

INDEX

I&D V16(Digital Analytics) LoT Course Structure.....	2
Introduction to Python.....	3
SQL & DB Fundamentals.....	5
JavaScript.....	6
ETL Basics	8
Data Flow Testing.....	9
Data warehouse Concepts	9
Cloud Foundation	11
Introduction of Software Engineering	12
Web Analytics foundations & Advanced - Google analytics & Adobe analytics - Implementation & Reporting	13
Adobe Target (Personalization) & Adobe Audience Manager DMP (Data management platforms)	14
Introduction to CDP / CDH (Customer Data Platform / Customer Data Hub)	15
Tealium IQ	16
Tealium Event & Audience stream	17
Campaign Management - Adobe Campaign.....	19
CDP - Adobe experience platform	20
Treasure Data	21
Web SDK.....	22

I&D V16(DIGITAL ANALYTICS) LoT COURSE STRUCTURE

I&D V16(Digital Analytics) LoT provides exposure to a band of data warehousing technologies. It focuses on application development for data warehouses. The following table lists the course structure for I&D LoT.

Sr. No.	Course	Duration (In Days)	Remarks
1	Discover(Induction)	-	Online
2	Soft Skills Foundation – Part 1	1	Soft Skills Part 1
3	Introduction to Python	4	
4	SQL & DB Fundamentals	5	Project Kick Off
5	Cloud Foundations	1	
6	Java Script	4	
7	Module 1 Test	1	Coding and MCQ
8	Data Warehouse Concepts	1	Sprint 1 Implementation,MCQ
9	Introduction to Software Engineering	0.5	
10	ETL Basics	0.25	
11	Data flow Testing	0.25	
12	Soft Skills Foundation – Part 2	1	Soft Skills Part 2
13	Web Analytics foundations & Advanced - Google analytics & Adobe analytics - Implementation &	10	Sprint 1 Implementation,MCQ
14	Sprint 1 Evaluation	2	Sprint 1 Evaluation
15	Soft Skills Foundation – Part 3	1	Soft Skills Part 3
16	Adobe Target (Personalization) & Adobe Audience Manager DMP (Data management platforms)	6.5	Sprint 2 Implementation, MCQ
17	Introduction to CDP / CDH (Customer Data Platform / Caustomer Data Hub)	0.5	
18	Tealium IQ	2	
19	Tealium Event & Audience stream	3	
20	Soft Skills Foundation – Part 4 (Agile & DevOps)	1	Soft Skills Part 4 (Evaluation)
21	Campaign Management - Adobe Campaign	1	Sprint 2 Implementation, MCQ
22	CDP - Adobe experience platform	5	
23	Treasure Data	2	
24	API development - Custom Connectors	1.5	
25	WEB SDK	1.5	
26	Sprint 2 Evaluation	2	Sprint 2 Evaluation
27	L1 Preparation	1	
28	L1 Test	1	
Total Training Duration		60	

I&D Curriculum

Introduction to Python

Program Duration: 4 days.

Contents:

Install and Set Up

- Python Installation

- Installing IntelliJ IDEA

- Configuring IntelliJ IDEA

- And other related packages as required

Data Types and Operations

- Numbers

- Strings

- List

- Tuple

- Dictionary

- Other Core Types

- Changing Values in a List with Indexes

- List Concatenation and List Replication

- Using for Loops with Lists

- Removing Values from Lists with del Statements

Other basic items to be know

- String formatting

- Basic string operations

- Conditions, loops and other advanced function

- Modules and Packages

- Debugging the code and error handling

Functions in Python

- Function definition and call

- Function Scope

- Return Values and return Statements

- Local and Global Scope

- Arguments

- Function Objects

- Anonymous Functions

- Exception Handling

Statements and Syntax in Python

- Assignments, Expressions and prints

- If tests and Syntax Rules

- While and For Loops

- Iterations and Comprehensions
- Break/Continue Statements
- Stepping in to the world of python
 - Introduction, First Python program
 - Printing text and printing the text of the calculation
 - Strings and Escape characters
 - Variables and Types
 - Numeric data types in python
 - Numeric operator, Expression and operator precedence
- Libraries
 - Importing a library using PIP, CONDO etc
 - Math
 - Numpy
- Classes in Python
 - Classes and instances
 - Classes method calls
- Slicing
 - Understanding the slicing
 - Slicing with negative numbers
 - Using a step in a slice
 - Slicing Backwards
 - Challenge solution and slicing Idioms
- Dictionaries and Sets
 - What is dictionary and iteration over a dictionary
 - Adding, removing and changing value in dictionary
 - Dictionary menu challenge solution
 - Using several dictionary together
 - Python sets
 - Some implication on sets
- Input and output (I/O) in python
 - Reading and writing text files
 - Appending to Files and Challenge
 - Writing Binary Files Manually
 - Shelve
 - Manipulating Data with Shelve
 - Updating with Shelve
 - Shelve Challenge

SQL & DB Fundamentals

Program Duration: 5 days.

Contents:

Introduction

- What is SQL and history of SQL
- What can SQL do?
- Concepts of Databases and RDBMS
- Install a Database Engine
- SQL Syntax, Data Types and Operators.

Database Concepts

- Purpose of Database
- Advantages of Using Database
- Various Levels of Database Implementation
- The Concept of Data Independence
- Basic Terminologies Related to Database and SQL

SQL Key Concepts

- Understanding Where and SQL Operators
- Order By and Insert Into
- NULL Value, Update and delete statement
- Min and Max, COUNT(), AVG() and SUM() Functions
- SQL Like operator and wildcard character
- Union Operator and Group By statement

SQL Joins and Subqueries

- Inner/Equi Join
- Outer Join
- Self-Join
- Subquery
- SUBQUERIES Using Comparison Operators Co-Related Subquery
- Exists / Not Exists Operator
- Connect By and Start with clauses
- Tips and Tricks

SQL

- Database Concepts
- Create, Drop and Back up statement
- Create, Drop and alter table
- Constraint, Not null and unique constraint
- Primary and foreign key constraint
- Check and default constraint
- Index, Auto Increment Field and Dates
- Injection and hosting topics

Other Essential SQL topics

Key elements of a database

- Relational Keys
- Select Queries
- Joins
- Data Modelling
- Fact and Dimension Table Types
- Star Schema
- Snowflake Schema
- Data Definition Language (DDL) basics
- Data Manipulation Language (DML) basic

SQL Reference

- Keywords reference
- MySQL functions
- SQL Server functions
- MS Access functions

JavaScript

Program Duration: 4 days.

Contents:

JavaScript Fundamentals

- Introduction to JavaScript
- Code Editor
- Developer Console
- Type Conversions
- Loops: while and for
- Code structure and basic operators, maths
- The “Switch” statement
- Variables, Datatypes, Comparisons and functions
- Logical operator
- Interaction: alert, prompt, confirm

JavaScript Specials

Code Quality

- Debugging in the browser
- Comments
- Automating test with tool
- Coding style
- Ninja code
- Polyfills and transpilers

JavaScript Objects

- Object method, “this”
- Symbol type
- Object references and copying
- Constructor, operator “new”
- Primitive conversion
- Garbage collection
- JavaScript Data types
 - Methods of primitives
 - Array methods
 - Number, string and array
 - Iterables, Map and set
 - Date and time
 - JSON methods, toJSON
 - Object.keys, values, entries
- Other KEY topics
 - Object properties configuration
 - Prototypes and Inheritance
 - Classes
 - Error handling
 - Generators and advanced iteration
- Browser DOM
 - DOM tree
 - Walking the DOM
 - Styles and classes
 - Element size and scrolling
 - Window sizes and scrolling
 - Searching: getElement*, querySelector*
 - Attributes and properties
 - Node properties: type, tag and contents
- JavaScript Events
 - Introduction to browser events
 - Event delegation
 - Dispatching custom events
 - Bubbling and capturing
 - Browser default actions
 - Drag'n'Drop with mouse events
 - Keyboard: key down and keyup
 - Scrolling
 - Moving the mouse: mouseover/out, mouseenter/leave
- Forms and Controls
 - Form properties and methods
 - Events: change, input, cut, copy, paste

Forms: event and method submit
Focusing: focus/blur
Other Essential topics
Popups and window methods
URL objects
Cookies, document.cookie
LocalStorage, sessionStorage
IndexedDB

ETL Basics

Program Duration: 0.25 day

Contents:

Basic Concepts

- Data warehouse
- Data warehousing strategies
- Data warehouse architecture
- ETL Meaning
- Need for ETL
- ETL Process
- Operational Considerations

ETL Process

- Data extraction
- Data transformation
- Data Loading

Operational Considerations

- Exceptional Handling
- Alerts and Notification
- Process restart-ability
- Job Scheduling and Monitoring

ETL Tools

- Leading ETL tool vendors
- ETL tool strengths / weaknesses
- Choosing the correct ETL tool

Data Flow Testing

Program Duration: 0.25 day.

Contents:

Introduction

- What is data flow testing?

- Understanding the data flow concepts

Data Flow Anomalies

Data Flow Machine

- Von Neumann Machine Architecture

- Multi-instruction, Multi-data machines (MIMD) Architecture

Data Flow Graph

Data Object state and usage

- Defined

- Killed or Undefined (k)

- Usage (u)

- Strategies of data flow testing

Static data flow testing

Dynamic data flow testing

Test Case Creation

Data warehouse Concepts

Program Duration: 1 day.

Contents:

Business Intelligence

- Business Intelligence

- Need for Business Intelligence

- Terms used in BI

- Components of BI

General concept of Data Warehouse

- Data Warehouse

- History of Data Warehousing

- Need for Data Warehouse

- Data Warehouse Architecture

- Data Mining Works with DWH

- Features of Data warehouse

- Data Mart

- Application Areas

Dimensional modelling

- Dimension modelling
- Fact and Dimension tables
- Database schema
- Schema Design for Modelling
- Star
- Snowflake
- Fact Constellation schema

ETL and Metadata

- ETL process
- Metadata used in ETL
- Metadata in Data Warehousing
- Simple Data warehouse model

Online Analytical Processing (OLAP)

- Online Analytical Processing (OLAP)
- Nature of OLAP analysis
- Types of OLAP
- OLAP Tools
- OLTP and OLAP
- OLAP Functional requirements
- OLAP Fast and Selective
- Operational versus Informational System

Data Mining

- Data mining
- The Knowledge Discovery process
- Need of Data Mining
- Use of Data mining
- Data mining and Business Intelligence
- Types of data used in Data mining
- Data Mining applications
- Data Mining products
- Data Mining market

Best Practices for Building Data Warehouse

- Recipe for a Successful data warehouse
- Data warehouse pitfalls
- Popular BI DW tools and suits
- Trends in BIDW

Cloud Foundation

Program Duration: 1 day

Contents:

Introduction

- What is cloud computing
- Overview of cloud concepts
- Benefits of cloud computing

Types of cloud computing

- Public cloud
- Private Cloud
- Hybrid Cloud
- Multi cloud and hybrid multi cloud

Cloud Computing Services

- Infrastructure as a service (IaaS)
- Platform as a service (PaaS)
- Software as a service (SaaS)
- Serverless

Cloud Security

- Shared responsibility for security
- Data Encryption
- User identity and access management
- Collaboration management
- Security and compliance monitoring

Uses of cloud computing

- Create cloud-native applications
- Test and build applications
- Store, back up and recover data
- Analyse data
- Stream audio and video
- Embed intelligence
- Deliver software on demand

Introduction of Software Engineering

Program Duration: 0.5 day

Contents:

Software Engineering

- Software Requirement
- Software Development Life Cycle
- Software Testing and Debugging
- Software Project Management

Software Development Model & Architecture

- Waterfall Model
- Spiral and Incremental Process model
- Agile Development model
- Agile software development
- Database application system life cycle

Software Risk and Management

- System Configuration Management
- Capability Maturity Model
- Integrating risk management
- Reliability growth model
- Software maintenance

Software Requirement

- Requirement Engineering Process
- Classification of software requirement
- How to write a good SRS for your Project
- Quality Characteristics of a good SRS
- Requirements Elicitation
- Challenges in eliciting requirements

Software Testing and Debugging

- Seven Principles of software testing
- Testing Guidelines
- Black box testing
- White box Testing
- Debugging
- Selenium: An Automation tool
- Integration Testing

Web Analytics foundations & Advanced - Google analytics & Adobe analytics - Implementation & Reporting

Program Duration: 10 days

Contents:

Introduction to Web analytics:

- Why Web analytics?
- How web analytics works and how to set up
- What is the scope of web analytics?
- What is implementation, reporting and configuration?

Tag Management Solution

- What is TMS?
- Why do we need TMS?
- Key Benefits of TMS
- What is rule, Data element, tags and extension.
- Different TMS tool on the market and advantage of those
- How to utilise the TMS on the web analytics
- Role of TMS in digital analytics

Understanding the terminology

- SDR and TDR
- Tags
- Custom Variables
- Tag Audit
- Workspace

Process of web analytics

- Setting objection of the analytics
- Identify KPI's
- Developing a strategy
- Implementing, Collecting and configuring
- Processing the data
- Audit and Debugging the tags

Implementation and Reporting

- How do we implement web analytics using TMS
- Different types of implementation
- Web and Mobile Implementation
- Purpose of reporting
- How do we set up report in GA and AA.

Big Giants on web analytics – GA and AA

- Major difference on GA and AA
- Which tool should client prefer?
- Advantage of GA and AA over another tool
- User Interface of GA and AA

Major web analytics reports consist

- Audience Data
- User Behaviour
- Conversion Calculation

- Real time reporting
- User Flow Visualization
- Essential features to know
 - Processing rule and Marketing channel set up
 - Third Party Integration
 - Segmentation and Calculated metrics
 - Data Classification
 - Data Feed and warehouse
 - Administration role

Adobe Target (Personalization) & Adobe Audience Manager DMP (Data management platforms)

Program Duration: 6.5 days

Contents:

Adobe Target

Introduction

- Why personalization and purpose of personalization
- Personalization role in market
- Adobe target – A personalization expert

Implementation

- Integrate adobe target
- Implementing with and without TMS
- Target request and parameter
- Understanding at.js 1.X and 2.X
- Implementing target in SPA
- Designing target implementation

Integration

- Integrate target with analytics
- Integrate with audience manager
- Integrate target with AEM
- Use AEM experience fragment in adobe target
- Use analytics as a reporting source for target

Types of target activity

- Understanding the activity
- Use the AI and ML algorithm on the activity
- Types of activity

Adobe target – Audiences

- Use of audience
- Profile script
- Use profile script to build audience
- On boarding audience to adobe target

Experiences

- Use the visual experience composer
- Use the form-based experience for the composer

Recommendation Activity

- Create and Use recommendation activity
- Use offers
- Understanding and Create feed
- Understanding and creating criteria
- Create custom design
- Create collection and Exclusion
- Validation and Troubleshoot
 - Validate the activity
 - Using bookmark to validate and QA preview URL
 - Trace in target
 - Troubleshooting activity error

Adobe Audience Manager

Introduction

- Why do we need DMP platform?
- Benefits of DMP?
- Sample Use cases to understand the DMP
- Understanding basic terms and concepts
- Identity in audience manager

News and Trends

- Future of DMP and Environment change
- Consideration on DMP
- Building experience with customer profiles

Web Implementation

- Understanding DIL
- SSF – Server-Side Forwarding
- Using TMS to implement audience manager
- Identity partner ID or Subdomain

Integrating offline data

- Formatting and Ingesting file-based data
- Steps to ingest file-based data

Audience Market Place

- Buying Data
- Selling Data

Build and Manage Audience

- Data Explorer
- Traits and Segments
- Profile Merge

Other Integration and Reporting Concepts

Introduction to CDP / CDH (Customer Data Platform / Customer Data Hub)

Program Duration: 0.5 day

Contents:

Customer Data Platform

- Why do we need CDP?

- Benefits of CDP
- Purpose of CDP
- Why CDP is important
- Role of CDP in market
- Essential topic to understand
 - What kind of Customer data does CDP work with?
 - Difference of CDP vs DMP
 - CDP types and Usage
- Sample Use cases to understand
 - Online to offline connection
 - Customer segmentation and Personalization
 - Predictive customer scoring
 - Product Recommendation
 - Reviews optimization
- Implement CDP
 - Integration complexity
 - CDP output requirements
 - Current state of your data
 - Unique business rules
 - Identity merging needs
 - profiles across different platforms, and merging these profiles takes time
 - Level of detail in data attributes

Data Driven CX (Customer Data Hub)

- What is CDH
- Purpose and Benefits of CDH
- Manage and Collect data from Customer points
- Collecting Data
 - Data Collection
 - Data Standardisation
 - Transformation and Enrichment
 - Integration Concept
 - Data Activation
- Enriching Data
- Visitor and Customer Data
- Fechting and Storing data
- Visualizing the data

Tealium IQ

Program Duration: 2 days

Contents:

- Introduction
 - Overview of Tealium IQ
 - Understanding the tool functionality
 - Tealium and Customer Data
- Tools and Tips
 - Tools and related features

Implementation

- Implementing using Tealium
- Architecture of Tealium IQ

Tags

- Tealium IQ tags
- Explore tags features

Load rules

- Load Rules
- Why and when rules
- Purpose of rules

Data Mapping

- Data Mapping Overview
- Mapping in different reporting tools

Extension

- Understanding extension
- Utilizing extension features
- How extension works

Tealium Event & Audience stream

Program Duration: 3 days

Contents:

Audience Stream

Introduction

- What is audience stream
- Visitor attribute
- Visitor profile
- Audience and Connector

Visitor Stitching

- Identity Resolution
- Identifying Anonymous customer
- Understanding visitor stitching
- Identified visitor

Visitor ID Attribute

- How it works
- System requirement
- Best practice
- Setting a Value for a VisitorID Attribute
- Visitor ID Attribute Enrichment

Other Essential Topics

- Creating a Visitor ID

- Visitor Stitching scenario

Audience Discovery

- How it works

- Navigating the user interface

- Start Discovering

- Using Favourite number

- Viewing Your Audience Data from Different Perspectives

Building an Audience

- Create an Audience

- Take Action on an Audience

- Visitor Retention Time

- Visitor Retention Time Example

Audience Stream Dashboard

- Trend Graphs

- Time Range

- Badge Activity

- Dashboard Sheets

Visitor Look Up Tool

- Overview of look up

- Searching for a Visitor Record

- Viewing a Visitor Record

- Deleting a Visitor

Event Stream

Introduction

- How It Works

- Data Sources

- Event Specifications and Attributes

- Live Events

- Event Feeds

- Event Connectors

Connectors

- How it works

- Add a connector

- Managing Connector

- Deprecated Connectors and Actions

- Screen Navigation

Delayed Action

- Requirements

- What is a Delayed Action?
- Order of Operations for Delayed Actions
- Action Frequency Capping & Prioritization
 - How it Works
 - Adding a New Cooldown Group
 - Using the Default Cooldown Group
 - Applying a Cooldown Group to a Connector Action
- Webhook Connector
 - Webhook Connector Setup Guide
 - Webhook - Using the Send Customized Data via HTTP Request Action (Advanced)
 - Using Custom Request Template Variables
 - Trimou Templating Engine Guide

Campaign Management - Adobe Campaign

Program Duration: 1 days

Contents:

Introduction

- Started with adobe campaign
- Launch adobe campaign
- Understanding the functionality

Adobe Campaign Workspace

- Get started with campaign UI
- Use campaign explorer
- Browser and Customise list

Process

- Deployment Option
- Implementation Methodology

Workflows

- Campaign creation recommended workflow
- Marketing campaign cycle
- Marketing data management
- Targeting Segmentation and Analytics
- Cross Channel Campaign Execution

CDP - Adobe experience platform

Program Duration: 5 days

Contents:

Introduction

- Introduction to platform
- Experiencing the UI
- Getting started with Experience Platform
- Accessibility in Experience Platform

Data Modelling

- Understanding the Data model
- XDM Classes and Schemas
- Data Sets and related features

Data Collection

- Data Collection Overview
- Experience Platform Debugger
- Tags (Adobe Launch)
- Experience platform mobile and web SDK

Data Ingestion and Management

- Catalog Service
- Dashboard and Data access
- Data Ingestion
- Data Prep
- Data Flows
- Data Sets and Observability

Customer Data

- Data Collection
- Identity service
- Real time customer profile

Segmentation Services

Privacy

- Data Governance
- Privacy Service

Data Science and Queries

- Data science workspace
- Intelligent Services
- Query Service

Activation

- Offer
- Understanding the offer and activation
- Offer Management
- Destinations

Other Essential Topics

- CJA – Customer Journey Analytics

- CDA – Cross Device Analytics

- Journey Optimiser

- Journey Orchestration

Treasure Data

Program Duration: 2 days

Contents:

Introduction

- Overview of treasure data

- How it differs from other CDP

- Why do we need Treasure Data?

Collect & Cleanse Customer Data

- Why data quality matters

- Types of data to integrate

- Customer Data cleaning

- Enrich customer data

Customer Data Unification

- CDU

- Identity resolution on CDU

- CDU is starting point

Analyse and Cover Customer Insights

- Attribution Model

- Identity Omnichannel Opportunities

- Segmentation and Targeting

- Create a look alike audience

- Big Data makes a difference

Activation and Personalization

- Improvising customer experience

- Engage customer in real times

- Cross sell and upsell

- Launch new products and service

Web SDK

Program Duration: 1.5 days

Contents:

Introduction

- What is web SDK
- Understanding integration and API's
- How web SDK performs in market

Integration

- Overview
- Generating access token
- Frontend integration
- React and any programming integration

Events and Browser

- Events
- Supported browser
- Advanced customization and localization

Debugging Tools

- Configuring Charles Web Debugger
- Configuring Fiddler HTTP Analyzer
- Provider status