

# CloudaIDE

Go to the Web  
with CloudaIDE

# Firebird Conference 2019

Berlin, 17-19 October



YOUR PREMIER SOURCE OF FIREBIRD SUPPORT

## IBSurgeon



# Go to the Web with CloudaIDE



- Free
- Easy to grasp for database people
- Basic paradigm – database objects as starting point of web application design

# Go to the Web with CloudaIDE

## Supported Databases

- FirebirdSQL
- MS SQL Server
- MySQL
- Oracle
- PostgresSQL
- Teradata

## Development tools for

- MS Windows
- Linux
- MacOS

# Goals

- easy to learn, fast to develop
- easy migration of legacy client/server applications (Single Page Applications architecture with robust interaction)
- easy deployment
- Scalability (JEE clustering)
- Extensibility (Java -server, Javascript - client, native executives)
- mobile apps (some work ahead)

# Three-tier architecture



- Layout – Screen Editor
- User and Server Interaction– “triggers”. Programs in MT, a simple language resembling PSQL
- Javascript Gateway. Javascript called from MT and MT calling from Javascript
- Security tasks. Checking validity of client requests
- Translating request/response between client and server
- Application logic – gateway between MT and Java (in case of not sufficient power of database Stored Procedures) or using native executives.
- Data Storage
- Application logic implemented using Stored Procedures

# Components of the CloudaIDE

CloudaIDE Designer – an Eclipse plug-in

CloudaIDE applications:

- Administration Console
  - User self-service

CloudaIDE database supporting objects

# CloudaIDE Designer

Tool Palette

Data Source Explorer

Outline View

Miniature View

Screen Editor

Properties View

Package Explorer

The screenshot displays the CloudaIDE Designer interface. At the top, the title bar reads "CloudaIDE - adminFB/mroovka/Sessions.formica - Eclipse IDE". The main workspace is divided into several views:

- Outline View:** Located on the left, it shows a tree structure of database objects including "SESSIONS", "Procedures", and "Triggers".
- Package Explorer:** Located at the bottom left, it shows a project tree with folders like "admin", "mroovka\_java", and "mroovka", along with files such as "LoginForm.formica" and "Users.formica".
- Screen Editor:** The central workspace displays a table editor for the "SESSIONS" table. The table has columns: "CREATED\_ON", "LAST\_ACCESSED", "CLOSED\_ON", "USERNAME", and "APPLICATION...". A "Miniature View" of the table is visible on the right side of the editor.
- Properties View:** Located on the right, it shows a table of properties for the selected object. The table has columns "Property" and "Value".

Property	Value
Basic	
Database Block	Yes
Name	SESSIONS
Single Record	No
DataBase	
Alias	
Default Order	"CREATED_ON" DESC,"ID"
Default Where	
DML Table Name	MROOVKA_SESSIONS
Fetch All	No
Instead of DELETE	never
Instead of INSERT	never
Instead of UPDATE	never
Locking Mode	Last in Wins
Parameter Prefix	
Query Allowed	Yes
Query Table Name	MROOVKA_SESSIONS
Functional	
Authorizations	
Columns	
Name	
Nullable	
Scrollbar	Yes
Screen	
Caption	Sessions
Decoration	No
Rows Displayed	20

At the bottom of the interface, there are tabs for "Design" (selected), "No Script", "Problems" (0 items), and "Console" (Development Mode). A table with columns "Description", "Resource", "Path", "Location", and "Type" is visible at the very bottom.



# Fast-Track Development

To develop a screen a programmer can drag a database view or table from the Data Source Explorer and drop onto the Screen Editor. Then fine tune layout, properties and triggers.

The screenshot displays the CloudaIDE interface with the following components:

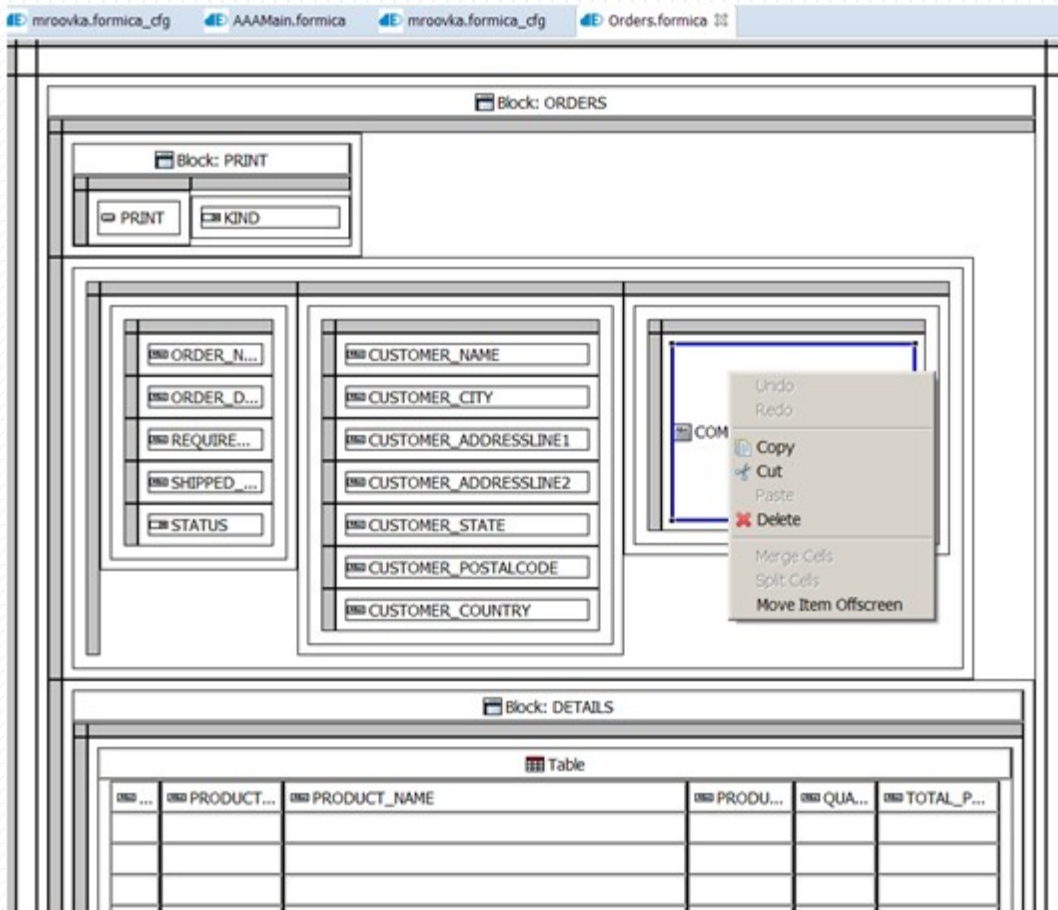
- Data Source Explorer:** Shows a tree view of database objects. The 'CUSTOMERS\_V' view is selected, showing its columns: SALES\_REP [VARCHAR(101) Nullable], SALESREP\_ID [BIGINT Nullable], CREDIT\_LIMIT [DECIMAL(12, 2) Nullable], COUNTRY [VARCHAR(50) Nullable], POSTALCODE [VARCHAR(15) Nullable], STATE [VARCHAR(50) Nullable], CITY [VARCHAR(50) Nullable], ADDRESSLINE2 [VARCHAR(50) Nullable], ADDRESSLINE1 [VARCHAR(50) Nullable], PHONE [VARCHAR(50) Nullable], CONTACT\_FIRST\_NAME [VARCHAR(50) Nullable], CONTACT\_LAST\_NAME [VARCHAR(50) Nullable], NAME [VARCHAR(50) Nullable], and ID [BIGINT Nullable].
- Screen Editor:** A design view titled 'Block: CUSTOMERS\_V' showing a 'Table' widget with a grid of input fields. The fields are labeled with column names: CONTACT\_LAST\_NAME, CONTACT\_FIRST\_NAME, PHONE, ADDRESSLINE1, ADDRESSLINE2, CITY, STATE, POSTALCODE, COUNTRY, and CREDIT\_LIMIT.
- Properties Window:** Displays the properties for the selected 'Table' widget. The 'Basic' tab is active, showing properties such as Database Block (Yes), Name (CUSTOMERS\_V), Single Record (No), Alias, Default Order ("NAME", "ID"), Default Where, DML Table Name (CUSTOMERS), Fetch All (No), Locking Mode (Last in Wins), Parameter Prefix, Query Allowed (Yes), and Query Table Name.
- Package Explorer:** Shows the project structure for 'mroovka', including files like LoginForm.formica, AAAMain.formica, Administration.formica, Customers.formica, EmployeeList.formica, Employees.formica, Offices.formica, and Orders.formica.

# Fast-Track Development

- Creates one of two selectable layouts – Table or Form
- Creates screen items based on columns and gives them properties
- Binds screen items with database columns
- Provides the programmer with default CRUD and QBE

# Screen Editor -

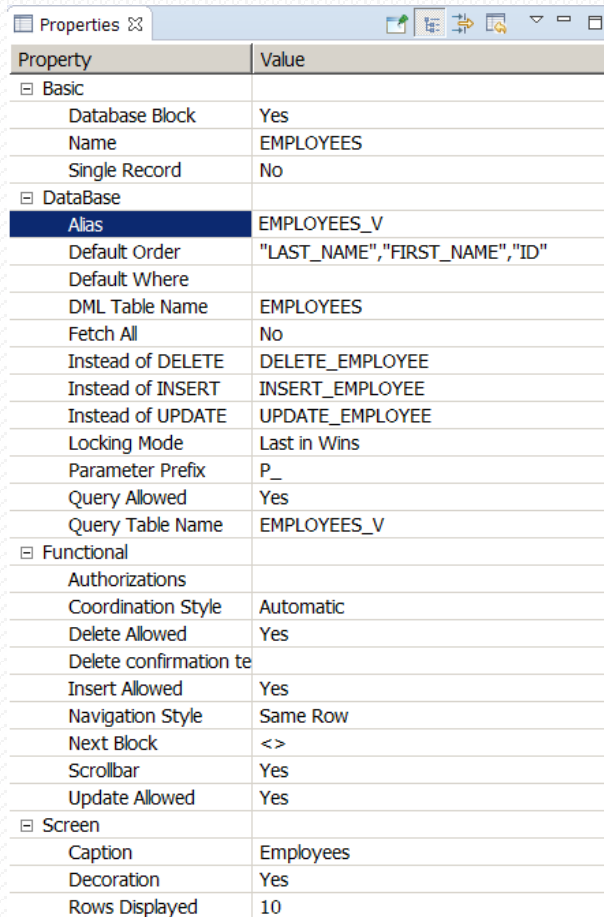
## Tool to sketch of screen layout



### Features:

- Drag and Drop
- Undo Redo
- Cut and Paste
- Drop from Data Source Explorer

# Properties View



Property	Value
Basic	
Database Block	Yes
Name	EMPLOYEES
Single Record	No
DataBase	
Alias	EMPLOYEES_V
Default Order	"LAST_NAME", "FIRST_NAME", "ID"
Default Where	
DML Table Name	EMPLOYEES
Fetch All	No
Instead of DELETE	DELETE_EMPLOYEE
Instead of INSERT	INSERT_EMPLOYEE
Instead of UPDATE	UPDATE_EMPLOYEE
Locking Mode	Last in Wins
Parameter Prefix	P_
Query Allowed	Yes
Query Table Name	EMPLOYEES_V
Functional	
Authorizations	
Coordination Style	Automatic
Delete Allowed	Yes
Delete confirmation te	
Insert Allowed	Yes
Navigation Style	Same Row
Next Block	<>
Scrollbar	Yes
Update Allowed	Yes
Screen	
Caption	Employees
Decoration	Yes
Rows Displayed	10

Properties View displays properties of a selected object

- Block is UI representation of a database table
- Item is a client object that corresponds to a database column

# Properties View - Block

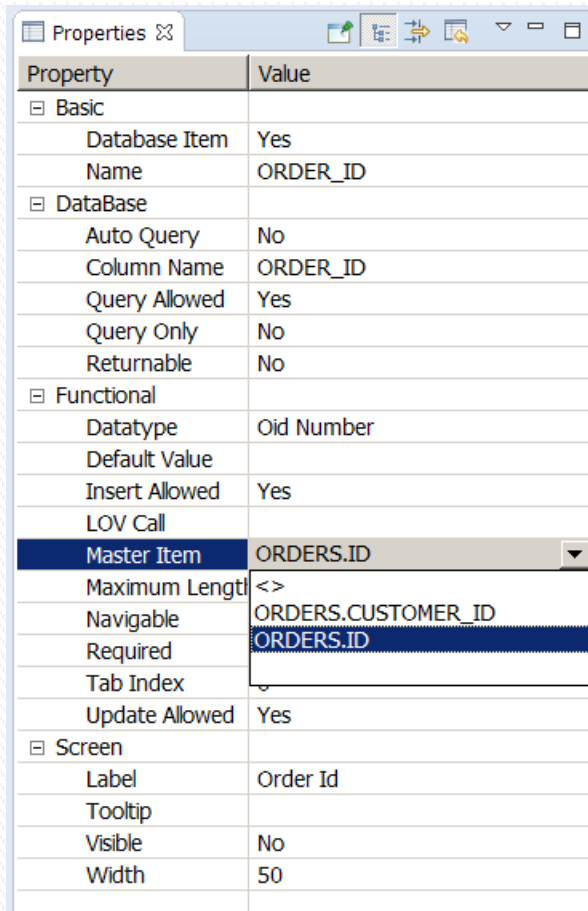
- **DML Table Name**
- **Query Table Name**

Different tables for DML and Query can be specified in order to facilitate updates on unupdatable views.

- **Instead of Insert, Instead of Update, Instead of Delete**

Programmer can define own procedures to handle DML. Updates can be replaced by application specific processing. Similar to database triggers. They give extra flexibility. For example – Instead of Delete can in fact mark a row as deleted without deleting a database row. The “Instead” procedures can also disallow performing DML operations or add extra database processing to UI events.

# Properties View - Item



Property	Value
Basic	
Database Item	Yes
Name	ORDER_ID
DataBase	
Auto Query	No
Column Name	ORDER_ID
Query Allowed	Yes
Query Only	No
Returnable	No
Functional	
Datatype	Oid Number
Default Value	
Insert Allowed	Yes
LOV Call	
Master Item	ORDERS.ID
Maximum Length	<>
Navigable	ORDERS.CUSTOMER_ID
Required	ORDERS.ID
Tab Index	
Update Allowed	Yes
Screen	
Label	Order Id
Tooltip	
Visible	No
Width	50

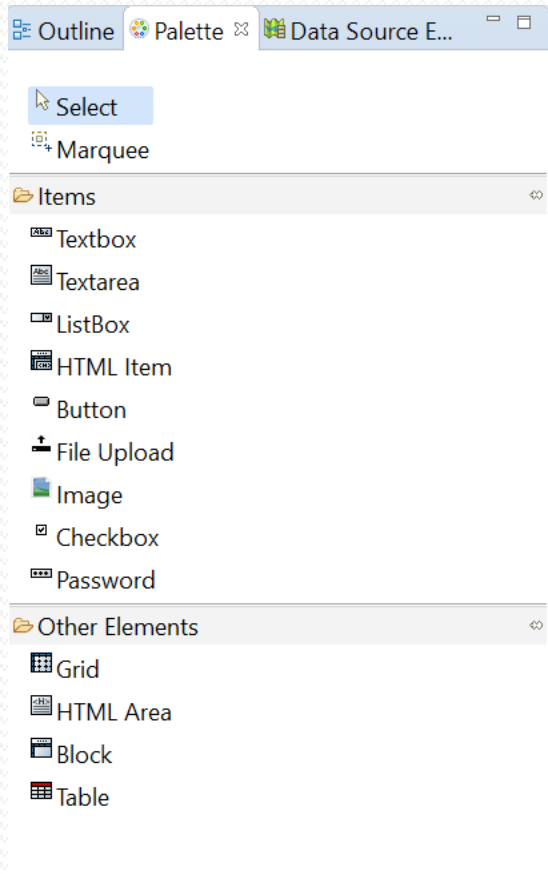
Item is a client object that corresponds to a database column

- **Master Item** – each item can have a master item, an Item in the master block. This allows to express arbitrarily complex master-detail relationships between blocks

# Properties View – Item

- **Query Only** – if set to yes then the item belongs only to Query table (not to DML table). Because of this Query Only Item does not take part in DML operations.
- **Returnable** – Similar to SQL return column. After any DML operation this item is returned to the client.
- **Tab Index** – programmer can statically arrange any sequence of cursor navigation. The programmer can dynamically set next navigation item and also force cursor navigation using:  
`set_item_property(next_item,'BLOCK_NAME.ITEM_NAME');`
- **LOV call** Programmer can specify the name of a Form with parameters. This turns Textbox into a List Item.

# Tool Palette



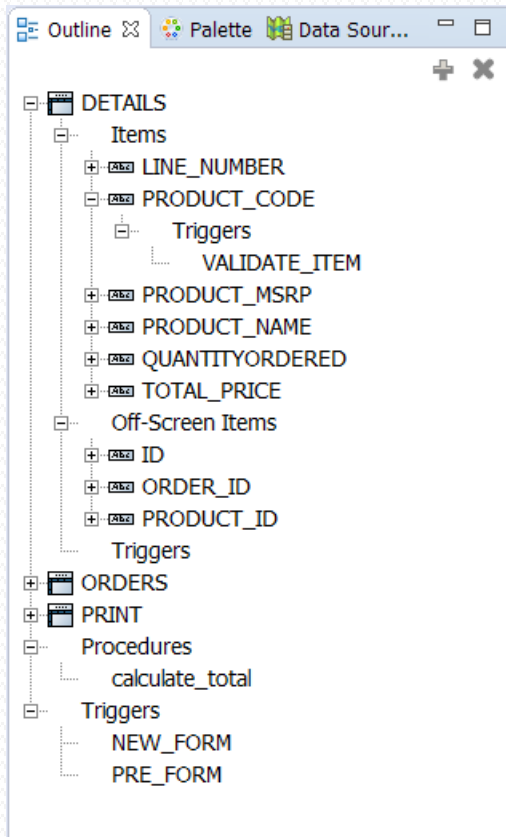
Tool Palette serves to create/select screen elements

It has two layout elements:

- **Grid** – to place other elements in HTML table
- **Table** – to place other elements in a table of horizontal rows (spreadsheet like)



# Outline View



Tree structure of the form. Using it the programmer can see all the data elements of the form. Blocks, items and code

Through Outline View the programmer has also access to non UI elements:

- **Off-Screen items** – items that are never displayed
- **Triggers** – pieces of code reacting to client events
- **Procedures**

# MT Triggers Language

- Isolates the programmer from the complexity of asynchronous nature of screen interaction and AJAX calls
- No callbacks
- Close to PL/SQL . Key differences:
  - no SQL
  - additional constructs
  - case sensitive
  - datatypes

# MT Triggers Language

## Data Types of MT

- text
- number
- date (timestamp)
- oidn – encrypted number
- etext – encrypted text

## Main constructs

- Procedures
- Triggers
- Loops
- Conditionals
- Exceptions

# Trigger Types

Depending on the declaration level

# Example trigger

```
-- NEW_FORM
BEGIN
  set_title('CloudaIDE user manager');
  IF url_parameter('p_user') IS NOT NULL THEN
    e_mail_verification;
    RETURN;
  END IF;
  set_block_property('THANKS', visible, FALSE);
  IF url_parameter('email_user') IS NOT NULL THEN
    set_block_property('USER', visible, FALSE);
    set_block_property('PASSWORD_EMAIL', visible, FALSE);
    go_item('PASSWORD_CHANGE.PASSWORD');
    RETURN;
  END IF;
  set_block_property('PASSWORD_CHANGE', visible, FALSE);
EXCEPTION
  WHEN OTHERS THEN
    message_error(error_message);
END;
```

# Example procedure

```
PROCEDURE before_delete(p_id oidn) IS
BEGIN
  IF p_id IS NULL THEN
    RETURN;
  END IF;
  mr_dictionary_p.before_delete_test(p_id);
  confirm('Do you want to remove ?', TRUE);
  IF NOT success THEN
    RETURN;
  END IF;
  mr_dictionary_p.prune_bushes(p_id);
EXCEPTION
  WHEN OTHERS THEN
    message_error(error_message);
END;
```

# What the client-side code is?

- Single page architecture - everything is downloaded as a single page
- Javascript:
  - Creates HTML
  - Reacts for events
  - Executes AJAX to communicate with the server
- Downloaded once for a compilation
- Downloaded incrementally – minimizing initial download
- Javascript Gateway – lets mix Javascript and MT.

# What the client-side code is?

- This way screen layout and behaviour is supplied to the client only once.
- The main network traffic after initial download is data.
- The layout and behaviour code is cached on the client (until next release)



# Code splitting

- The application is built of forms
- Following this, code also is split into forms
- Code delivery to the client is split into engine (common functionality) initial download and form (on demand) downloads. This helps to minimize network traffic because no monolithic initial download is carried out and unused code never gets to a client
- Code is loaded in gzipped form (most browsers handle this)

# Report integration

- ClouderaIDE is integrated with BIRT – Business Intelligence Reporting Tool
- ClouderaIDE can call a BIRT report using:
  - Parameters
  - SQL where phrase of a query last executed on a selected database block

# Report integration

```
-- BUTTON_PRESSED
BEGIN
  post;
  IF NOT success THEN
    RETURN;
  END IF;
  IF :print.kind = 'D' THEN
    IF :orders.id IS NULL THEN
      message_error('Please select order to print');
      RETURN;
    ELSE
      run_report(mv_order, :orders.id);
    END IF;
  ELSE
    run_report(mv_order, NULL) criteria_block orders;
  END IF;
EXCEPTION
  WHEN OTHERS THEN
    message_error(error_message);
END;
```

- In the last case a programmer can use the clause in a query in the report
- The execution of the report is protected by a checksum and can be carried out only once for a call

# Security

- Built-in authentication:
  - Table
  - Database Account
  - CAS
- Authorizations – definable by the administrator
- Data processing protection
- Data protection

# Data processing checks

- The application server knows application metadata. No direct SQL statements, phrases and procedure calls are passed to the server. Everyone of those are handled indirectly against application metadata

# Lists of Values

## Realized as forms

- Items of called form bound to Calling form items by a naming convention
- Automatic (in the background) selection of a list element (item List validable property)
- Possibility to enter missing list elements on the fly
- Using the list to drill/navigate data – after the selection is made

Outline

- DETAILS
- ORDERS
  - Items
    - COMMENTS
    - CUSTOMER\_ADDRESSLINE1
    - CUSTOMER\_ADDRESSLINE2
    - CUSTOMER\_CITY
    - CUSTOMER\_COUNTRY
    - CUSTOMER\_NAME
    - CUSTOMER\_POSTALCODE
    - CUSTOMER\_STATE
    - ORDER\_DATE
    - ORDER\_NUMBER
    - REQUIRED\_DATE
    - SHIPPED\_DATE
    - STATUS
  - Off-Screen Items
    - CUSTOMER\_ID
    - ID
  - Triggers
  - PRINT

Package Explorer

- extras
- gwt-unitCache
- misc\_files
- mroovka
  - \_\_LoginForm.formica
  - AAAMain.formica
  - Administration.formica

Orders.formica

Form: Orders

Block: ORDERS

Block: PRINT

PRINT KIND

ORDER\_N... ORDER\_D... REQUIRE... SHIPPED... STATUS

CUSTOMER\_NAME CUSTOMER\_CITY CUSTOMER\_ADDRESSLINE1 CUSTOMER\_ADDRESSLINE2 CUSTOMER\_STATE CUSTOMER\_POSTALCODE CUSTOMER\_COUNTRY

COMMENTS

Design | No Script

Properties

Property	Value
Basic	
Database Item	Yes
Name	CUSTOMER_NAME
DataBase	
Auto Query	No
Column Name	CUSTOMER_NAME
Ignore Case	Yes
Query Allowed	Yes
Query Only	Yes
Returnable	No
Functional	
Case Conversion	None
Datatype	Text
Default Value	
Format Mask	
Insert Allowed	Yes
List Validable	Yes
LOV Call	Customers
Master Item	<>
Matching	Contains
Navigable	Yes
Required	Yes
Tab Index	5
Update Allowed	Yes
Screen	
Label	Customer Name
Tooltip	
Visible	Yes
Width	30

Outline

- CUSTOMERS\_V
  - Items
    - ADDRESSLINE1
    - ADDRESSLINE2
    - CITY
    - CONTACT\_FIRST\_NAME
    - CONTACT\_LAST\_NAME
    - COUNTRY
    - CREDIT\_LIMIT
    - NAME
    - PHONE
    - POSTALCODE
    - SALESREP\_NAME
    - STATE
  - Off-Screen Items
    - ID
    - SALESREP\_ID
  - Triggers
  - Procedures
  - Triggers

Package Explorer

- extras
- gwt-unitCache
- misc\_files
- mroovka
  - \_\_LoginForm.formica
  - AAAMain.formica
  - Administration.formica

Orders.formica Customers.formica

Block: CUSTOMERS\_V

Table

NAME

CONTACT\_LAST\_NAME CONTACT\_FIRST\_NAME PHONE ADDRESSLINE1 ADDRESSLINE2 CITY STATE POSTALCODE COUNTRY CREDIT\_LIMIT SALESREP\_NAME

Design | No Script

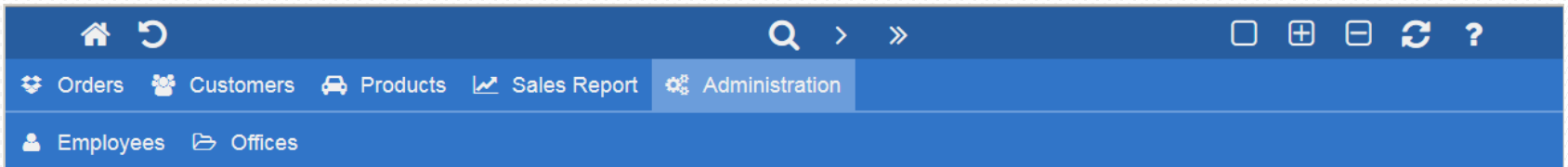
Properties

Property	Value
Basic	
Database Item	Yes
Name	SALESREP_NAME
DataBase	
Auto Query	No
Column Name	SALES_REP
Ignore Case	Yes
Query Allowed	Yes
Query Only	Yes
Returnable	No
Functional	
Case Conversion	None
Datatype	Text
Default Value	
Format Mask	
Insert Allowed	Yes
List Validable	Yes
LOV Call	EmployeeList
Master Item	<>
Matching	Contains
Navigable	Yes
Required	No
Tab Index	0
Update Allowed	Yes
Screen	
Label	Sales Rep
Tooltip	
Visible	Yes
Width	30

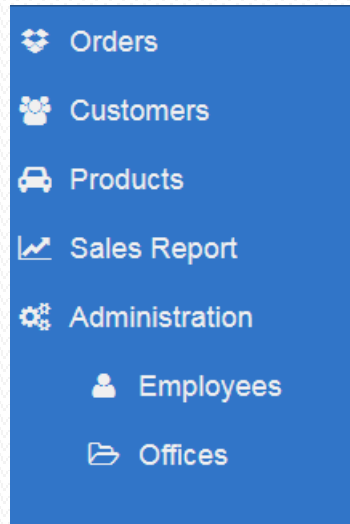
# Menus

- Come in two flavours:

- Vertical



- Horizontal



- Application – wide choice



# Menus

- Forms create stack
- Each Form can contribute options to the menu
- These options stay in the menu, until the form is closed
- If an option belonging to a particular form is clicked, all forms above the form are closed, with one exception
- An option resulting in opening a form stores reference to the opened form
- When clicked again the menu system closes all forms above the called form and displays the form opened by this option (not the one that has opened it). It gives an effect similar to a breadcrumb navigation

# Subsessions

CloudaIDE splits one JEE session into separate subsessions, holding most of their state on the client. Each browser tab is connected with different subsession

The image shows a screenshot of a CloudaIDE demo environment. It features three overlapping browser windows, each representing a different subsession of a single JEE session. The top-left window displays a 'Customers' page for 'Alpha Cognac', showing a list of customers and a detailed view for 'Alpha Cognac' with fields for contact information, address, and sales limit. The top-right window shows an 'Orders' page for 'Amica Models & Co.', displaying order details and a table of items including a Mercedes-Benz 500K Special Roadster and an Alfa Romeo 6C2300 Spider Sport. The bottom window shows another 'Orders' page for 'Eane Mini Imports', displaying order details and a table of items including a Ferrari Enzo and a Mercedes-Benz 500K Special Roadster. Each window has its own browser address bar and navigation controls, illustrating how state is maintained on the client side across different subsessions.

# Internationalization

- Internationalized texts in properties files to use in labels and messages through API call `i18n_message`
- This way provide multilingual applications
- Bidirectional UI (ltr/rtl) support

# International texts

```
I18nMessages_pl.properties ⌵  
home_menu = Menu Główne  
orders_button = Zamówienia  
order_number = Numer Zamówienia  
order_date = Data Zamówienia  
required_date = Data Wymagana  
shipped_date = Data Dostawy  
classic_models_demo = Program Demonstracyjny "Classic Models"  
data_scope=D,Wyświetlona,Q,Odszukane  
today_is = Dzisiaj jest {0,date,full}
```

```
I18nMessages_pl.properties I18nMessages.properties ⌵  
home_menu = Home Menu  
orders_button = Orders  
order_number = Order Number  
order_date = Order Date  
required_date = Required Date  
shipped_date = Shipped Date  
classic_models_demo = Classic Models Demo  
data_scope=D,Displayed,Q,Query Result  
today_is = Today is {0}
```

Screen	
Label	#order_number
Tooltip	
Visible	Yes
Width	14

Numer Zamówienia	10 434
Data Zamówienia	2011-01-06
Data Wymagana	2011-01-13
Data Dostawy	2011-01-10

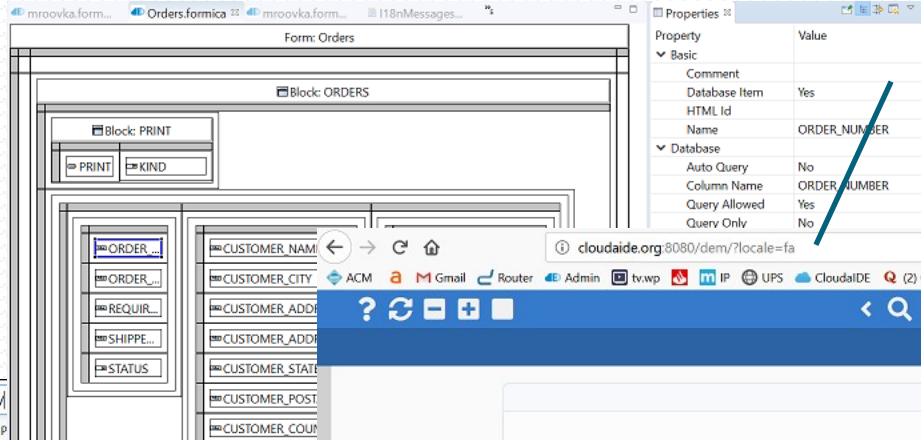
Order Number	10,434
Order Date	2011-01-06
Required Date	2011-01-13
Shipped Date	2011-01-10

API function - `i18n_message(today_is, sysdate);`

Dzisiaj jest wtorek, 26 czerwca 2018

Today is Tue Jun 26 17:03:51 GMT+200 2018

# Automatic Bidi layouts. Design - ltr. Runtime - ltr and rtl



/dem/?locale=fs

cloudaide.org:8080/dem/

Order #10434

Zamówienia  
Customers  
Products  
Sales Report  
Administration

Orders

Print Wyświetlona

Numer Zamówienia: 10 434  
Data Zamówienia: 2011-01-06  
Data Wymagana: 2011-01-13  
Data Dostawy: 2011-01-10

Line	Produc	10	11	12	13
1	S12_11	17	18	19	20
2	S18_13	24	25	26	27
3	S18_1749	28	29	30	31
4	S18_4409	3	4	5	6
5	S18_2949	7	8	9	10
6	S18_2625	11	12	13	14
7	S18_4409	15	16	17	18
8	S18_3232	19	20	21	22
9	S700_1993	23	24	25	26

22 323,52

cloudaide.org:8080/dem/?locale=fa

Order #10434

Orders

Customers  
Products  
Sales Report  
Administration

Customer Name: Baane Mini Imports  
City: Stavern  
Address line 1: Erling Skakkes gate 78  
Norway

Customer Name: 10434  
City: 2011-01-06  
Address line 1: 2011-01-13

Order Number: 10434  
Order Date: 2011-01-06  
Required Date: 2011-01-13  
Shipped Date: 2011-01-10  
Status: 1

Total Price	Quantity	Price	Name	Code	Line
1.000,00	1	1.000,00	2001 Ferrari Enzo	08	1
2.000,00	2	1.000,00	1936 Mercedes-Benz 500K Special roadster	08	2
3.000,00	3	1.000,00	1917 Grand Touring Sedan	S18_1749	3
4.000,00	4	1.000,00	1932 Alfa Romeo 8C2300 Spider Sport	S18_4409	4
5.000,00	5	1.000,00	1913 Ford Model T Speedster	S18_2949	5
6.000,00	6	1.000,00	1936 Harley Davidson El Knucklehead	S18_2625	6
7.000,00	7	1.000,00	1932 Alfa Romeo 8C2300 Spider Sport	S18_4409	7
8.000,00	8	1.000,00	1992 Ferrari 360 Spider red	S18_3232	8
9.000,00	9	1.000,00	1993 Suzuki Sidekick	S700_1993	9

User

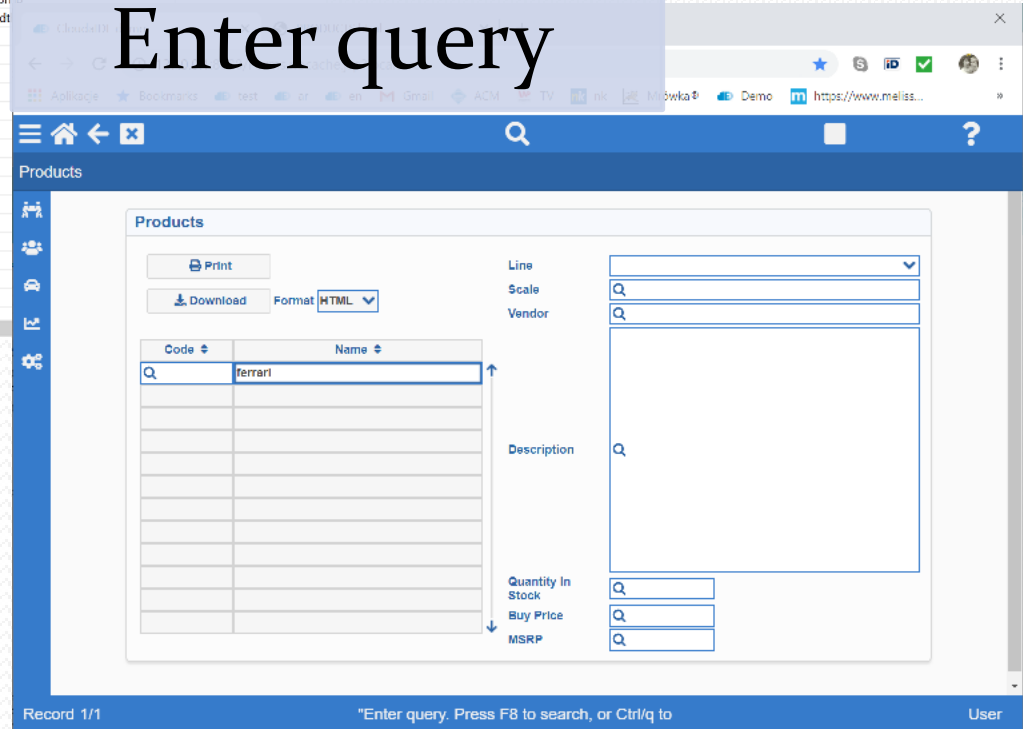
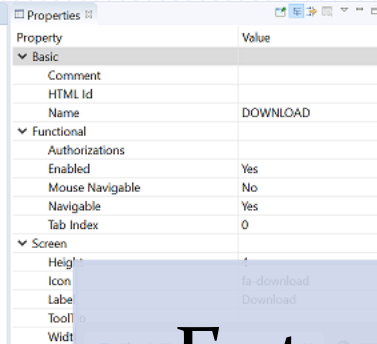
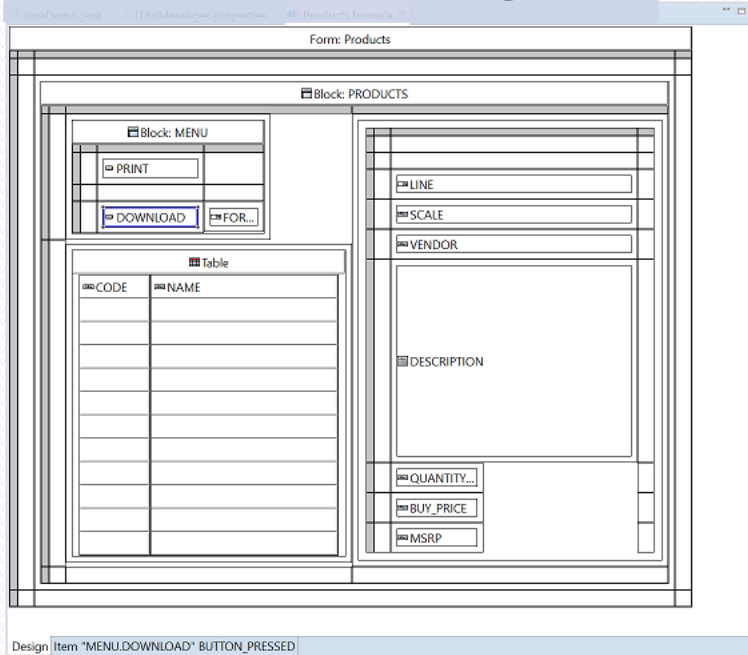
22 323,52

Rekord 1/?

Użytkownik

# HTML and CSV database data download

## Screen design



# HTML and CSV database data download

Sorted query (QBE)  
result

The screenshot shows a web browser window with the URL 127.0.0.1:8888/Forms.nocache.jsp?locale=en. The page title is "2001 Ferrari Enzo". The main content area is titled "Products" and contains a table with two rows. The second row is selected, showing the product "2001 Ferrari Enzo" with code "S12\_1108". To the right of the table, there are several fields: "Line" (Classic Cars), "Scale" (1:12), "Vendor" (Second Gear Diecast), "Description" (Turnable front wheels; steering function; detailed interior; detailed engine; opening hood; opening trunk; opening doors; and detailed chassis.), "Quantity In Stock" (3,619), "Buy Price" (95.59), and "MSRP" (207.80). The bottom of the page shows "Record 2/2" and "User".

HTML download

The screenshot shows a web browser window with the URL D:/Downloads/PRODUCTS%20(1).html. The page contains a table with the following data:

Code	Name	Description
S18_3232	1992 Ferrari 360 Spider red	This replica features opening doors, superb detail and craftsmanship, working steering system, opening forward compartment, opening rear trunk with removable spare, 4 wheel independent spring suspension as well as factory baked enamel finish.
S12_1108	2001 Ferrari Enzo	Turnable front wheels; steering function; detailed interior; detailed engine; opening hood; opening trunk; opening doors; and detailed chassis.

CSV download

The screenshot shows a spreadsheet application with the following data:

CODE	NAME	DESCRIPTION
S18_3232	1992 Ferrari 360 Spider red	This replica features opening doors, superb detail and craftsmanship, working steering system, opening forward compartment, opening rear trunk with removable spare, 4 wheel independent spring suspension as well as factory baked enamel finish.
S12_1108	2001 Ferrari Enzo	Turnable front wheels; steering function; detailed interior; detailed engine; opening hood; opening trunk; opening doors; and detailed chassis.

# „host” API call

- Passes encrypted command line to the server for execution. This way only „server approved” commands are subject to execution



# „host” API call - example uses

- Preservation of legacy algorithms from any programming language
- Creation of pseudo report servers:
  1. Client requires a command line string that executes Oracle Reports Client/Server Runtime on the server
  2. Client sends the command line back to CloudaIDE server for execution
  3. Server runs the command line, saving pdf report in a temporary file, and returns the path of the pdf file to the client
  4. Client downloads the pdf file. This way you can save \$30k per processor if you own a C/S Oracle Reports runtime license
- Creation of web interfaces to do DBA (or other) tasks

# „Multiplying” application for SaaS

- Establish a name for business entity connection context, say:  
company\_id
- For all (almost) tables:
- Let a table name be „customers”
  1. Add a splitting column, say id\_firma for coherence
  2. Add a pre-insert trigger with the following statement:  
new.id\_firma=RDB\$GET\_CONTEXT('USER\_TRANSACTION',  
'id\_company')
  3. „Rename” the table to a new name, that is not used in the database, for example with some prefix to eg. basic\_customers. Extend all (or almost all, at least unique) indices with the id\_company column in front
  4. Create a view „customers”, that contains all columns of the former customer table and the following where clause  
id\_firma=RDB\$GET\_CONTEXT('USER\_TRANSACTION',  
'id\_company')

# „Multiplying” application for SaaS

- Extend your application, so that it was possible to tell, what is the `company_id` value for every user connection. In simplest case you can add such column to users table and use the user specific value
- In the CloudaIDE application add `company_id` (encrypted) context parameter. Set it in a form trigger. Since then every database request from this connection will start with setting the value of `company_id` context variable, without programmer intervention
- These modifications let you continue your C/S software development simultaneously with „multiplied” web version on the same database structures



Success stories

**Migration project**

Powerplant

Tuzla, Bosnia and Herzegovina

# Migration project – Powerplant

**Šifarnik hardware**

**Grupa**

Šifra	Naziv
01	Front End[s]
02	Serveri
03	Mreža
04	TK oprema
05	Oprema za sisteme upravljanja energetskim sistemom
06	IKT infrastruktura

**Podgrupa**

Šifra	Naziv
01	Računari
02	Laptopi
03	Štampači
04	Personal Digital Assistants (PDA)
05	Skeneri
06	Multifunkcionalni uređaji (fax,kopir,skener i printer)

**Uređaj**

Sifra Mat	Naziv Mat	
01010001	Računar HP7900 SFF Core2Quad Q9650	Nesist
01010002	Računar HP7400 MT Core2Duo E4500	Nesist
01010003	Računar HP7800 SFF Core2Quad Q9300	Nesist
01010004	Računar HP7900 SFF Core2Quad Q9400	Nesist
01010005	Računar Dual 2,2GHz, 512Mb RAM, HDD 160 GB	Nesist

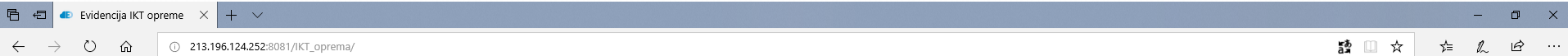
**Standardni hardware na uređaju**

Naziv
Procesor-CPU Intel-Core2Quad 3,0 GHz
Hard disk-SATA-160 GB
RAM Memorija-DDR-2 GB
Matična ploča-Hewlett-Packard-3031h
DVD/CD ROM Drive-DVD ROM-Interni DV
Procesor-CPU Intel-Core2Quad 3,0 GHz
Hard disk-SATA-160 GB
RAM Memorija-DDR-2 GB
Matična ploča-Hewlett-Packard-3031h
DVD/CD ROM Drive-DVD ROM-Interni DV

**Standardni software na uređaju**

Naziv
Sistemski softver-Operativni sistem-Win

# Migration project – Powerplant



- Knjiženje
- + Prijem robe
- Izdavanje robe
- Povrat robe
- Prenos robe
- Rashod
- Servis
- Pregledi
- Pregledi sve podružnice
- Šifarnici
- Applications

Spisak primki

HTML Download

...	Broj Dok	Datum	Broj Ug	Naziv	Proizvodjac	Isporucilac	
	00005/2019-10204	06.05.2019		Huawei Mate 20 Lite	Huawei	BH Telecom Direkcija Tuzla	N
	00001/2019-10204	17.04.2019		Laptop HP probook 450 G5	HP	BH Telecom	D
	00004/2019-10204	17.04.2019		CAT B30	CAT	BH Telecom	N
	00003/2019-10204	17.04.2019		LG Q7	LG	BH Telecom	N
	00002/2019-10204	17.04.2019		Huawei Mate 20 Lite	Huawei	BH Telecom	D
	00001/2018-10204	29.03.2018		Telefon-A Panasonic KX-	Panasonic		D
	00002/2017-10204	31.07.2017	247-JP/14	Telefon IP Yealink SIP-T42G	ISKRATEL	ISKRATEL doo Kranj	D
	00001/2017-10204	19.06.2017	Aneks 1060925	CAT B30	Caterpillar	BH Telecom	D
	00002/2016-10204	31.10.2016		Kopir aparat Canon IR 3225n	Canon		D
	00004/2016-10204	31.10.2016		Kopir aparat Canon IR 4035i	Canon		D
	00003/2016-10204	31.10.2016		Kopir aparat Canon IR 4035i			D
	00001/2016-10204	12.04.2016	4600007945	Monitor Philips S-line 20"	Philips	R&S	D
	00021/2015-10204	24.12.2015	293-JP/15	Računar Lenovo ThinkCentre	Lenovo	KODEKS Sarajevo	D
	00020/2015-10204	03.11.2015		Monitor HP L1750			D
	00019/2015-10204	03.11.2015		Računar HP7800 SFF			D
	00018/2015-10204	03.11.2015		Štampač KYCERA FS-2020D			D
	00017/2015-10204	17.06.2015	4600005361	Skener Canon DR-6030C	Canon	"MIT ALEX" Tuzla	N
	00015/2015-10204	21.05.2015	4600005965	Monitor LCD 42 (TV)	Philips	R&S d.o.o. Sarajevo	D
	00016/2015-10204	21.05.2015	4600005965	Monitor LCD 55 (TV)	Philips	R&S d.o.o. Sarajevo	D
	00011/2015-10204	12.05.2015	30-TETZ/15	Motorola GM360(mobilna)	Motorola	Hidraulika "Hukić" d.o.o.	D

+ New

http://www.msn.com/en-xl/lifestyle/celebs/glamour-shots-of-1960s-stars/ss-AAIBUby

# Migration project – Powerplant

Evidencija IKT opreme Registracija prolazaka kroz Registracija prolazaka k

213.196.124.252:8081/Registracija\_ul\_iz/

## Radnici

### Naši radnici

Šifra   Printaj

Prezime	<input type="text"/>	Ime	<input type="text"/>	Mjesto prebivališta, adresa	<input type="text"/>
JMBG	<input type="text"/>	Državljanstvo	<input type="text"/>	Spol	<input type="text"/>
Datum rođenja	<input type="text"/>	Mjesto, općina, drž.rođenja	<input type="text"/>	Stož osig.računa se s uveć.trajanjem	<input type="text"/>
Školska sprema	<input type="text"/>	Stručni ispit	<input type="text"/>	Potrebno preth. i red. utvrđivanja rad.sposobnosti	<input type="text"/>
Br.ug o radu	<input type="text"/>	Dat.zaklj.ug o radu	<input type="text"/>	Dodatno obrazovanje	<input type="text"/>
Dat.poč.radnog odnosa	<input type="text"/>	Mjesto rada	<input type="text"/>	Kvalifikacija	<input type="text"/>
Prima se na	<input type="text"/>	Očekivano trajanje ugovora(do)	<input type="text"/>	Vrij.trajanja prob.rada	<input type="text"/>
Dat.polag. priprav.ispita	<input type="text"/>	Rezultat pripravnčkog ispita	<input type="text"/>	Prethodni radni staž(mjeseci)	<input type="text"/>
Dat.prest. rad.odnosa	<input type="text"/>	Razlog prestanka radn.odnosa	<input type="text"/>	Prethodni penzioni staž(mjeseci)	<input type="text"/>
				Vrijeme mirov.rad. odnosa(mjeseci)	<input type="text"/>

Dozvola boravka (za strance)

Uvjerenja / Certifikati

### Tekući radni staž

Od	Do	Radno mjesto	Napomena (npr. država i mjesto rada, u slučaju upućivanja radnika u inostranstvo)

Upload File

Printaj propusnice (format slike treba biti u jpg ili bmp formatu)

# Success stories

## **New project development**

Factory, Shop floor  
management system

India



# New project development Factory, Shop floor management system



## **CLoudAIDE Framework** **Web Framework For Database Developers**

### **WHY Oracle Forms to CLOUDAIDE ????**

- MROOVKA Programming Language, **subset of PL/SQL** & DB Programming Language
- Developers need **No Java or No JavaScript** knowledge either
- Applications work **100% AJAX, HTML5/ Reacts for Events / JavaScript**
- Supports Default **CRUD handling of blocks** like oracle forms
- 3 Level of **Triggers at Form / Block and Item** Level and **Client side Procedures**
- Supports **Table or Form Layouts** for blocks
- Supports **Query By Example (QBE)** - F7/F8 - Enter query/Execute Query
- LOV – List of Values, validate from List property
- Runs on the **Apache Tomcat application** server
- CloudaIDE Applications work in **all Browsers** by Default
- CloudaIDE is **cross platform** like Oracle Forms
- CloudaIDE development framework and structure is **very Much Like Oracle Forms**
- CloudaIDE is today, the **most powerful alternative** for oracle forms developers
- CloudaIDE is integrated with BIRT – **Business Intelligence and Reporting Tool**
- Security – **Protection against injection SQL and code splitting**
- Object protection **through source encryption** and independent application metadata
- **Record Locking** – Connection pooling, Last in wins, Optimistic Locking
- Menus – **Horizontal and Vertical** menu options



# New project development

## Factory, Shop floor management system



### Order Processing / Production / Inventory / Dispatch Management Module

#### MASTERS

- Customer Groups
- Customer Master
- Product Master
- SKU Master
- Vehicle Master
- Brand Master
- PackingMaster
- Operator Master
- Transport Master
- Shipping Modes
- User Master
- UOM Master

#### TRANSACTION SCREENS

- Production Order Query / Entry
- Delivery Order Query / Entry
- Dispatch Query
- Stock Status Query
  - Product Wise
  - SKU Wise
  - Fragrance Wise
- Order Status Screen
- FG Production Status
- Floor Stock Status

#### REPORTS

- Customer Master Report
- Vehicle Master Report
- Product Master
- SKU Master
- Production Order Document
- Production Order Register
- Delivery Order Document
- Deliver Order Register
- Dispatch Document
- Dispatch Register
- Current FG Stock Report
- Floor Stock Report
- Order Pending Report
- Daily Production Report
- Daily Dispatch Report
- Dispatch Packing List

00:04:22



**SMART**  
www.weighing.in

00:05:33



# New project development

## Factory, Shop floor management system



### SHOP FLOOR - CAPTURE OF DATA IN REAL TIME

#### Hardware Options



**END OF LINE LABELLING TERMINAL**



**TERMINAL without Weighing**



- 1D
- 2D
- CCD
- CMOS
- Laser
- Android
- Buckets
- 4.0"
- Color
- IP65
- 1.2M DROP
- 4G
- WiFi
- Bluetooth
- GPS
- Camera
- Micro SD
- USB
- 3700mAh

**Handheld Computer without Weighing & Printer**

**SMART**  
www.weighing.in



00:05:22

Testimonial CloudIDE Short

00:04:33



# New project development Factory, Shop floor management system

SMART - Web Application | 127.0.0.1:8888/Forms.nocache.jsp

CUSTOMER SALES ORDER | MODE:FORM USER:JS VIEW:Y INSERT:Y EDIT:Y DELETE:N

STATUS: OPEN  APPROVED  REVISED  CLOSED  CANCEL

**CUSTOMER ORDER**

Sale Order No:	Rev.	Customer	Short Code	Customer PO#	PO Date	Status	Created By	Created On
SO/1910/60	0	ARIHANT MTL	ARIHANT MTL	0	01-10-2019	Approved	SONAL	01-10-19 16:13
SO/1910/59	0	SOHAN IND.	SOHAN IND.	0	01-10-2019	Approved	SONAL	01-10-19 11:37
SO/1910/58	0	QUBIX ENT	QUBIX ENT	0	01-10-2019	Approved	SONAL	01-10-19 11:37
SO/1910/57	0	HAYER STANDA	HAYER STANDARD	872	01-10-2019	Approved	SONAL	01-10-19 11:37

Customer Name: ARIHANT METAL | Modified On: 2019-10-01 | Modified By: BG

**SALE ORDER AUDIT LOG**

Seq	Last Action	On
1	APPROVED: 1803 / 01OCT19 17:34	01-10-19 17:34

**ORDERED ITEMS / DETAILS**

Seq	SKU	Grade Code	Size	Spec Code	Spool Code	End App Tag	Reqd By Date	Price Per kg	Ordered Qty kg	Item Amount	Qty +/- %	WO Alloc Qty kg	Pend. Qty kg
1	201-4.350-040159	201	4.350 MN	040159	C600	FAST.	01-10-19	1.00	1,000.00	1,000.00	0.00	1,000.00	0

Remarks: | SPEC DTLS: SF + BT + 65-85 | SKU NAME: 201-4.35 FASTENER | Created By: SONAL | Created On: 01-10-19 16:13

**UNIT WISE - WORK ORDERS**

UNIT	Work Order#	WO Date	WO Qty Wt (kg)	Status
B3	W1/1910/110	01-10-19	1,000.00	Pending

**WORK ORDER AUDIT LOG**

Seq	Last Action

Remarks: |

Success stories

**New project development**

Factory, Shop floor management  
system

**WATCH**

<https://www.youtube.com/watch?v=sekjPSZRHR0>



**Cloudaide.org**