum Fundamentals and Principles**
   * Insights on Scrum
   * Scrum Framework – Roles/Responsibilities, Artifacts, Ceremonies
   * Typical day for a Scrum Master
   * Role of Quality Assurance in Scrum
   * Risk Factoring in Agile-Scrum
   * Impact of Scrum on Total Cost of Ownership
4. **The Agile Scrum Mindset**
   * Self-Organizing Teams
   * Agile Values, Principles and Mindsets
   * The Agile Discipline
   * Power of Feedback Loops
   * Applying Scrum for the enterprise
5. **Scrum Methodology**
   * Product Vision and Roadmap
   * User Stories & Requirements Evolution
   * Example of “Visual” user stories
   * Acceptance Tests or Conditions of Satisfaction (CoS)
   * Definition of Done (DoD), progressive elaboration of DoD
   * Relationship between CoS and DoD
   * Impact of “Work Not Done” in terms of cost, schedule and quality
   * Estimation using Planning Poker; Affinity Estimating
   * hands on simulation
     + Product & Release Backlog
     + Understanding technical debt, examples of technical debt and minimizing technical debt
     + Sprint Planning using Taskboards and Software
     + Sprint & Sprint Backlog
     + Impediments Backlog; Differentiating between issues and constraints
     + System Testing in Agile Scrum
     + Embedding documentation in Agile
     + Sprint Review
     + Sprint Retrospective
     + Burndown and BurnUp Chart
6. **Approach for implementing Agile-Scrum methodology in the organization**
   * Implementation Roadmap
   * ADAPT cycle
   * Patterns for Adopting Scrum
   * Scaling Scrum for large engagement teams
   * Scrum in multi-location engagements
   * Caselets – Real life scenarios and how you would handle them as a Scrum Master
   * Understanding Team Dynamics and enabling a collaborative work culture
   * Evolving the team – a phased approach for enhancing the maturity levels of the team
7. **Closure**
   * Q&A

### Solution Architecture

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| --- | --- |
| **Course Title** | Solution Architecture |
| **Course Duration** | 15 working days (August 2016 – August 2016) |
| **Location** | Synechron Technologies Pvt. Ltd., Pune (On-the-Job Training) |

#### Course Content:

1. **Architecture and Object Oriented approaches:**

* **Intro to Architecture, Architectural Components:**
  + - * + Intro to Application Frameworks
        + Business Use Cases and Software Use Cases
      * **Types of Architecture**:
        + Role played by Application Frameworks ( Java EE, Dot Net Foundations, Mobile Application Frameworks, RDBMS and Data Engineering)
        + Architectural establishment of Project Requirement as per standard practices
        + Understanding Business Process level Stakeholder concerns. Grasp Patterns for smoother Analysis
        + Use Cases and Business Modeling
        + Case Study

1. **Introduction to Architectural practices**:

* **Intro to Architecture, Architectural Components:**
  + - * + Approaching a project and attaining first cut maturity in class
        + OOAD
        + UML
        + Platform Independent Modeling
        + Business Use Cases and Software Use Cases
    - **Optimization of Class Design taking Architectural principles into account**:
      * Identifying Components of Data environment
      * 4+1 Architectural Views and Stakeholder concerns
    - **Architectural Patterns**:
      * MVC
      * Tier Pattern
      * Layer Pattern
    - **Role and need for Creational Patterns (GOF)**:
      * Abstract factory Pattern
      * Factory method Pattern
      * Prototype Pattern
      * Singleton Pattern

1. **Solution Architecture Deep Dive**:

* **Getting more into Solution Architecture and NFRs**
* **Distinguishing Design and Architecture**
* **Metrics and Architecture**
* **Fault Tolerance.**
* **Application architecture Issues:**
  + - * + Need to manage memory and how good architecture may lead to better performance of software
        + Hosting Architectures
* **Class Relationships and their impact on sound Architecture.**
* **Composition and its importance.**
* **Design Principles:**
  + - * + DRY (Don't repeat yourself)
        + Open Closed Principles
        + Encapsulate What Changes
        + Single Responsibility Principle (SRP)
        + Dependency Injection or Inversion principle
      * **Role and need for Structural Patterns (GOF)**:
        + Adapter Design Pattern
        + Bridge Design Patter
        + Composite Pattern
        + Decorator Pattern
        + Facade Pattern
        + Flyweight Pattern
        + Proxy Pattern
      * **UI Architecture and MVC Variants**
      * **Case Study**

1. **Consolidating the Mature Understanding of Solution Architecture**:

* **Architectural Maturity**
  + - * + Dynamic and Deployment issues
        + Activity Modeling
* **Architectural process**
  + - * + The drivers : goals, principles
        + Moving forces:

Business Concepts

Business Process

Domain concepts

Logical process

Business Layer Components

* **Data mapping through Object relational mapping**
* **Enterprise, Integration and SOA Patterns**
  + - * **Role and need for Behavioral Patterns (GOF)**:
        + Chain of Responsibility Pattern
        + Interpreter Pattern
        + Iterator Pattern
        + Mediator Pattern
        + Observer Pattern
        + Strategy Pattern
        + Template Pattern
        + Visitor Pattern
      * **Data mapping**
* **More Design Principles:**
  + - * + Favor Composition over Inheritance
        + Interface Segregation principle (ISP)
        + Programming for Interface not implementation
        + Delegation principle