

# Sales Order Picking

## Interoperability

### Group B

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## Functionalities/Features

### User Authentication

#### 1. Start communication with ERP

<b>Feature</b>	WS1_Access_Token
<b>Description</b>	Form to be filled with picker or manager credentials.
<b>Goal</b>	If the login is successful, get the access token so the picker/manager can start communicating with the ERP.
<b>Core View ID</b>	CV1_User_Authentication

### Picker

#### 1. View sales order to be prepared

<b>Feature</b>	WS2_Top_Sales_Order
<b>Description</b>	Table with the information of the sales order on top of the picking wave.
<b>Goal</b>	Show all products and their quantities of the sales order to be prepared.
<b>Core View ID</b>	CV2_Sales_Order_To_Be_Prepared

#### 2. Insert product location

<b>Feature</b>	WS3_Check_Digit
<b>Description</b>	Form to be filled with product location check digit.
<b>Goal</b>	Check if the picker is in the right location to pick a specific product.
<b>Core View ID</b>	CV3_Product_Location

### 3. View number of product units to pick

<b>Feature</b>	WS4_Product_Units, , WS5_Check_Stock
<b>Description</b>	Number of product units to pick.
<b>Goal</b>	Show number of product units to be picked.
<b>Core View ID</b>	CV4_Product_Units

### 4. Insert number of picked units (exception)

<b>Feature</b>	WS6_Picked_Units, WS5_Check_Stock
<b>Description</b>	Form to be filled with picked product units.
<b>Goal</b>	Check the number of picked product units to update sales order.
<b>Core View ID</b>	CV5_Picked_Units

## Manager

### 1. View Inventory

<b>Feature</b>	WS7_Inventory
<b>Description</b>	Warehouse layout with all the products and quantities per location.
<b>Goal</b>	Show a global view of the warehouse and consult the inventory (products and their quantities).
<b>Core View ID</b>	CV7_Warehouse

### 2. View Pickers

<b>Feature</b>	WS8_Pickers
<b>Description</b>	List all the pickers signed up.
<b>Goal</b>	Show active and inactive pickers.
<b>Core View ID</b>	CV8_Pickers

### 3. View Picking Wave (all sales orders)

<b>Feature</b>	WS9_Sales_Orders
<b>Description</b>	Table with the list of all the sales orders and its date.
<b>Goal</b>	Show all sales orders ordered by date.
<b>Core View ID</b>	CV9_Picking_wave

### 4. Assign Picker to Sales Order

<b>Feature</b>	WS10_Assign_Picker
<b>Description</b>	Multiple select fill to choose a picker to be assigned a sales order.
<b>Goal</b>	Create pickers' picking waves.
<b>Core View ID</b>	CV9_Picking_wave

## Core Views

In this section, we identify the core views of our application for the different users Picker and Manager. For each core view we will specify the user and business goals, inwards and outward paths and core elements.

### User Authentication

#### CV1\_User\_Authentication

As a user (picker/manager), I should login in the Web App and consequently authenticate in the ERP to start communicating.

<b>User Goals</b>	Authenticate in the Web App.
<b>Business Goals</b>	Authenticate in the ERP.
<b>Inward Paths/Trigger words</b>	(open web app)
<b>Core elements</b>	WS1_Access_Token
<b>Calls to Action/Outward Paths</b>	Sign in (success picker) -> Sales Order (to be prepared) Page Sign in (success manager) -> Warehouse Page Sign in (fail) -> Sign In Page

**Sign in**

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In nec nibh vitae...

Email

Password

Sign in

## Picker

### CV2\_Sales\_Order\_To\_Be\_Prepared

As a picker, I should be able to view the products of the sales order I will prepare.

<b>User (Picker) Goals</b>	View sales order to be prepared (products and their quantities).
<b>Business Goals</b>	Start picking a sales order.
<b>Inward Paths/Trigger words</b>	Sign In Page
<b>Core elements</b>	WS2_Top_Sales_Order
<b>Calls to Action/Outward Paths</b>	Start picking button -> Product Location Page Logout button -> Sign In Page

Logo	Hi, Picker!	Logout
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## Sales Order to be prepared

Sales Order 1

20/11/2018

#	Product	Quantity
1	Honda	2009
2	Toyota	2012
3	Hyundai	2010
4	Honda	2009
5	Toyota	2012

Start picking

## CV3\_Product\_Location

As a picker, I have to enter the location code of the product that I'm being told to pick, because my manager wants to check if I'm in the right position.

<b>User (Picker) Goals</b>	Enter the product location (check digit).
<b>Business Goals</b>	Do the picking of the product. Check product's location digit.
<b>Inward Paths/Trigger words</b>	Sales Order (to be prepared) Page
<b>Core elements</b>	WS3_Check_Digit
<b>Calls to Action/Outward Paths</b>	OK button -> Product Units Page Logout button -> Sign In Page

Logo

Logout

## Product Location

PRODUCT XPTO20/11/2018

Enter location's check digit:

2

1

1

3

OK



## CV4\_Product\_Units

As a picker, I should be able to view the product's needed quantity to be picked.

<b>User (Picker) Goals</b>	Picker views number of product units to pick.
<b>Business Goals</b>	Inform number of product units to pick.
<b>Inward Paths/Trigger words</b>	Product Location page
<b>Core elements</b>	WS4_Product_Units
<b>Calls to Action/Outward Paths</b>	Not enough units button -> Picked Units Page OK button (finished) -> Success Page OK button (next) -> Sales Order (to be prepared) Page Logout button -> Sign In Page

Login

Logout

# Product Units

PRODUCT XPTO20/11/2018

Quantity: 200 units

OK

Not enough units

## CV5\_Picked\_Units

As a picker, I want to enter the number of picked units if there isn't enough quantity to satisfy the sales order.

<b>User (Picker) Goals</b>	Picker inserts the available quantity to pick.
<b>Business Goals</b>	Enter product units to pick.
<b>Inward Paths/Trigger words</b>	Product Units page
<b>Core elements</b>	WS5_Picked_Units
<b>Calls to Action/Outward Paths</b>	OK button (finished) -> Success Page OK button (next) -> Sales Order (to be prepared) Page Logout button -> Sign In Page

Logo

Logout

## Picked Units

PRODUCT XPTO20/11/2018

Quantity:

200 units

Picked:

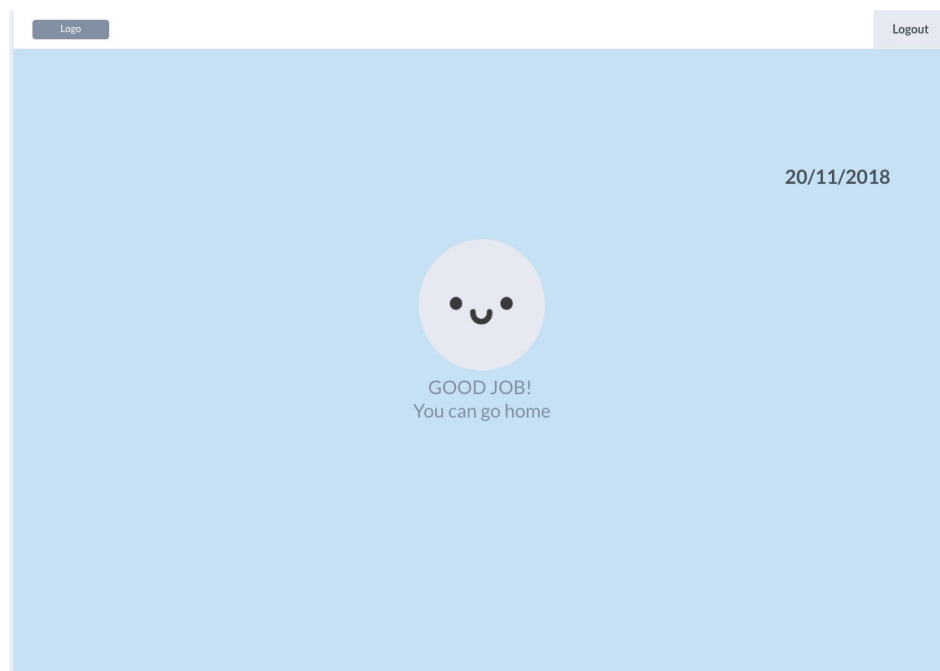
units

OK

## CV6\_Finish\_Picking

As a picker, when I finish all the sales orders assigned to me, I'll receive a success message.

<b>User (Picker) Goals</b>	Finish his picking wave (all the sales orders that are assigned to him).
<b>Business Goals</b>	Inform the picker that he has finished the job.
<b>Inward Paths/Trigger words</b>	Product Units Page Picked Units Page
<b>Core elements</b>	
<b>Calls to Action/Outward Paths</b>	Logout button -> Sign In Page

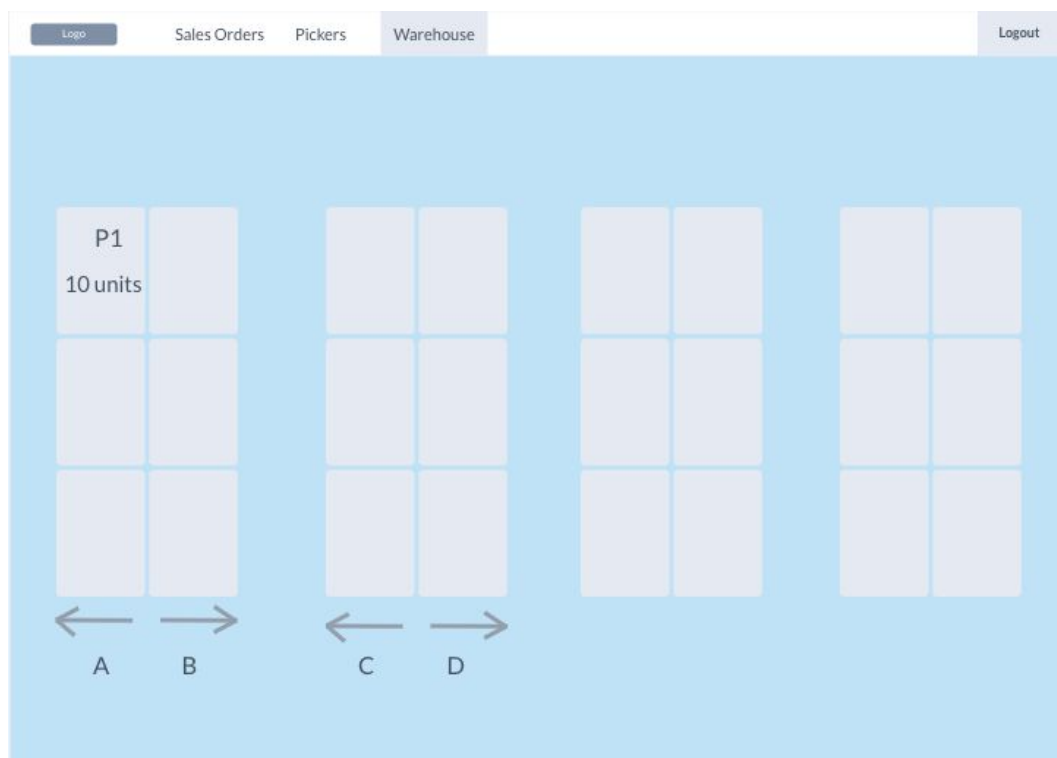


## Manager

### CV7\_Warehouse

As a manager, I want to view the layout of the warehouse and its products distribution and available quantity.

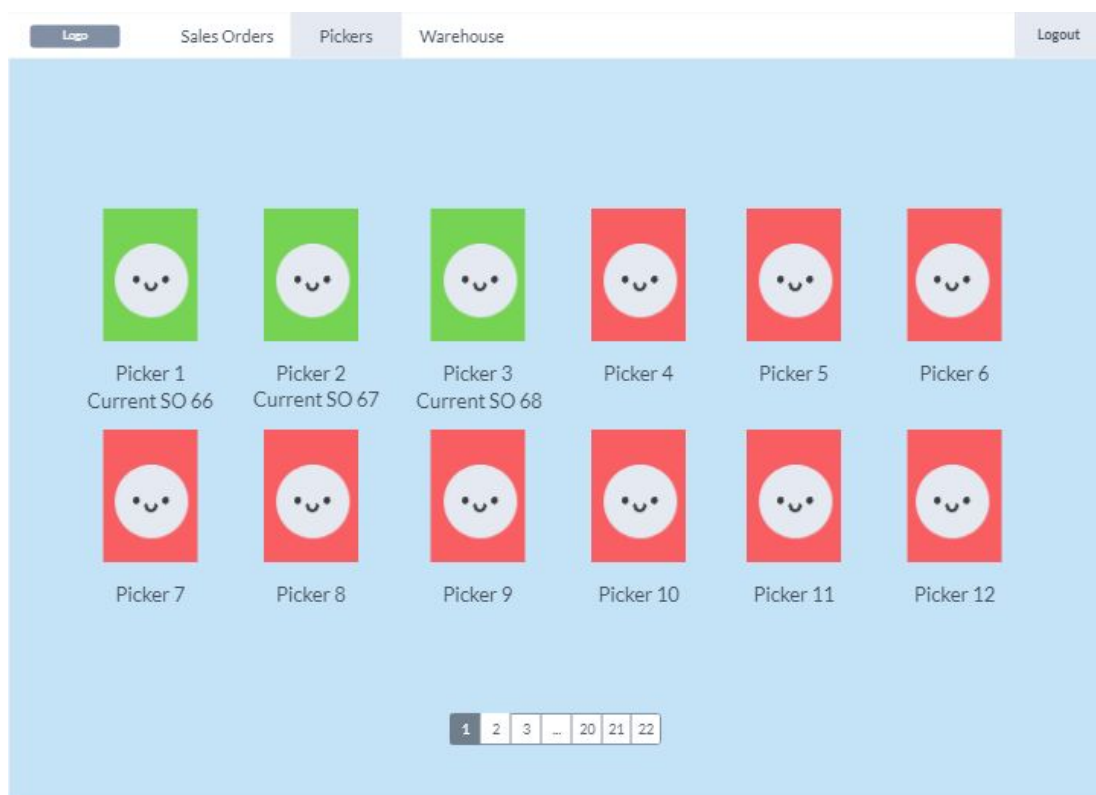
<b>User (Manager) Goals</b>	View the warehouse layout. View products distribution.
<b>Business Goals</b>	View the quantity of each product in its location.
<b>Inward Paths/Trigger words</b>	Sign In Page Sales Orders Tab Pickers Tab
<b>Core elements</b>	WS6_Inventory
<b>Calls to Action/Outward Paths</b>	Sales Orders button -> Sales Orders Tab Pickers button -> Pickers Tab Logout button -> Sign In Page



## CV8\_Pickers

As a manager, I want to check all the pickers that are available/unavailable and current sales orders being prepared.

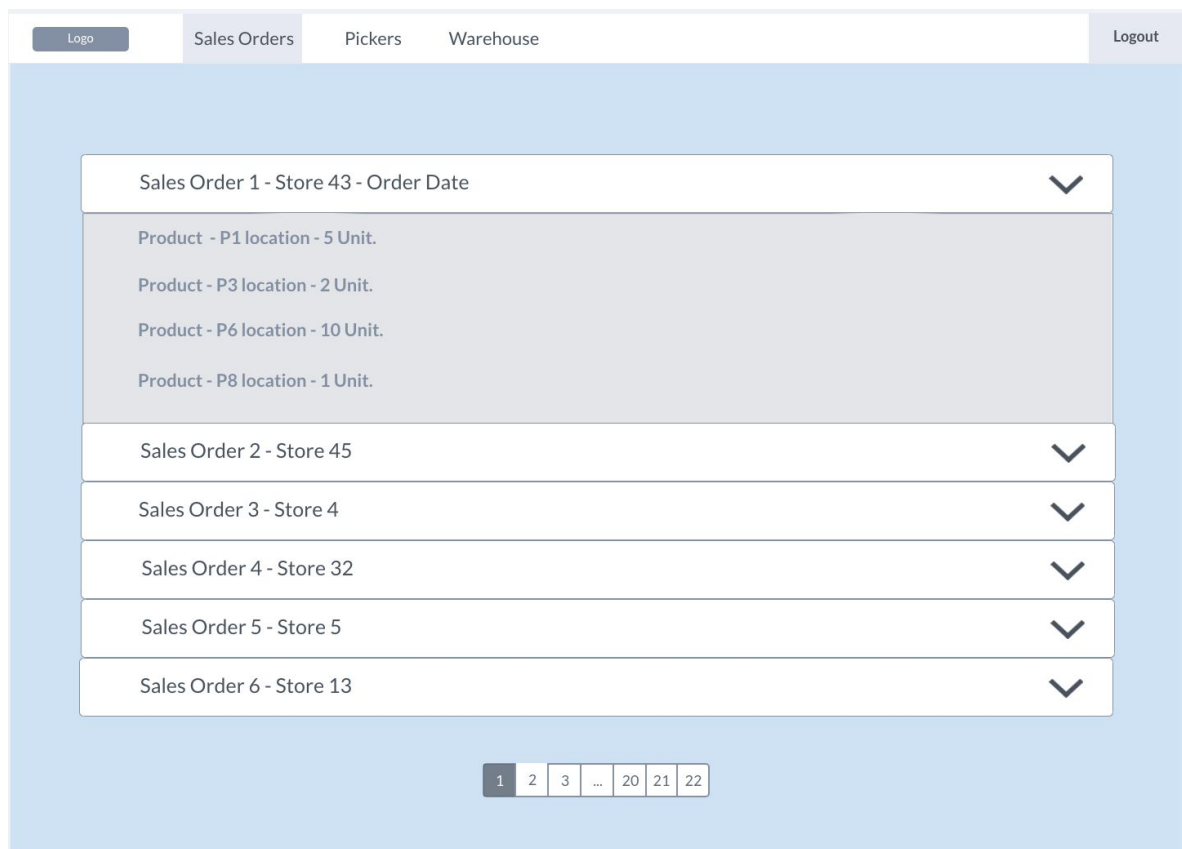
<b>User (Manager) Goals</b>	List the pickers.
<b>Business Goals</b>	Analyse available pickers and which sales orders are being prepared.
<b>Inward Paths/Trigger words</b>	Sales Orders Tab Warehouse Tab
<b>Core elements</b>	WS7_Pickers
<b>Calls to Action/Outward Paths</b>	Sales Orders button -> Sales Orders Tab Warehouse button -> Warehouse Tab Logout button -> Sign In Page



## CV9\_Picking\_wave

As a manager, I should be able to view all open sales orders.

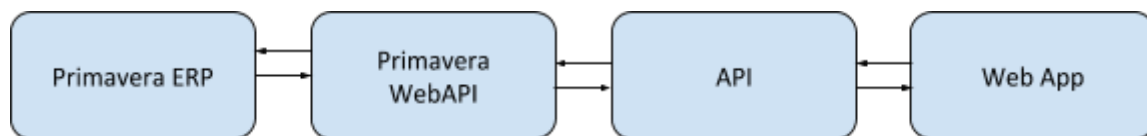
<b>User (Manager) Goals</b>	Assign pickers to sales orders.
<b>Business Goals</b>	Manage sales orders.
<b>Inward Paths/Trigger words</b>	Pickers Tab Warehouse Tab
<b>Core elements</b>	WS8_Sales_Orders WS9_Assign_Picker
<b>Calls to Action/Outward Paths</b>	Pickers button -> Pickers Tab Warehouse button -> Warehouse Tab Logout button -> Sign In Page



## Interoperability with Primavera WebApi

The communication of our web app with Primavera ERP is done through our API and Primavera's Web API.

Essentially, our web app makes the necessary requests for each core view to our API. In turn, our API communicates with Primavera's Web API, which returns the necessary information back to our API. Once that information is received, our API informs the web app.



## Webservices

<b>Webservice ID</b>	WS1_Access_Token
<b>Webservice Description</b>	Authenticate in the ERP
<b>Related Core Views</b>	CV1_User_Authentication
<b>Route</b>	POST
<b>Input Example API</b>	<b>/login</b> HTTP/1.1 <b>Host:</b> {{EXPRESS_API_URL}} <b>cache-control:</b> no-control
<b>Expected Output API</b>	
<b>Input Example WebAPI</b>	<b>/WebApi/token</b> HTTP/1.1 <b>Host:</b> {{PRIMAVERA_API_URL}} <b>Content-Type:</b> application/x-www-form-urlencoded <b>cache-control:</b> no-cache username=FEUP&password=qualquer1& company=CONTINENTE&instance=DEFAULT&grant_type =password&line=professional
<b>Expected Output WebAPI</b>	{ <b>"access_token":</b> "OfRJrQ...", <b>"token_type":</b> "bearer", <b>"expires_in":</b> 1199 }

<b>Webservice ID</b>	WS2_Top_Sales_Order
<b>Webservice Description</b>	
<b>Related Core Views</b>	CV2_Sales_Order_To_Be_Prepared
<b>Route</b>	GET
<b>Input Example API</b>	<b>/topSalesOrder</b> HTTP/1.1 <b>Host:</b> {{EXPRESS_API_URL}} <b>cache-control:</b> no-cache
<b>Expected Output API</b>	<pre> {   "DataSet": {     "Table": [       {         "Data": "2018-11-29T00:00:00",         "Artigo": "ARROZ",         "Quantidade": 1,         "Entidade": "NORTESHOP",         "IdCabecDoc": "8799f449-f3e7-11e8-bd69-...",         "Id": "8799f444-f3e7-11e8-bd69-..."       },       {         "Data": "2018-11-29T00:00:00",         "Artigo": "FEIJAO PRETO",         "Quantidade": 1,         "Entidade": "NORTESHOP",         "IdCabecDoc": "8799f449-f3e7-11e8-bd69-...",         "Id": "8799f448-f3e7-11e8-bd69-..."       }     ]   },   "Query": "System.Data.SqlClient.SqlCommand" } </pre>
<b>Input Example WebAPI</b>	<b>/WebApi/Administrador/Consulta</b> HTTP/1.1 <b>Host:</b> {{PRIMAVERA_API_URL}} <b>Content-Type:</b> application/json <b>Authorization:</b> Bearer TBu02n... <b>cache-control:</b> no-cache <b>query:</b> `SELECT CabecDoc.Data, LinhasDoc.Artigo, LinhasDoc.Quantidade, CabecDoc.Entidade, LinhasDoc.IdCabecDoc, LinhasDoc.Id`  <b>FROM</b> LinhasDoc, CabecDoc <b>WHERE</b> CabecDoc.Id=LinhasDoc.IdCabecDoc



	<b>AND Artigo IS NOT NULL</b> <b>AND LinhasDoc.IdCabecDoc= (SELECT TOP 1 IdCabecDoc</b> <b>FROM LinhasDoc WHERE Data=(SELECT MIN(Data)</b> <b>FROM LinhasDoc))`}</b>
<b>Expected Output WebAPI</b>	<pre>[   {     "Data": "2018-11-29T00:00:00",     "Artigo": "ARROZ",     "Quantidade": 1,     "Entidade": "NORTESHOP",     "IdCabecDoc": "8799f449-f3e7-11e8-bd69-...",     "Id": "8799f444-f3e7-11e8-bd69-..."   },   {     "Data": "2018-11-29T00:00:00",     "Artigo": "FEIJAO PRETO",     "Quantidade": 1,     "Entidade": "NORTESHOP",     "IdCabecDoc": "8799f449-f3e7-11e8-bd69-...",     "Id": "8799f448-f3e7-11e8-bd69-..."   } ]</pre>

<b>Webservice ID</b>	WS3_Check_Digit
<b>Webservice Description</b>	
<b>Related Core Views</b>	CV3_Product_Location
<b>Route</b>	
<b>Input Example API</b>	
<b>Expected Output API</b>	
<b>Input Example WebAPI</b>	
<b>Expected Output WebAPI</b>	

<b>Webservice ID</b>	WS4_Product_Units
<b>Webservice Description</b>	
<b>Related Core Views</b>	CV4_Product_Units
<b>Route</b>	GET

Input Example API	<b>/WebApi/Administrador/Consulta</b> HTTP/1.1 <b>Host:</b> {{PRIMAVERA_API_URL}} <b>Content-Type:</b> application/json <b>Authorization:</b> Bearer TBu02n... <b>cache-control:</b> no-cache <b>{query:</b> "SELECT LinhasDoc.Quantidade, LinhasDoc.Artigo <b>FROM</b> LinhasDoc <b>WHERE</b> LinhasDoc.Id='" + req.body.linhasDocId + "'";}
Expected Output API	[ { "Quantidade": 1, "Artigo": "ARROZ" } ] ]
Input Example WebAPI	<b>/productUnits</b> HTTP/1.1 <b>Host:</b> {{EXPRESS_API_URL}} <b>cache-control:</b> no-cache
Expected Output WebAPI	{ "DataSet": { "Table": [ { "Quantidade": 1, "Artigo": "ARROZ" } ] }, "Query": "System.Data.SqlClient.SqlCommand" }

Webservice ID	WS5_Check_Stock
Webservice Description	
Related Core Views	CV3_Product_Location, CV5_Picked_Units
Route	GET
Input Example API	<b>/WebApi/Administrador/Consulta</b> HTTP/1.1 <b>Host:</b> {{PRIMAVERA_API_URL}} <b>Content-Type:</b> application/json <b>Authorization:</b> Bearer TBu02n... <b>cache-control:</b> no-cache <b>{query:</b> "SELECT Artigo, Stock <b>FROM</b>

	<pre> INV_ValoresActuaisStock req.body.artigo + "" req.body.expectedStock ;} WHERE AND Artigo="" Stock&gt;="" + + </pre>
Expected Output API	<pre> [   {     "Artigo": "ARROZ",     "Stock": 1   } ] </pre>
Input Example WebAPI	<pre> /checkStock HTTP/1.1 Host: {{EXPRESS_API_URL}} cache-control: no-cache </pre>
Expected Output WebAPI	<pre> {   "DataSet": {     "Table": [       {         "Artigo": "ARROZ",         "Stock": 1       }     ]   },   "Query": "System.Data.SqlClient.SqlCommand" } </pre>

Webservice ID	WS6_Picked_Units
Webservice Description	
Related Core Views	CV5_Picked_Units
Route	POST
Input Example API	
Expected Output API	
Input Example WebAPI	
Expected Output WebAPI	

Webservice ID	WS7_Inventory
Webservice Description	

<b>Related Core Views</b>	CV7_Warehouse
<b>Route</b>	GET
<b>Input Example API</b>	<b>/WebApi/Administrador/Consulta</b> HTTP/1.1 <b>Host:</b> {{PRIMAVERA_API_URL}} <b>Content-Type:</b> application/json <b>Authorization:</b> Bearer TBu02n... <b>cache-control:</b> no-cache <b>{query: "SELECT</b> Artigo, INV_ValoresActuaisStock.Localizacao, Stock <b>FROM</b> INV_ValoresActuaisStock, ArmazemLocalizacoes <b>WHERE</b> INV_ValoresActuaisStock.Localizacao=ArmazemLocalizac oes.Localizacao ";}
<b>Expected Output API</b>	[ { "Artigo": "MASSA", "Localizacao": "A1.1.1", "Stock": 1 }, { "Artigo": "ARROZ", "Localizacao": "A1.1.2", "Stock": 1 }, { "Artigo": "FEIJAO PRETO", "Localizacao": "A1.2.1", "Stock": 0 } ] 
<b>Input Example WebAPI</b>	<b>/inventory</b> HTTP/1.1 <b>Host:</b> {{EXPRESS_API_URL}} <b>cache-control:</b> no-cache
<b>Expected Output WebAPI</b>	{ "DataSet": { "Table": [ { "Artigo": "MASSA", "Localizacao": "A1.1.1", "Stock": 1 }, { "Artigo": "ARROZ", "Localizacao": "A1.1.2", } ] } } 

	<pre>         "Stock": 1       },       {         "Artigo": "FEIJAO PRETO",         "Localizacao": "A1.2.1",         "Stock": 0       }     ]   },   "Query": "System.Data.SqlClient.SqlCommand" }</pre>
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<b>Webservice ID</b>	WS8_Pickers
<b>Webservice Description</b>	
<b>Related Core Views</b>	CV8_Pickers
<b>Route</b>	
<b>Input Example API</b>	
<b>Expected Output API</b>	
<b>Input Example WebAPI</b>	
<b>Expected Output WebAPI</b>	

<b>Webservice ID</b>	WS9_Sales_Orders
<b>Webservice Description</b>	
<b>Related Core Views</b>	CV9_Picking_Wave
<b>Route</b>	GET
<b>Input Example API</b>	/salesOrder HTTP/1.1 <b>Host:</b> {{EXPRESS_API_URL}} <b>cache-control:</b> no-cache
<b>Expected Output API</b>	<pre> [   {     "Data": "2018-11-29T00:00:00",     "Artigo": "ARROZ",     "Quantidade": 1,     "Localizacao": "A1.1.2",     "Entidade": "NORTESHOP",     "IdCabecDoc": "4b2b5c51-f3e3-11e8-bd69-...", </pre>

	<pre>       "Id": "4b2b5c53-f3e3-11e8-bd69-..."     },     {       "Data": "2018-11-29T00:00:00",       "Artigo": "ARROZ",       "Quantidade": 1,       "Localizacao": "A1.1.2",       "Entidade": "NORTESHOP",       "IdCabecDoc": "8799f449-f3e7-11e8-bd69-...",       "Id": "8799f444-f3e7-11e8-bd69-..."     },     {       "Data": "2018-11-29T00:00:00",       "Artigo": "FEIJAO PRETO",       "Quantidade": 1,       "Localizacao": "A1.2.1",       "Entidade": "NORTESHOP",       "IdCabecDoc": "8799f449-f3e7-11e8-bd69-...",       "Id": "8799f448-f3e7-11e8-bd69-..."     },     {       "Data": "2018-11-29T00:00:00",       "Artigo": "FEIJAO PRETO",       "Quantidade": 1,       "Localizacao": "A1.2.1",       "Entidade": "NORTESHOP",       "IdCabecDoc": "d1635bf1-f3e6-11e8-bd69-...",       "Id": "e229471b-f3e6-11e8-bd69-..."     }   ] </pre>
Input Example WebAPI	<pre> /WebApi/Administrador/Consulta HTTP/1.1 Host: {{PRIMAVERA_API_URL}} Content-Type: application/json Authorization: Bearer TBu02n... cache-control: no-cache { query: "SELECT CabecDoc.Data, LinhasDoc.Artigo, LinhasDoc.Quantidade, Localizacao, CabecDoc.Entidade, CabecDoc.Id FROM      LinhasDoc,      CabecDoc      WHERE CabecDoc.Id=LinhasDoc.IdCabecDoc AND Artigo IS NOT NULL ORDER BY Artigo ASC, LinhasDoc.Data DESC";} </pre>
Expected Output WebAPI	<pre> {   "DataSet": {     "Table": [       { </pre>

	<pre>         "Data": "2018-11-29T00:00:00",         "Artigo": "ARROZ",         "Quantidade": 1,         "Localizacao": "A1.1.2",         "Entidade": "NORTESHOP",         "IdCabecDoc": "4b2b5c51-f3e3-11e8-bd69-...",         "Id": "4b2b5c53-f3e3-11e8-bd69-..."     },     {         "Data": "2018-11-29T00:00:00",         "Artigo": "ARROZ",         "Quantidade": 1,         "Localizacao": "A1.1.2",         "Entidade": "NORTESHOP",         "IdCabecDoc": "8799f449-f3e7-11e8-bd69-..",         "Id": "8799f444-f3e7-11e8-bd69-..."     },     {         "Data": "2018-11-29T00:00:00",         "Artigo": "FEIJAO PRETO",         "Quantidade": 1,         "Localizacao": "A1.2.1",         "Entidade": "NORTESHOP",         "IdCabecDoc": "8799f449-f3e7-11e8-bd69-...",         "Id": "8799f448-f3e7-11e8-bd69-..."     },     {         "Data": "2018-11-29T00:00:00",         "Artigo": "FEIJAO PRETO",         "Quantidade": 1,         "Localizacao": "A1.2.1",         "Entidade": "NORTESHOP",         "IdCabecDoc": "d1635bf1-f3e6-11e8-bd69-...",         "Id": "e229471b-f3e6-11e8-bd69-..."     }     ] }, "Query": "System.Data.SqlClient.SqlCommand" } </pre>
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<b>Webservice ID</b>	WS10_Assign_Picker
<b>Webservice Description</b>	
<b>Related Core Views</b>	CV9_Picking_Wave

<b>Route</b>	
<b>Input Example API</b>	
<b>Expected Output API</b>	
<b>Input Example WebAPI</b>	
<b>Expected Output WebAPI</b>	