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| Live Deftsoft Informatics (P) LTD |
| Software Design Document (SDD) |
| API Manager Bot |
| Live DeftSoft Dotnet Team |
| **Revision 1.0** |
| **September 15, 2016** |

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## 1. Introduction

### 1.1 Scope

This Project involves Web Application, iPhone Application and Android Application That focuses on Building Bots . These Bots will interact with Different Third Party Web Api’s In Order to Fulfill User’s Request . Bots Also Needs to Be integrated with Social Media Application Such As Facebook , Skype , Slack etc.

Bot Administrators Can Buy Bots To Server Users. Users Can Interact With Bots like they are interacting with a Real Support Member that is processing User’s requirements.

Project Involves Bot to Search Products from E-Commerce Websites as per User’s Request. In this Case Bot Will Interact with Web API’s That involves EBay API , Amazon API , Aliexpress and Get Demanded Product For User with List of Prices from These Websites .It will also Allow User To Buy Product From These E-Commerce Website Using These Bots .

Project Allows User To Get Updates and Notifications From Bots. Project also Involves Performing Sentiment Analysis and Maintaining Chat History for Users. It Also Allows you to Start and Stop Getting Notifications From Bot.

Project Involves Appointment Bot that can set / get Appointments On Google Calendar / Office 365 Calendar.

## 2. Specifications

### 2.2 Technical and Software Specification

Following were the Technical Specification setup for the Project Development.

1. Microsoft Windows 8.1 .

2. Visual Studio 2015

3. Microsoft SQL Server 2014 R2 with Management Studio.

4. Visual Studio 2010 Extensions /nugget packages with (Productivity Tools, Unity ).

5. Access To Team Foundation Server

6. Test Accounts For Api's We are Integrating

7. .Net Framework 4.6.1

**Following were the Development software Specification for the Project.**

1. ASP.NET MVC 5 Razor Approach with Unity

2. Generic Repository Pattern With UnitOfWork

3. Strong Object Oriented Project Structure with Layer of Interfaces.

4. SOLID & Dry Principles implementation

5. Microsoft Entity Framework 6 with Code First Approach

6. Version Control With Microsoft Team Foundation Server

7. Logging With ELMAH

8. Linq

9. Web API With JSON Result

## 3. Module Design

### Core Modules

1. Sentiment Analysis

Measure Sentiments By Creating Algorithm For Checking Users Chat with Bot

2. Multilanguage Module Integration For Chatting

## Admin Modules

### 1. Authentication System

* User Interface Design
* Login
* Register
* Change Password
* Forget Password

### 2. Manage Users

* User Interface Design
* Create User
* Edit User Details
* Delete User
* Enable / Disable User
* Update User Details

### 3. Site Usage Statics

* User Interface Design
* Usage Statics By Bot
* Usage Statics By Users
* Bot Usage Statics By Date

### 4. Manage Bot Templates

* User Interface Design
* Register New Bot Template
* Integrate Bot with Other Platforms
* Update Bot Template
* Delete Bot Template
* Enable / Disable Bot

## Bot Administrator Modules

### 1. Authentication System

* User Interface Design
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### 2. Site Usage Statics

* User Interface Design
* Usage Statics By Bot
* Usage Statics By Users
* Bot Usage Statics By Date

### 3. Manage Bot Templates

* Buy Bot Templates
* See Bot Info
* Search Bots
* Integrate Bot with Other Platforms
* Update Bot Template
* Delete Bot Template
* Enable / Disable Bot

## Use Cases For Web And Mobile

**There are Three Actors In Systems**

* Site Administrator
* Bot Administrator
* End Users

### Site Administrator

Site Administrator is the Admin of Website that has Full Access to Each and Every Functionality of Website. Site Administrator Is available with Complete Access To Users Database , Managing All Bots Available in System . It can Perform Actions That May Include Adding New Bots To user , Enable Bots For Clients , Managing Bot Usage Statics , Enabling / Disabling Users. Site Administrators Have Access To Complete Website Contact including Actions that may including changing Website Content , Enabling / Disable Site Modules According To Different User Roles . Below is list of Actions that Site Admin Can Perform :-

### 1. Manage Users

* Create User
* Edit User Details
* Delete User
* Enable / Disable User

### 2. Site Usage Statics

* Usage Statics By Bot
* Usage Statics By Users

### 3. Manage Bot Templates

* Register New Bot Template
* Integrate Bot with Other Platforms
* Update Bot Template
* Delete Bot Template
* Start / Stop Bot

### 4. Manage Clients

* Client List
* Search Clients
* Client Details With Bot Purchases

### 5. Manage Payments

* Payments List
* Search Payments

### 6. Bot Permissions

* Manage Permissions / Roles For Users

### 7. Special Admin Privileges

* View Chat Messages
* Stop Any Running Bot
* Answer On Behalf Of Bot

### 8. Manage Orders

* View Orders List
* List Paging & Search Orders By Client , Website etc.

### 9. Sentimental Analysis

* Show Sentiment Analysis For Users Chat

### Bot Administrator

### Manage Payments

* Payment History
* Payment Notifications
* Buy New Bots

### Manage Orders

* View Orders List
* List Paging & Search Orders By Client , Website etc

### 3. Site Usage Statics

* User Interface Design
* Usage Statics By Bot
* Usage Statics By Users
* Bot Usage Statics By Date

### 4. Manage Bot Templates

* Buy Bot Templates
* See Bot Info
* Search Bots
* Integrate Bot with Other Platforms
* Update Bot Template
* Delete Bot Template
* Enable / Disable Bot

## End User

* End Users Can Chat Using Bots
* End Users Stats Will Be Saved To Database For Usage Statics Module
* End Users Will Be Presented with Authentication Functionality. That May Include :
  + Login
  + Register
  + Forget Password
  + Change Password
  + User Chat History With Bots
  + Notification System That Will Notify User With Different Notifications / Updates Form Bots
  + Search Bot
  + See Bots Info
  + Start / Stop Bot Notifications

## Technical Standards

### High End Security For Web API’s

For Providing High Security to Web API We Will Apply OWIN / Katana Token Based Authentication to API. User Must need to pass token With Call To API. We Can Handle Token Along with Expiration Time

### Automated Testing

For Implementing Automated Testing We Can Use Unit Testing Framework NUnit To Build Test suites .

### Sentiments Analysis Detection Scenario’s

For Detecting Sentiments we can Use below Logic -

### Scenario 1

If user does not respond to bot in a time span of 10-15 or as we finalize then Bot Can Stop the Chat or Close Chat. Bot can keep asking user to give reply within that time span

### Scenario 2

For Detecting Sentiments We Need to User We Need to Detect Some Set of Keywords that may exist in User’s Abusive Talk or Anger Talk only in that we can detect User’s Sentiments

### Technical Concerns

Bot Creation: Foremost Technical Concern Will Be How We will be Implementing Dynamic Bots. As Per Project Requirements we need Bots to be dynamically Created That Defines Bot Response to User.

Sentimental Analysis: Sentimental Analysis is another major concern . We Need To Make Algorithms that will check Conversations to Track Users sentiments Then They Will Fire Events To Start and Stop Bots Depending on Sentiments of Users in Chat .

We are planning to Set specific Set of Keywords that will identify sentiments of Users and Can Call Service or Events To Perform Specific Function Corresponding to Action.

Site Usage Statics**:** We need to implement Tracking in Various Modules of Website to get Site Usage Statics as well as Bot Usage Statics .We Need To Make Separate Tracking API For Website that will be called through Ajax Calls to Save Different Types of Usage Statics . It may include :-

* + Each Bot Usage Statics
  + Each Bot Payment Statics
  + Sentimental Analysis Statics For Bot

## Use Case Diagram

Site  
Administrator

Bot  
Administrator