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# Writing client-side plugins

In **Aware IM** you can not only add plugins for the server (such as custom processes, channels or functions), but you can also add plugins that execute on the client within a web browser. Most of the time you would write these plugins in order to add your custom user interface functionality, or modify the default **Aware IM** user interface behaviour.

All client-side plugins must be written in Javascript and in most cases you need the knowledge of the [Kendo UI](#) Javascript library from Telerik and a popular open source Javascript library called [jQuery](#) . The description that follows assumes that the reader is familiar with Javascript, Kendo UI library and jQuery.

There are several types of the client-side plugins you can add in **Aware IM**:

1. Modify the default behaviour and presentation of forms
2. Modify the default behaviour and presentation of form sections in forms
3. Modify the default presentation of individual fields within forms
4. Modify the default presentation and behaviour of queries
5. Modify the default presentation and behaviour of content panels inside visual perspectives

We will look at each of these client-side plugins separately

## Creating a contact on the phone

We need to use the “create” method of the navigator.contacts object and provide contact data available in the customer record that we are parked on. Retrieving the data can be done using the `AwareApp.getObjectData` function. It has the following signature:

```
getObjectData: function (objectName, objectId, callbackFunction)
```

ObjectName and objectId identify the record to retrieve and callbackFunction specifies a function that will be called when the data has been retrieved. The function will be called with the object storing the retrieved values.

How do we get object name and id? When we define an Aware IM operation of the “Execute Script” type Aware IM automatically defines the following objects that we can use in our Javascript:

1. parser
2. context

The parser object should be already familiar and the context object stores an array of objects with objectName and objectId attributes. The record we are parked on is the first and only one in this array. So to get objectName we use the following `context[0].objectName`; and to get object id we use `context[0].objectId`

So the Javascript we need to write to create a contact looks like this:

```
AwareApp.getObjectData (  
context[0].objectName,  
context[0].objectId,  
function (objectData)  
{  
navigator.contacts.create ({  
"displayName": objectData["FirstName"] + " " + objectData["LastName"],  
"birthday": kendo.parseDate (objectData["DateOfBirth"], "dd/MM/yyyy", "en-US")  
});  
}  
);
```

Note that here "displayName" and "birthday" are the names of the attribute of the Contact object on the phone exposed by the plugin, whereas "FirstName", "LastName" and "DateOfBirth" are the names of the attributes of the Customer object in the CRM application. Note also that all Aware IM attribute values are strings and if the plugin requires some other type (for example, date), then the strings need to be converted to the appropriate type.

The next step is to create operations of the "Execute Script" type to the form and customer list. We can add a panel operation to the "Editing Mobile" form of the Customer object and an operation with record to the "Customer - all mobile" query. We then specify the above script as a parameter of the operation.

## Send email to the selected contact

We need to use the pickContact method of the navigator.contacts object to display a list of contacts, let the user pick one and then we need to start a process in the application to send an email to the email address of the contact picked by the user.

The email address returned by the plugin needs to be saved in some temporary object and then this object can be used in the process. So we will create a temporary business object (persistence type - memory) called ContactParam with the single EmailAddress attribute. We will then create a process called SendEmailToContact with the ContactParam object as its input. The process will then use the SEND action to send any email to this email address (the email can use tag expressions to retrieve some information from the system - for example, from SystemSettings or from the logged in user).

To start a process we will use the AwareApp.startProcessWithInit function. It has the following signature:

```
startProcessWithInit: function (procName, renderOption, objName, initValues, context)
```

Here procName is the name of the process to start, renderOption is where to display the results of the

process (we can use null), objName is the name of the parameter object, initValues is the object storing values of the parameter object and context contains additional parameter objects (null in our case)

So our Javascript can look like this:

```
navigator.contacts.pickContact (function (contact)

{

var email = contact.emals[0].value;

AwareApp.startProcessWithInit (

"SendEmailToContact",

null,

"ContactParam",

{ "EmailAddress" : email }

},

function (error { console.log (error); }

);
```

Then we just need to add a command of the "Execute Script" type to the mobile menu of the application.

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- [Modifying default behavior and presentation of forms](#)
- [Modifying default behavior and presentation of form sections](#)
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