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| Client: |  | **CRN No:** |  |
| Product : | e-CRM Solutions | CRN Type | ECRM |
| Version: | 1.0 | CRN Date: | 12 May, 2021 |
| Request By: |  | File Path: |  |
| Doc Attach: | -- | Target Date: |  |

Objective: GPS location of executives is to track when executives Check-In/Check-Out from mobile app. GPS location will also be tracked whenever executives enter any follow-up for visit type. Maintaining geolocations of the customers, executives and outlets to calculate more accurate travel distance and time.

Request Description (Process):

# Executives Check-In and Check-Out option with Geolocation tracking is to provide so that executives working locations is available with the organisation.

# New option “Check-In/Check-Out” will be provided where user must select his location before commencing office tasks for the day. User will select his location from the list that is “Home”, “Office” or “Outdoor Duty”. With user selected location, GPS location will also get saved in the system.

The location will be auto-picked according to mobile GPS location from the list, which executive can change if required before saving his “Check-In/Check-Out” action.

~~Executives office GPS location and home GPS location will also be saved with executives master details. To get validated GPS location of the executive home address, location pin will be displayed on the map according to the address of the executive and then location pin can be dragged to the exact location on the map before saving the GPS location.~~

When an executive Check-In from home and his Home GPS location is not available in master records then system will update GPS location in the master records also.

To get validated GPS location of the executive home address, location pin will be displayed on the map according to the address of the executive and then location pin can be dragged to the exact location on the map before saving the GPS location.

When any executive home address changes, only admin can update geo location or can make GPS location blank so the first Check-In from Home location on executive will be recorded as his new Home GPS location.

1. Follow-up entry with geolocation to save for visit action types.

All follow-ups action GEO location will be saved whenever any follow-up is being done by the executives. Executives needs to be inform that they must enter visit type action follow-ups in the app before leaving the clients visited location.

GPS location tracking in follow-up option will be setup based. But when GPS location capturing setup is enabled then follow-up transaction will not be saved until Location permission is not enabled for the app.

GPS location will be capture by the mobile on load of the Follow-up screen. In case location permission for the app is not allowed then app will prompt for the location permissions before user can enter follow-up.

# 3. Validated customer Geolocation must be there in the system. Geolocation converted from address is not always accurate, so option will be provided for validating the geolocation of the customers.

GPS location of clients must be validated by an authorised person. User will first search the customer and then select the customer from the search list, a map of the address will be displayed with the location pin according to the address available in the system. User can drag the pin to the exact location on the map and can save the location. Validated Geolocation of the customer will get saved in the system and id of the person who validated the GPS location.

If validated address is not available for a client, then system will store executive first visit GPS location as unvalidated geolocation with the address of the client and this unvalidated geolocation will be used to validate next executive visits until validated GPS location is not entered by the authorized person.

Location send by Whatsapp from customer mobile can also be saved as customer location. Whatsapp location will be saved as customer location only when validated customer location is not available in the system. Location send by WhatsApp from customer mobile will have preference over executive first visit location. Even Whatsapp location send by customer has to be validated.

Storing of unvalidated GPS location process for masters without GPS location will be implemented while generating reports as this will make less impact on follow-up transactions.

1. Separate API for GPS related data updation.

All GPS related data activities will be handled by a separate GPS API. Tables required

Following will be the proposed layout to Validate Geolocation: –



Table Structures

Setup Mater

Setupmaster table will be there for customising the GPS information and reports.

1. Exception Range (100 meters) – Will high light record only when Check-In/Check-Out is done from more than 100 meters.

GPSSetUpMaster

|  |  |  |  |
| --- | --- | --- | --- |
| S no. | Column Name | Data Type | Description |
| 1 | RecordID | Numeric(5) |  |
| 2 | Description | Char(25) | Exception Range/Max Accuracy/Max Altitude Accuracy |
| 3 | Value | Char(25) | 100 meters/15/10 |
| 4 | CreatedBy | Numeric(5) |  |
| 5 | CreatedDate | DateTime |  |

EntityTypes

|  |  |  |  |
| --- | --- | --- | --- |
| S no. | Column Name | Data Type | Description |
| 1 | EntityTypeID | Numeric(5) |  |
| 2 | EntityTypeCode | Char(5) | EXE/O/C |
| 3 | EntityTypeDesc | Char(25) | Executive/Outlet/Customer |
| 4 | CreatedBy | Numeric(5) |  |
| 5 | CreatedDate | DateTime |  |
| 6 | RefTableName |  | Table name of the entity for join conditions. |
| 7 | RefColumnName |  | Field name of the entiry for join conditions. |

GPSEntity

|  |  |  |  |
| --- | --- | --- | --- |
| S no. | Column Name | Data Type | Description |
| 1 | GPSEntityID | Numeric(5) |  |
| 2 | EntityTypeID | Numeric(5) | FK EntityTypes-> EntityTypeID |
| 3 | GPSEntity | Numeric(5) | ExecutiveId/OutletId/CustomerId |
| 4 | Latitude | DECIMAL(12,9) |  |
| 5 | Longitude | DECIMAL(12,9) |  |
| 6 | Altitude | DECIMAL(12,9) |  |
| 7 | Accuracy | Numeric(5) |  |
| 8 | AccuracyAltitude | Numeric(5) |  |
| 9 | ValidatedGeolocation | Char(1) [Y/N] |  |
| 10 | ValidatedBy | Numeric(5) |  |
| 11 | ValidatedDate | DateTime |  |

TranTypeMaster

|  |  |  |  |
| --- | --- | --- | --- |
| S no. | Column Name | Data Type |  |
| 1 | TranTypeID | Numeric(5) |  |
| 2 | TranTypeCode | Char(5) | A/T/C |
| 3 | TranTypeDesc | Char(25) | [Activity/Travel/Check-In-Check-Out] |
| 4 | CreatedBy | Numeric(5) |  |
| 5 | CreatedDate | DateTime |  |

1. Table “GPSVisitHeader” .

|  |  |  |
| --- | --- | --- |
| S no. | Column Name | Data Type |
| 1 | GPSLocationID | PRIMARK KEY NUMERIC (5) |
| 2 | StartTime | DateTime |
| 3 | EndTime | DateTime |
| 4 | GPSEntityID | FK (GPSEntity-> GPSEntityID) |
| 5 | ActionPlanID | NUMERIC (9) |
| 6 | TranTypeID | FK (TranTypeMaster-> TranTypeID) |

1. Table “GPSVisitDetail” .

|  |  |  |
| --- | --- | --- |
| S no. | Column Name | Data Type |
| 1 | RecordID | NUMERIC (9) Auto Generated |
| 2 | GPSLocationId | FK(GPSVisitHeader-> GPSLocationID) |
| 3 | Latitude | DECIMAL(12,9) |
| 4 | Longitude | DECIMAL(12,9) |
| 5 | Altitude | DECIMAL(12,9) |
| 6 | CreatedDate | DateTime |
| 7 | LocationID | FK(LocationMaster-> LocationID) |

LocationMaster

|  |  |  |  |
| --- | --- | --- | --- |
| S no. | Column Name | Data Type | Description |
| 1 | LocationID | Numeric(5) |  |
| 3 | LocationDesc | Char(25) | [Office/Home/  Outdoor Duty] |
| 4 | CreatedBy | Numeric(5) |  |
| 5 | CreatedDate | DateTime |  |

Reports

1. Executives Check-In/Check-Out location validation.

2. Executives visit types action validation.

3. Executives visit duration validation.

As we are not maintain history of Home GPS location change, so change in Home GPS location after address change of the executive will effect previous period Exception reports.