

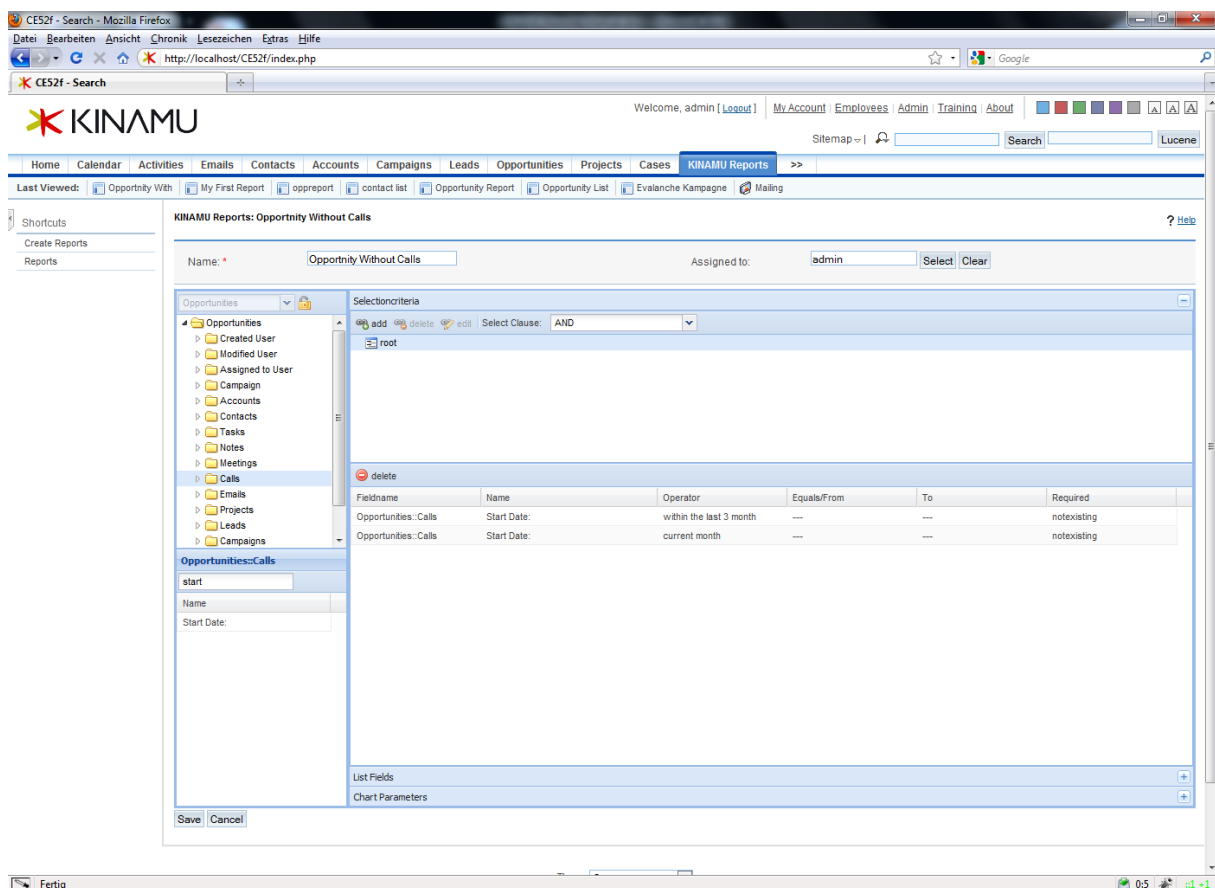
## Advanced reporting Settings

There are numerous advanced settings and options for the reporting that can be used to generate specific results.

### The Not Exists Selection Clause

Within the Selection Clause you cannot only specify certain criteria but in the last column also specify if the selection should be “*required*” or “*notexisting*”. *required* which is the default settings treats this as a normal condition where the value is checked against a match. If you select *notexisting* the system selects only those entries where the related entry does not exist. This might be handy if you e.g. search for Customers that do not have a certain product or contacts without an email address or like in the following example Opportunities that do not have a call within a certain time period.

As an Example we want to create a report on Opportunities that do not have a call Scheduled. To do that create a new report from the menu, name it “*Opportunities without calls*”, select Opportunities as the report module. Then open the related modules and select calls. Pick the “*Start Date*” from the Field list and add it to the root selection group. In our case we want to add it twice. For the first entry we specify the operator “*within the last 3 month*” (since the field is a date field certain date related options are offered) and for the second entry we select “*current month*”. For both entries select “*notexisting*” in the Required Column.



Screenshot 16 - the notexists clause

Got to the List Fields and select the Opportunity Name, the Sales Stage, the Amount as well as the last name, first name and user name of the assigned user to the opportunity. Hit save and look at the

Results which should show you a list of opportunities without a call in the last three month or in the current month.

### Basic Grouping of Results

In the List View Section you can Group Results. Depending on the Output Format you decide on the Results will look different. Lets first cover basic Grouping using the Report we did use before on the Opportunities without Calls.

The Result for our very basic report did look as follows.

The screenshot shows the KINAMU Reports interface in a Mozilla Firefox browser. The page title is "KINAMU Reports: Opportunity Without Calls". The interface includes a navigation bar with links like Home, Calendar, Activities, Emails, Contacts, Accounts, Campaigns, Leads, Opportunities, Projects, Cases, and KINAMU Reports. A sidebar on the left shows "Shortcuts" and "Create Reports". The main content area displays a table with the following data:

| Opportunity Name     | Sales Stage         | Amount | First Name | Last Name     | User Name |
|----------------------|---------------------|--------|------------|---------------|-----------|
| Reporting Opp        | Value Proposition   | 18000  |            | Administrator | admin     |
| Q2 Opportunity       | Needs Analysis      | 21000  |            | Administrator | admin     |
| CRM                  | Needs Analysis      | 10000  |            | Administrator | admin     |
| CRM Opportunity      | Qualification       | 18000  | Christian  | Knoll         | knoll     |
| prospecting Q1       | Prospecting         | 8000   |            | Administrator | admin     |
| Test Opp zum Kontakt | Prospecting         | 10000  |            | Administrator | admin     |
| CRM2                 | Id. Decision Makers | 25000  |            | Administrator | admin     |
| test                 | Prospecting         | 20000  |            | Administrator | admin     |
| Another Opportunity  | Id. Decision Makers | 35000  |            | Administrator | admin     |

At the bottom of the screenshot, there is a footer with the following text:

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Screenshot 17 - basic Reporting Results

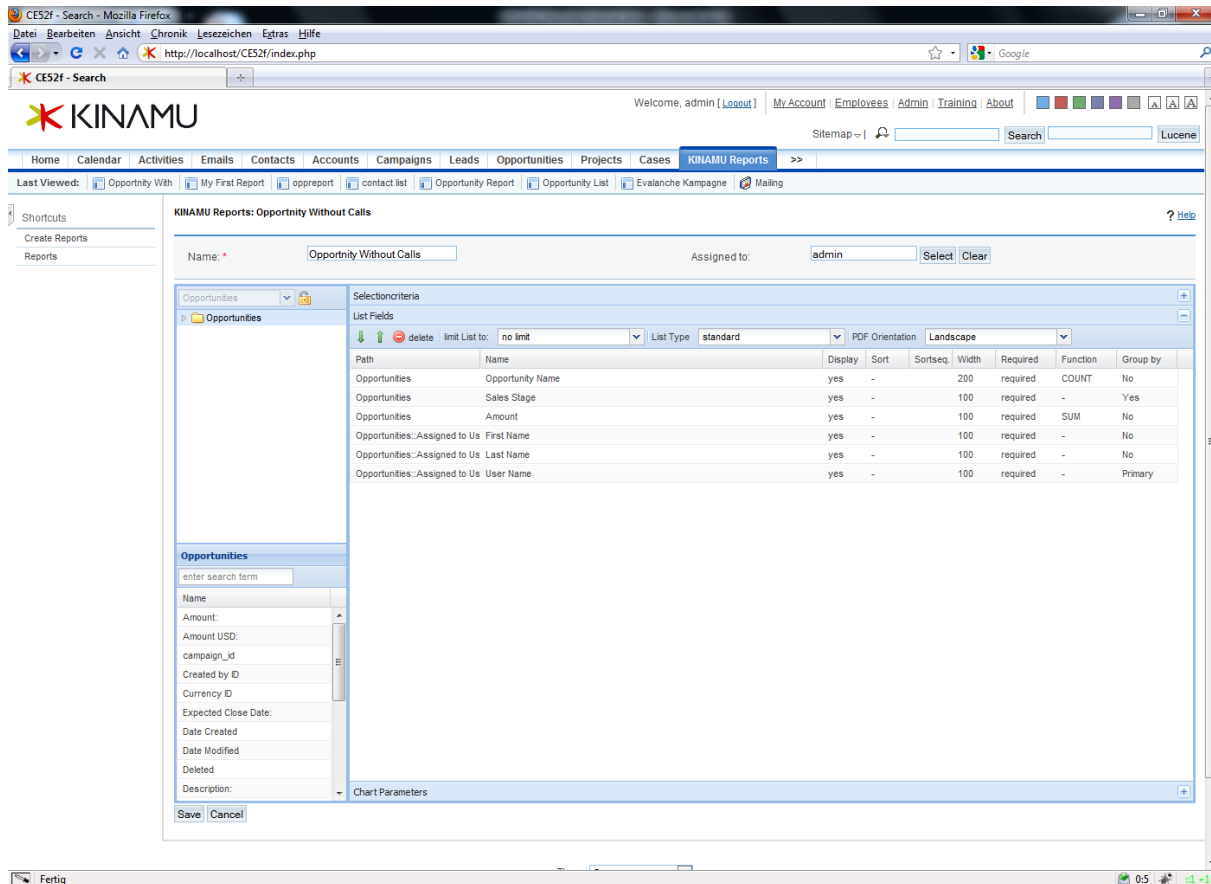
Let's assume we want to have a simple count of opportunities as well as the total amount per user and Sales Stage in a list form. To manage such a request edit the report definitions and go to the List Fields Definitions. The last two columns are *Function* and *Group by*. In our case we want to group by *User Name*. To define this Grouping select the group by field and select *Primary*. Then select the Sales Stage and select *Yes* as a Grouping Option. The differentiation of the primary and basic grouping option will be required if we also want to have a grouped view which we will cover later.

To add the Count of Opportunities click the Function Column for the Opportunity Name Field and select the Function "*COUNT*". For the total Amount in that Grouped View click the Function Column for the Amount Field and select "*SUM*".

To apply Grouping you will need to understand what you are doing. The System will not do any checks for you but request that if you group you will most likely also need some functions to be performed. With the Grouping option you can easily create reports that do not produce any or not

meaningful results. On the other hand this is a powerful tool to analyze your data. In any case it will be best if you understand a little bit of SQL since you are basically interactively creating an SQL statement with the basic SQL Syntax for Grouping and some SQL Functions.

The List Definition screen should now Look as follows:



Screenshot 18 - Definition of Grouping and Functions

This will produce the following result. The list shows the Count of Opportunities as well as the total Amount grouped by User and Sales Stage.

KINAMU Reports: Opportunity Without Calls

Edit | Delete | Export to EXCEL | Export to PDF | Export to PDF w/o chart

| Opportunity Name | Sales Stage         | Amount | First Name | Last Name     | User Name |
|------------------|---------------------|--------|------------|---------------|-----------|
| 2                | Id. Decision Makers | 60000  |            | Administrator | admin     |
| 2                | Needs Analysis      | 31000  |            | Administrator | admin     |
| 3                | Prospecting         | 38000  |            | Administrator | admin     |
| 1                | Qualification       | 18000  | Christian  | Knoll         | knoll     |
| 1                | Value Proposition   | 18000  |            | Administrator | admin     |

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Screenshot 19 - Grouped result with functions

## Grouped views

A further Option for an enhanced Output is the option to specify different views for the Output. In the List Fields Definition Window select a different Output in the List Type Drop Down Box. The Options are “*standard*” for the normal Output, “*grouped*” for a normal grouped View or “*grouped w. summary*” for a grouped view that also has a summary line for each group.

For our report above select “*grouped*” and view the results which will look as follows.

KINAMU Reports: Opportunity Without Calls

Edit | Delete | Export to EXCEL | Export to PDF | Export to PDF w/o chart

| Opportunity Name                  | Sales Stage         | Amount | First Name | Last Name     | User Name |
|-----------------------------------|---------------------|--------|------------|---------------|-----------|
| <b>User Name: admin (5 Items)</b> |                     |        |            |               |           |
| Reporting Opp                     | Value Proposition   | 18000  |            | Administrator | admin     |
| Q2 Opportunity                    | Needs Analysis      | 21000  |            | Administrator | admin     |
| CRM                               | Needs Analysis      | 10000  |            | Administrator | admin     |
| prospecting Q1                    | Prospecting         | 8000   |            | Administrator | admin     |
| Test Opp zum Kontakt              | Prospecting         | 10000  |            | Administrator | admin     |
| CRM2                              | Id. Decision Makers | 25000  |            | Administrator | admin     |
| test                              | Prospecting         | 20000  |            | Administrator | admin     |
| Another Opportunity               | Id. Decision Makers | 35000  |            | Administrator | admin     |
| <b>User Name: knoll (1 Item)</b>  |                     |        |            |               |           |
| CRM Opportunity                   | Qualification       | 18000  | Christian  | Knoll         | knoll     |

Screenshot 20 - grouped View

The List above groups the entries by the Field flagged as primary. The secondary Grouping is not evaluated in this view (it might still be used in e.g. a Chart or other Report).

Go back to the List Fields Definition and change the Option for the View to *“grouped w. summary”*. Save the Report to see the Result which look similar but now also for the Fields with a Function assigned that Function is evaluated as a summary for the group.

**KINAMU Reports: Opportunity Without Calls**

Buttons: Edit | Delete | Export to EXCEL | Export to PDF | Export to PDF w/o chart

| Opportunity Name                  | Sales Stage         | Amount        | First Name | Last Name     | User Name |
|-----------------------------------|---------------------|---------------|------------|---------------|-----------|
| <b>User Name: admin (8 Items)</b> |                     |               |            |               |           |
| Reporting Opp                     | Value Proposition   | 10000         |            | Administrator | admin     |
| Q2 Opportunity                    | Needs Analysis      | 21000         |            | Administrator | admin     |
| CRM                               | Needs Analysis      | 10000         |            | Administrator | admin     |
| prospecting Q1                    | Prospecting         | 8000          |            | Administrator | admin     |
| Test Opp zum Kontakt              | Prospecting         | 10000         |            | Administrator | admin     |
| CRM2                              | Id. Decision Makers | 25000         |            | Administrator | admin     |
| test                              | Prospecting         | 20000         |            | Administrator | admin     |
| Another Opportunity               | Id. Decision Makers | 35000         |            | Administrator | admin     |
| <b>8</b>                          |                     | <b>147000</b> |            |               |           |
| <b>User Name: knoll (1 Item)</b>  |                     |               |            |               |           |
| CRM Opportunity                   | Qualification       | 18000         | Christian  | Knoll         | knoll     |
| <b>1</b>                          |                     | <b>18000</b>  |            |               |           |

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Screenshot 21 - grouped View with summary

Also in this case only the primary grouping is evaluated for the Display. The Option *“plain HTML”* is not implemented yet but most likely will be in the Future to simply produce Output in form of an HTML table.

### Definition of Custom reporting Fields

Not All Fields you might want to use in Reporting are necessarily defined as such on the Database within the SugarCRM Datamodel. The KINAMU reported allows for flexible Definition of custom additional Fields that can be used e.g. will be calculated in the report. Examples might be the concatenation of Fields e.g. Concatenate First Name and Last name into one Field or build a custom address Field for an Address Report rather than listing all Fields individually. Other typical Fields are e.g. a weighted Revenue for an Opportunity or a Field for the Quarter of the Opportunity to produce a Report by Quarter.

To define such a custom field create a custom vardef file for the module you want to define the Fields for. In our Example we want to add two reporting fields to the Opportunity Module to represent the weighted amount of the opportunity and also the closing quarter so we can produce a pipeline report on a quarterly basis.

For the weighted Amount create the following entry in a custom vardef file in *custom/extension/modules/Opportunities/Ext/Vardefs*:

```
$dictionary['Opportunities']['fields']['weighted_amount'] =
    array(
        'name' => 'weighted_amount',
        'vname' => 'LBL_WEIGHTED_AMOUNT',
        'source' => 'non-db',
        'type' => 'kreporter',
        'eval' => '$.amount * $.probability / 100'
    );
```

To Translate the Label you will also need to create a custom language entry for `'LBL_WEIGHTED_AMOUNT'` in our case since this will be the Label for the new reporter Field. The important facts are to define the source as *“non-db”* since this will tell Sugar to not create the Field on the Database when you hit repair after creating those Fields. The second important fact is to make the type *“kreporter”* since this will tell the KINAMU reporter to evaluate the Field during running the report. And last but not least the most important line the value *“eval”* in the Array. This is an SQL function that will be evaluated. The *“\$”* sign is a variable that will be replaced with the table name of the modules table (or the respective join if it is part of a relation), the remainder are field names as they are defined in the vardefs or resp. on the Database. So in this case during reporting the Report will evaluate the weighted amount by calculating *amount \* probability / 100*.

For the Closing Quarter as another example create an entry that looks as follows:

```
$dictionary['Opportunities']['fields']['expected_close_quarter'] =
    array(
        'name' => 'expected_close_quarter',
        'vname' => 'LBL_CLOSING_QUARTER',
        'source' => 'non-db',
        'type' => 'kreporter',
        'report_data_type' => 'varchar',
        'eval' => 'CONCAT (YEAR ($.date_closed), \'/Q\' , QUARTER ($.date_closed)) '
    );
```

In Addition you can also specify the *“report\_data\_type”* which will be used to determine the select options or possible values (e.g. for an enum field). In the example above the *date\_closed* Field in the Opportunity is evaluated and the year is concatenated with a *‘/Q’* and then the quarter of the *date\_closed*.

If you repair the module and then create a new Report you will be able to select the Fields and run a report. Create a simple report without selection criteria that list opportunities grouped by Quarter with the count on names and the sum on unweighted and weighted amount. To do that create a List Fields Definition that looks as follows.

| Path          | Name       | Display | Sort | Sortseq | Width    | Required | Function | Group by |
|---------------|------------|---------|------|---------|----------|----------|----------|----------|
| Opportunities | Quarter    | yes     | -    | 100     | required | -        | Primary  | No       |
| Opportunities | Name       | yes     | -    | 50      | required | COUNT    | No       | No       |
| Opportunities | unweighted | yes     | -    | 100     | required | SUM      | No       | No       |
| Opportunities | weighted   | yes     | -    | 100     | required | SUM      | No       | No       |

Screenshot 22 - basic Opportunity report with Custom Fields

Save the Report and view the Results which look as follows:

**KINAMU Reports: Basic Opportunity List**

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| Quarter                           | Name                 | unweighted | weighted |
|-----------------------------------|----------------------|------------|----------|
| <b>Quarter: 2009/Q3 (1 Item)</b>  |                      |            |          |
| 2009/Q3                           | Test Opp zum Kontakt | 10000      | 1000     |
|                                   | 1                    | 10000      | 1000     |
| <b>Quarter: 2009/Q4 (2 Items)</b> |                      |            |          |
| 2009/Q4                           | TestOpportunity      | 25000      | 4500     |
| 2009/Q4                           | test                 | 20000      | 2000     |
|                                   | 2                    | 45000      | 6500     |
| <b>Quarter: 2010/Q1 (6 Items)</b> |                      |            |          |
| 2010/Q1                           | Reporting Opp        | 18000      | 5400     |
| 2010/Q1                           | CRM                  | 10000      | 2500     |
| 2010/Q1                           | CRM Opportunity      | 18000      | 3600     |
| 2010/Q1                           | prospecting Q1       | 8000       | 800      |
| 2010/Q1                           | CRM2                 | 25000      | 10000    |
| 2010/Q1                           | ERP                  | 25000      | 12500    |
|                                   | 6                    | 104000     | 34800    |
| <b>Quarter: 2010/Q2 (2 Items)</b> |                      |            |          |
| 2010/Q2                           | Q2 Opportunity       | 21000      | 5250     |
| 2010/Q2                           | Another Opportunity  | 35000      | 14000    |
|                                   | 2                    | 56000      | 19250    |

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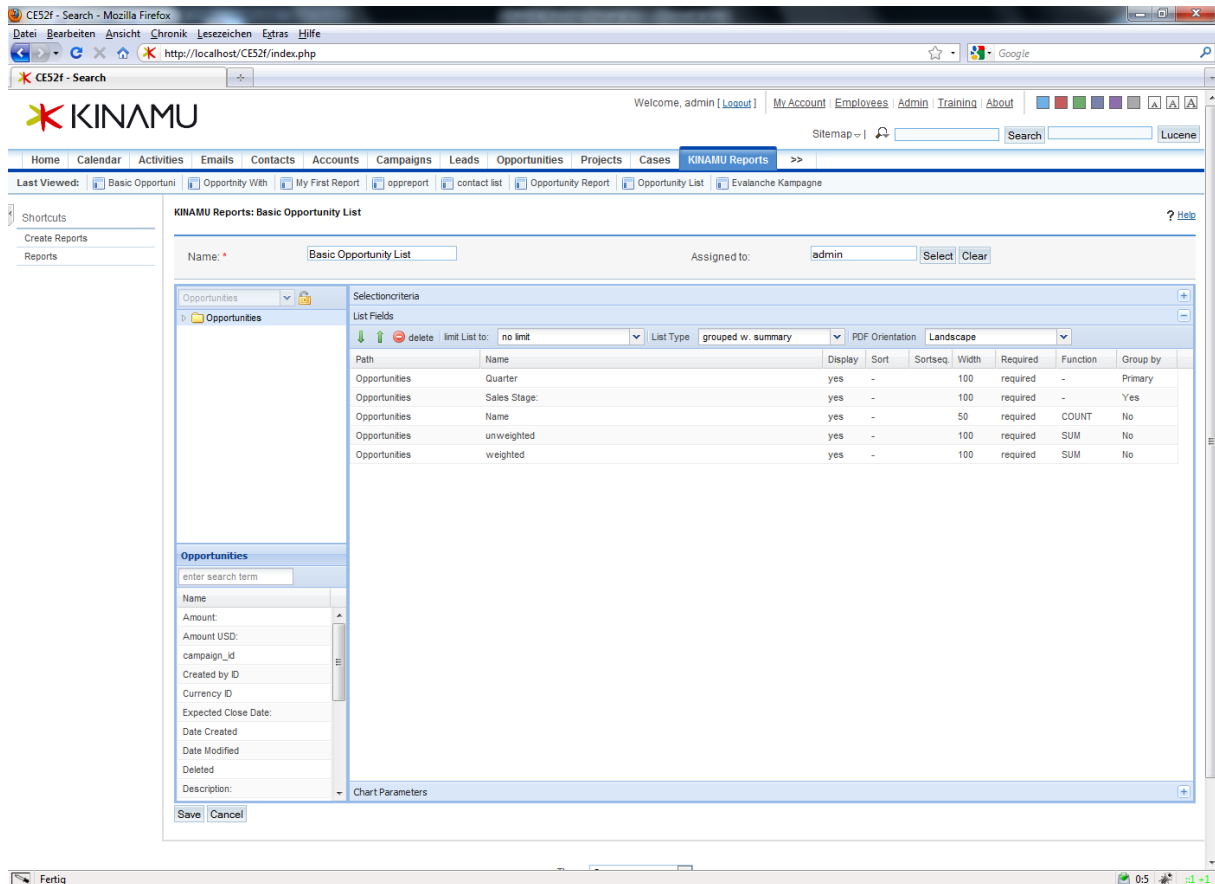
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Screenshot 23 - grouped report with calculated custom fields

With execution of the Report the Closing Date is converted to the Closing Quarter and the Weighted Amount is calculated. You can of course also use the custom fields in a selection clause.

## Adding Charts to Reports

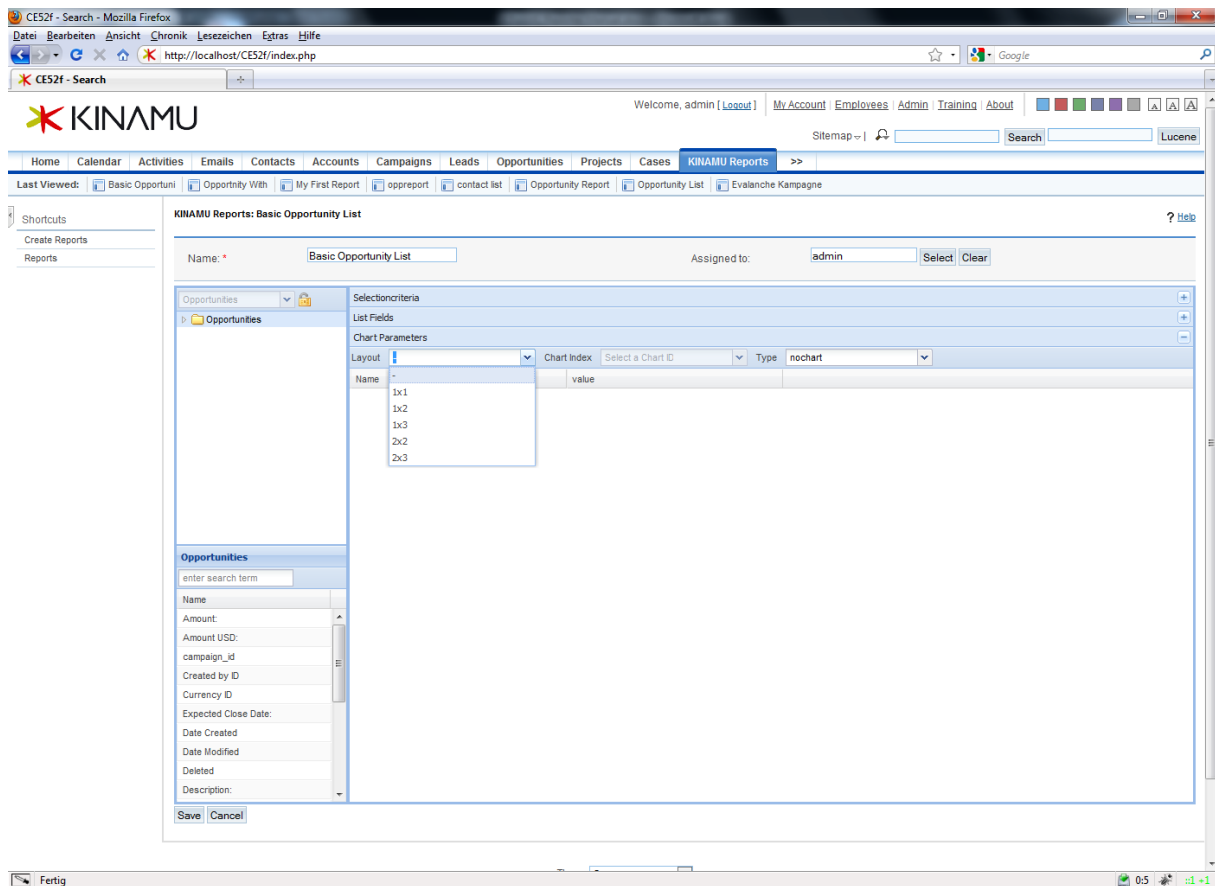
The KINAMU Reporter also allows flexible definition of Charts to be used to visualize Report Results. To add a Chart we will use the Report we just created for our custom fields but also add the Sales Stage. So the List Fields Section should look as follows:



Screenshot 24 - Example Report Definitions for Charting

To add one or multiple Charts to your Report select the Chart Parameters tab in the Report Definition Area.





Screenshot 25 - Chart Parameters Definition

To add a Chart first of all select a Layout Option. The KINAMU Reporter allows you to add multiple Charts to one report. In our example we want to add two charts and thus select the “1x2” Option which means two charts arranged next to each other. After selecting the Layout select the Chart Index and then for the selected Chart the Chart Type out of a list of Charts available. The Options are the typical known Chart Types. For Chart one we will select a “*stacked Column 2D*” Chart. With Selection of the Chart Type the various Options are populated in the Fields Area. Which Fields are visible is dependent of the chart Type selected. Some of the Options are generic and will be displayed for any charttype. The two always common Options are:

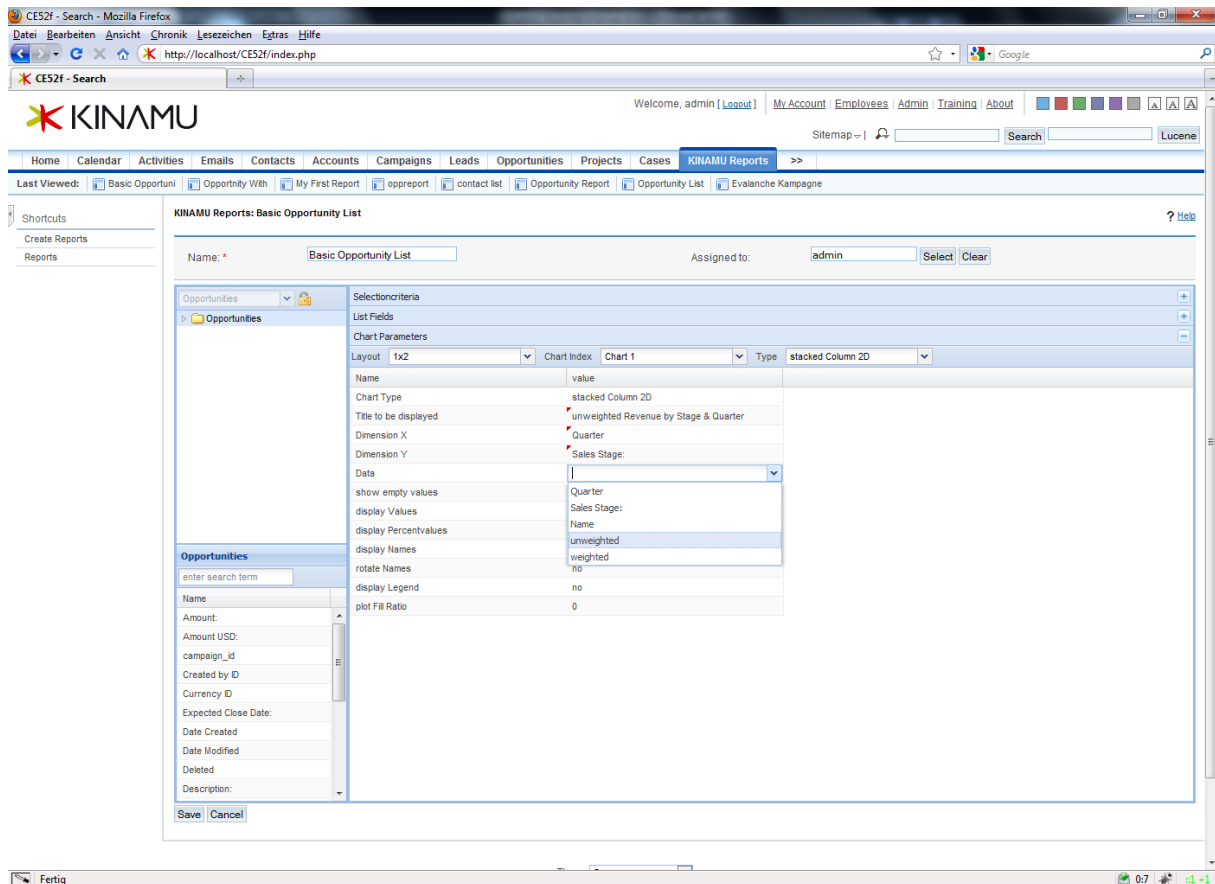
- Chart Type: the type Chosen which is a Field that cannot be edited in the Grid but only by changing the Value in the Toolbar of the Grid.
- Title to be Displayed: is a title that will be displayed for the Chart

The next set of Values is for the Data Dimensions and the Data Series. A simple Chart (like a PieChart) only has one Dimension, a multiseries Chart has (at least) two dimension.

- Dimension X: is the X axis of the Diagram
- Dimension Y: is the Y Axis in the multiseries stacked Chart
- Data: is the Data to be displayed

For the First Chart we want to make a stacked chart by Quarter with the sales stages stacked on top of each other showing the unweighted Amount.

If you click on the value Field for the Dimension and the Data it will allow you to select one of the Fields that are listed in the List Fields.



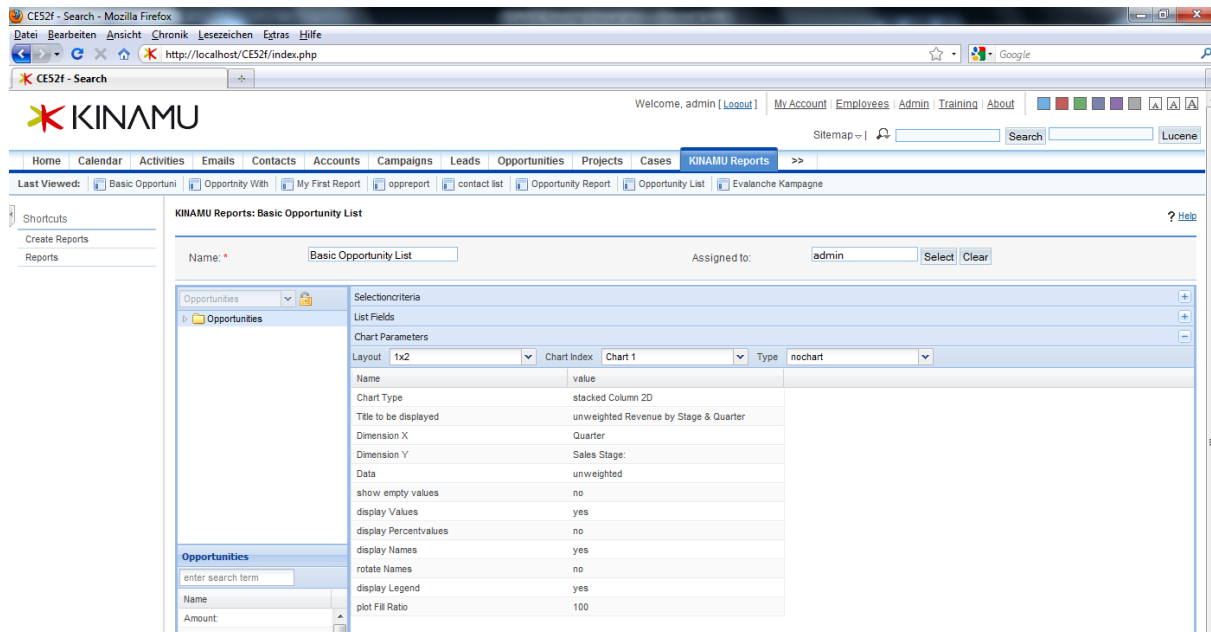
Screenshot 26 - Definition of Chart Parameters

In our Case “Quarter” is the Dimension X, “Sales Stage” is the Dimension Y and “unweighted” is the Data we want to display.

Further you can specify the following options:

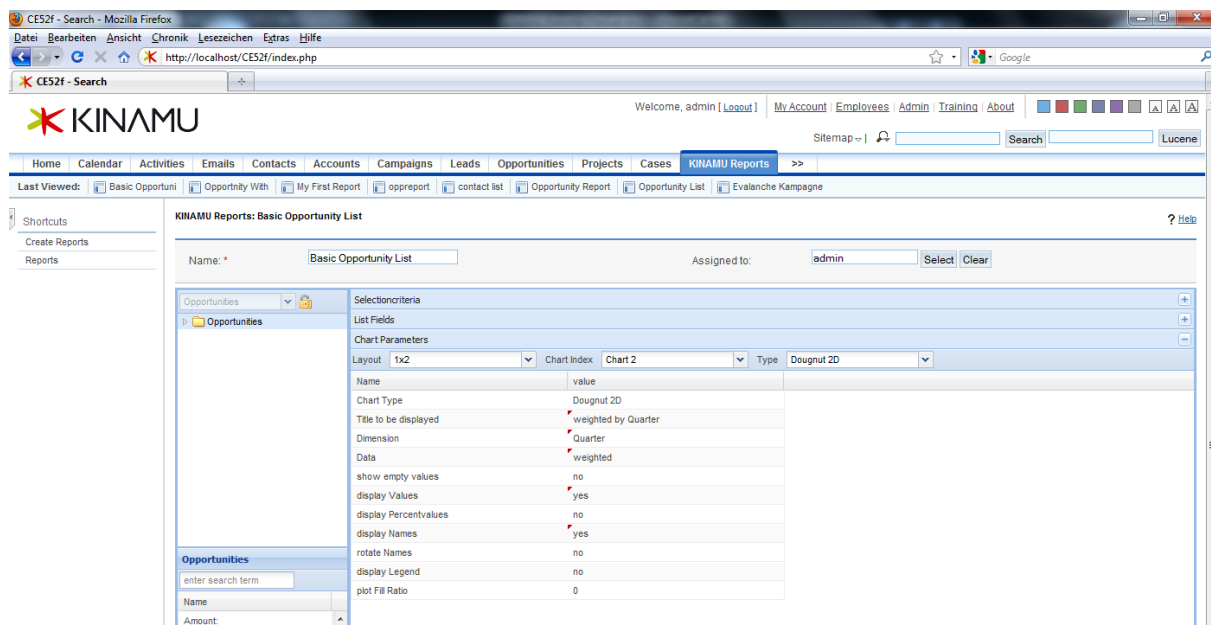
- *show empty values*: if the Dimension (X or just one) is an ENUM Field with preset options this will show all values in a chart also if no value exists on the Database
- *display Values*: will Display the Values in the Chart. If set to no you will need to hover your mouse over the chart to get the values
- *display Percentvalues*: mainly relevant for PieCharts to display also the percentage values of the total
- *display Names*: will display the Names for the Dataseries. For a bar or column Chart below or asides the series, for a Pie or Doughnut as indications for the segment
- *rotate Names*: only valid for Column Charts to rotate the names (makes a chart more readable if names are long)
- *display Legend*: displays a Legend to the Colors and is only valid for multiseries Charts
- *plot Fill Ratio*: is a value between 0 and 100 and manages the color display of the chart if it fades from transparent to the full color (Value 0) or semitransparent to the Full color (any value between 0 and 100) or if the elements are solid fill (Value 100).

In our example we want to *display Values* and *display Names* and also *show a Legend*. Plot Fill Ratio for the Chart we set to *100* to make it solid colors. So the Settings for Chart 1 should look as follows:



Screenshot 27 - Example Chart Parameters for multiseries Chart

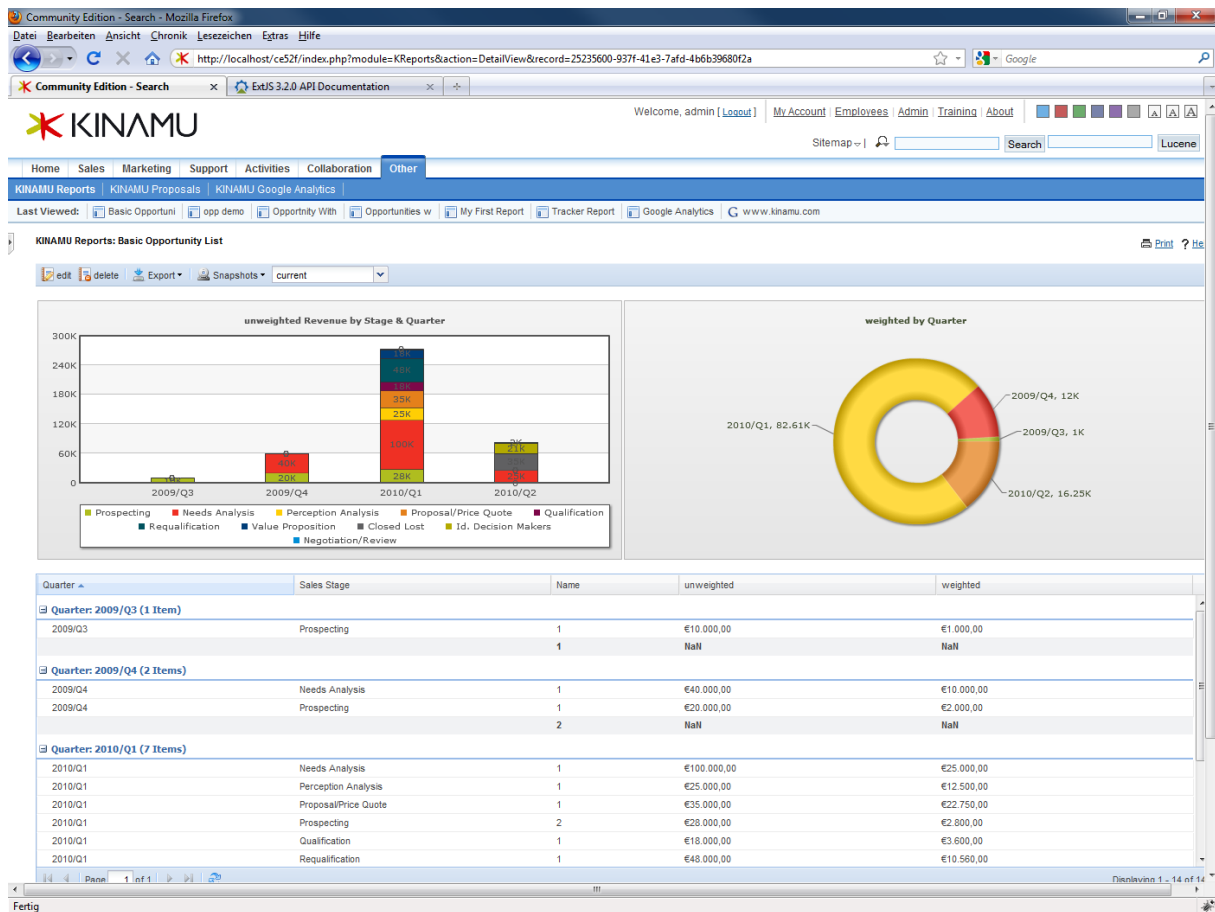
Repeat the Steps for Chart 2 where we want to have a Doughnut for the weighed revenue per Quarter. Thus the Settings should be as follows:



Screenshot 28 - Example Chart Parameters for Doughnut Chart

Title is "*weighted by Quarter*", Dimension is "*Quarter*" and Data is "*weighted*". We want to *display Values* and also *display Names*.

Press the Save Button and get the Result for the Charts you just have created.



Screenshot 29 - Example Chart Layout 1x2