# TBS Engineering Dashboard Website

## User Manual

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# Content

# 1. Introduction

This manual describes the TBS Engineering Dashboard Website. The website provides user-friendly graphs, charts and so on to convey crucial information to project managers about customers, ongoing projects, items produced and much more. The different pages can be accessed via the Navigation Menu, located in the top left section.

The user should either be a project manager or a developer who wants to modify the application, although there will not be any restriction regarding the type of user inside the website. This manual will include one section for end users and one section for developers.

Regarding developers, the website is built entirely in Oracle APEX, which can include by itself languages such as: SQL, PL/SQL, JavaScript, CSS. It should run on any up-to-date popular browser (Chrome, Firefox, Edge, Explorer, Safari).

# 2. License & Warranty

This application was built with tools that are already deployed by the customer and it's based on products that have already their proper license. The dashboard doesn't require any licenses.

The warranty will be included in support model and maintenance plan that will be defined to ensure a good service level for this solution as expected by the customer.

# 3. TBS Engineering Dashboard Web Site

The purpose of this website is to represent information in such manner that the key performance indicators (KPIs) can be easily observed. The project managers should be able to get the full picture of TBS Engineering's economic situation at a glance.

Through many charts, graphs and such, the information is represented in a user-friendly way : the website's core functionality is not hard to understand, but this manual can help to access the less obvious information, if the project managers desire more details about the upcoming quotes, the completed quotes, the bank account, the "best" customers, the "best" items, etc. Not every page contains
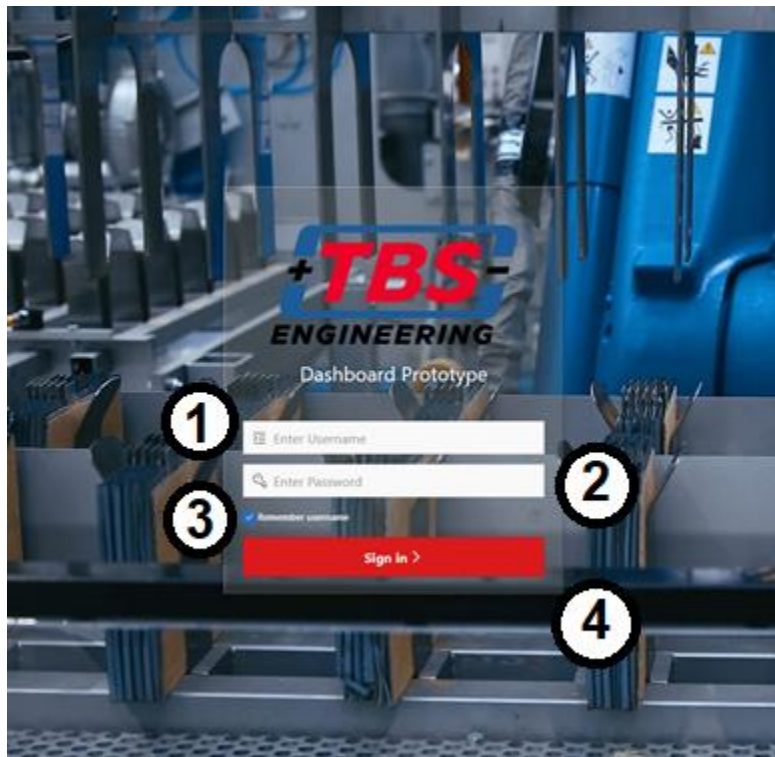
"hidden" information: for example, there is not much to say about cost and income, when the data is already represented yearly and monthly. Adding too much details would not put the focus on the important, first glance data and it is not the website's purpose. It would derogate from the user-friendly theme, and therefore too much detail is not ideal.

## 3.1. Top-Level Pages

Due to the reason that this website has a few number of pages, top-level pages will not act as "folders" or submenus from where the user can navigate to a specific page. They will rather contain related graphs, charts, reports and so on, like a low-level page would. The pages do not contain a large amount of text, as the goal is to understand the general idea at a glance. They are instead composed of charts, graphs and select lists.

# 4. TBS Web Pages

## 4.1. "Login" Page



On this page, you can use your log-in credentials (1) and (2) to sign in (4) to the application. You may as well click on "Remember username" (3) if you do not wish to re-type your username every time.
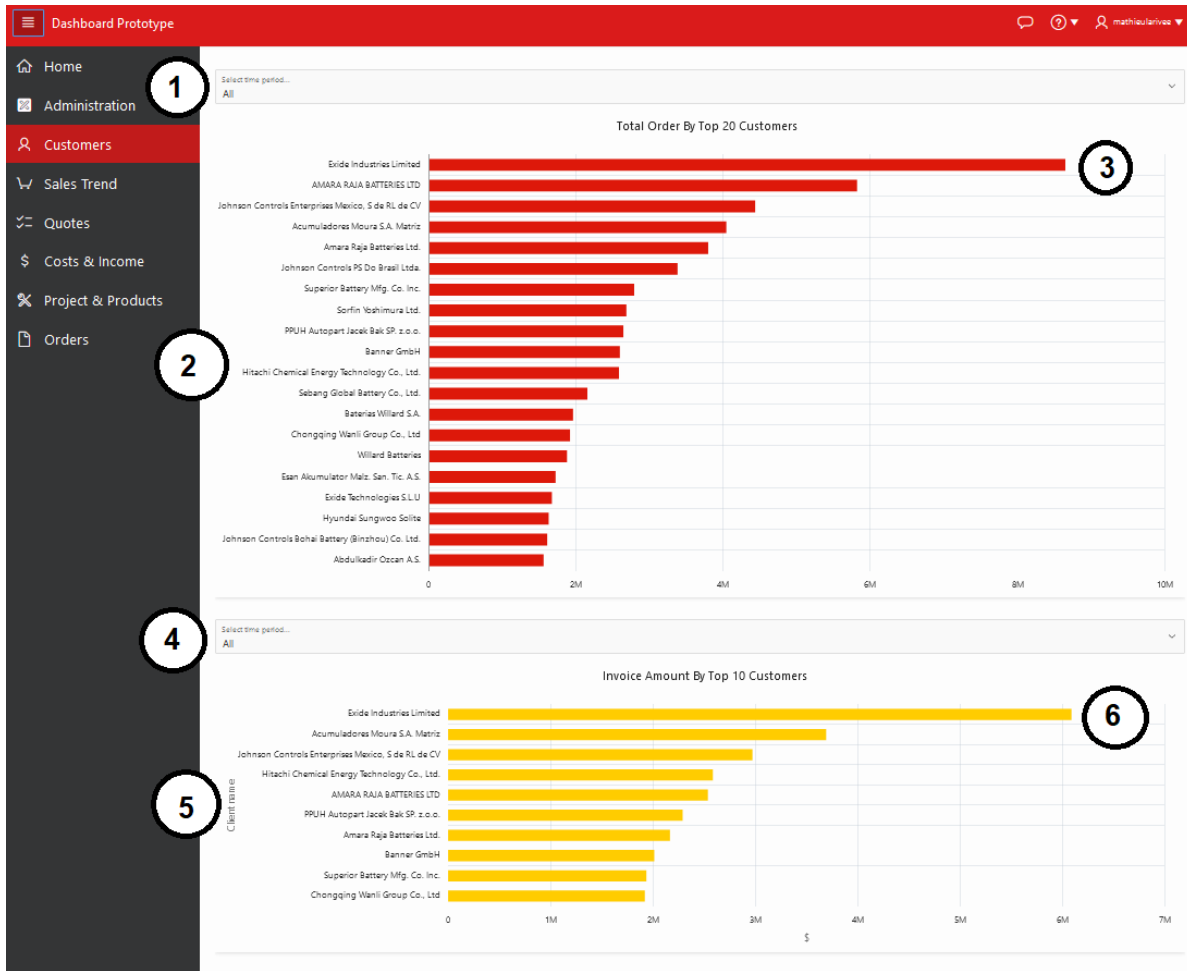
## 4.2. "Home" Page



This page shows important KPIs, as agreed with our customer.

- **Bank Balance**

    The select list (1) above the chart (2) can be expanded to select either a specific year or "All". Selecting a specific year or "All" will refresh the chart to show the amount of money in TBS Engineering's bank account as of December 31 (or right now if "All" was selected) of the specified year. Moving the mouse over a vertical bar (3) will display more information.

## 4.3. "Customers" Page



This page contains information related to the multiple customers TBS Engineering trades/has traded with.
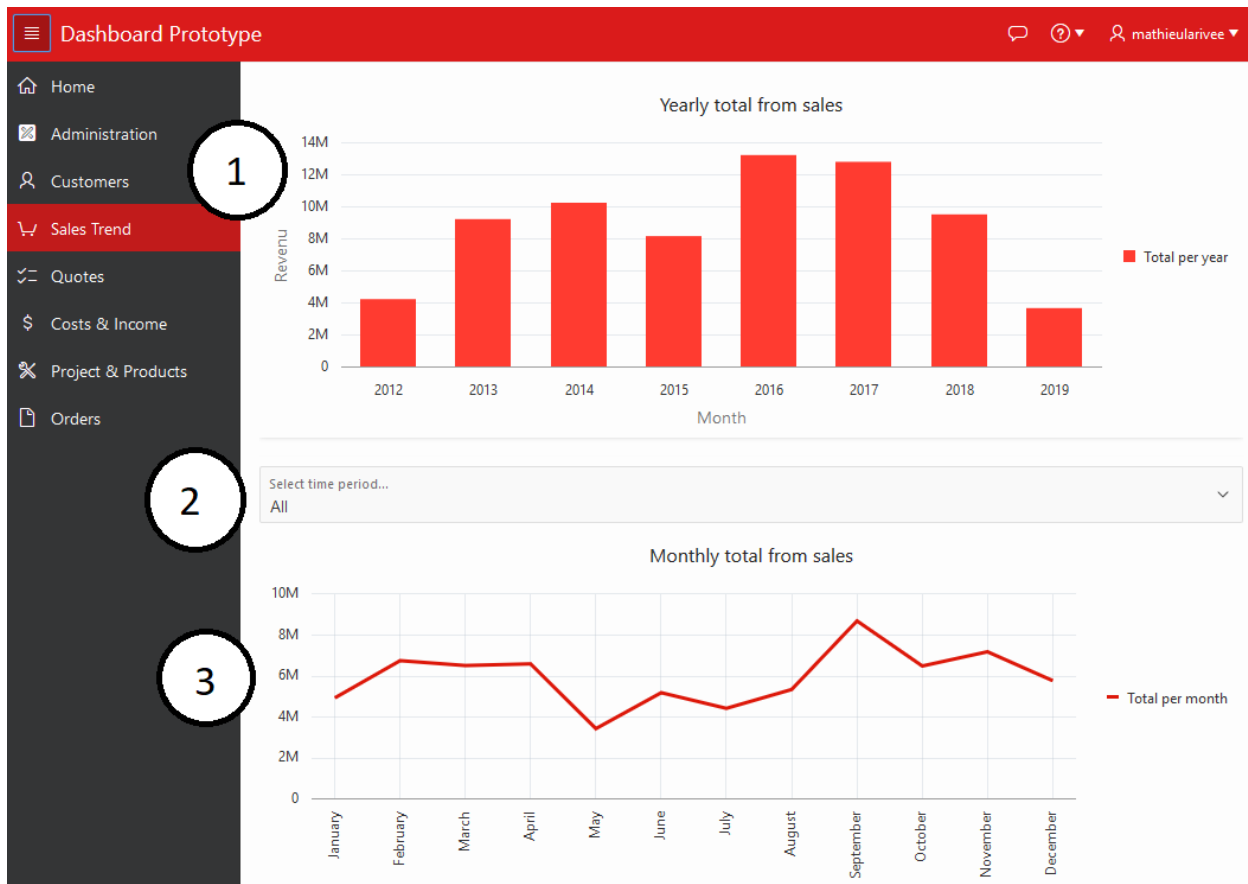
▪ **Total Order By Top 20 Customers**

The top bar chart (2) shows the top 20 customers who have ordered the most items, ordered by dollar spent. The select list above the bar chart (1) can be used to filter the year the money was spent in. Moving the mouse over a horizontal bar (3) will show the data with more precision. Clicking on a horizontal bar will open a pop-up dialog to display even more information about the orders.

▪ **Invoice Amount By Top 10 Customers**

The bar chart below (5) shows the invoice amount by customers. Again, the data can be filtered with the select list above (4). Moving the mouse over a horizontal bar (6) will also show the data with more precision. You can also click on a horizontal bar to see all bills. Clicking on a horizontal bar will open a pop-up dialog to display even more information about the bills.

## 4.4. "Sales Trend" Page



This page shows general information about sales.

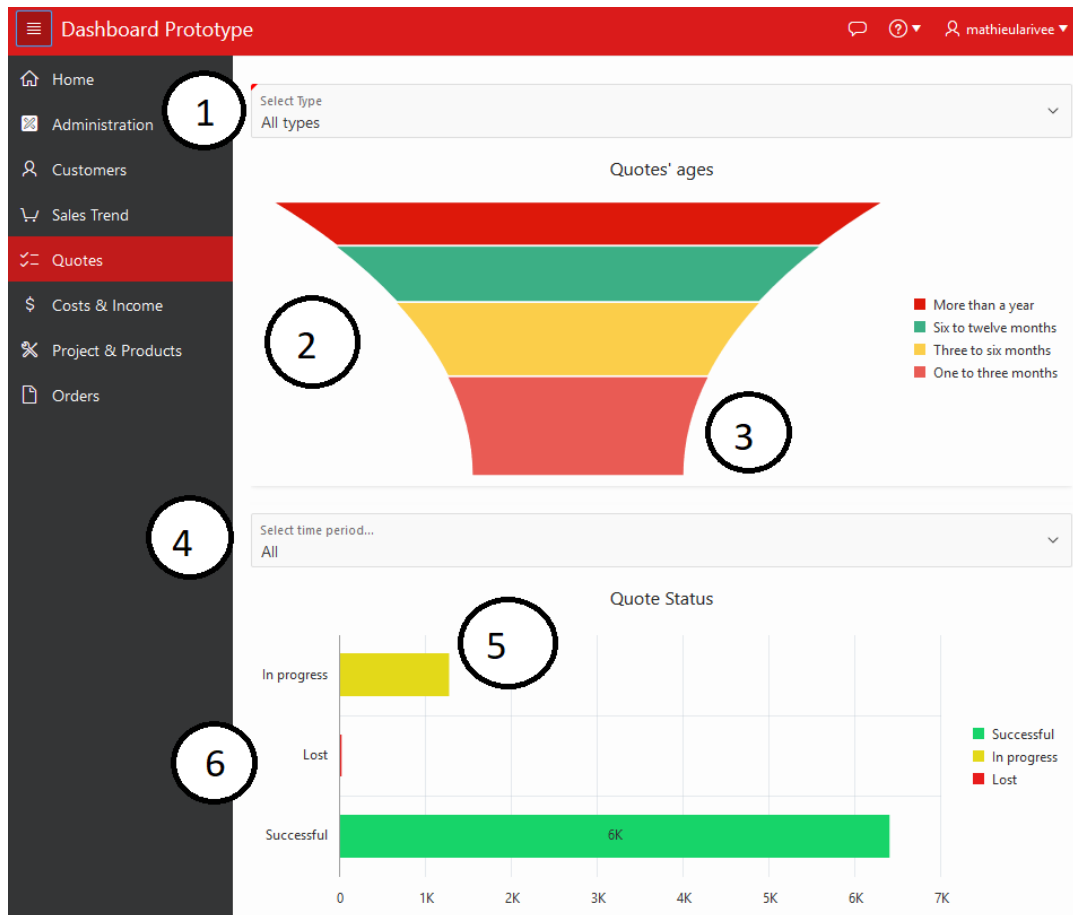- **Yearly total from sales**

    This bar chart (1) shows how much money was gained from the sales per year.

- **Monthly total from sales**

    This line chart (3) shows how much money was gained from the sales per month in the specified year. Said year can be changed using the select list (2) which affects the chart.

    On this page, there is a bar chart, indicating how much money was gained from the sales per year. The line chart below shows the same data, but for a specific year and per month. Naturally, the sum of all months in the line chart will be equal to the total for the specified year in the bar chart above.

## 4.5. "Quotes" Page



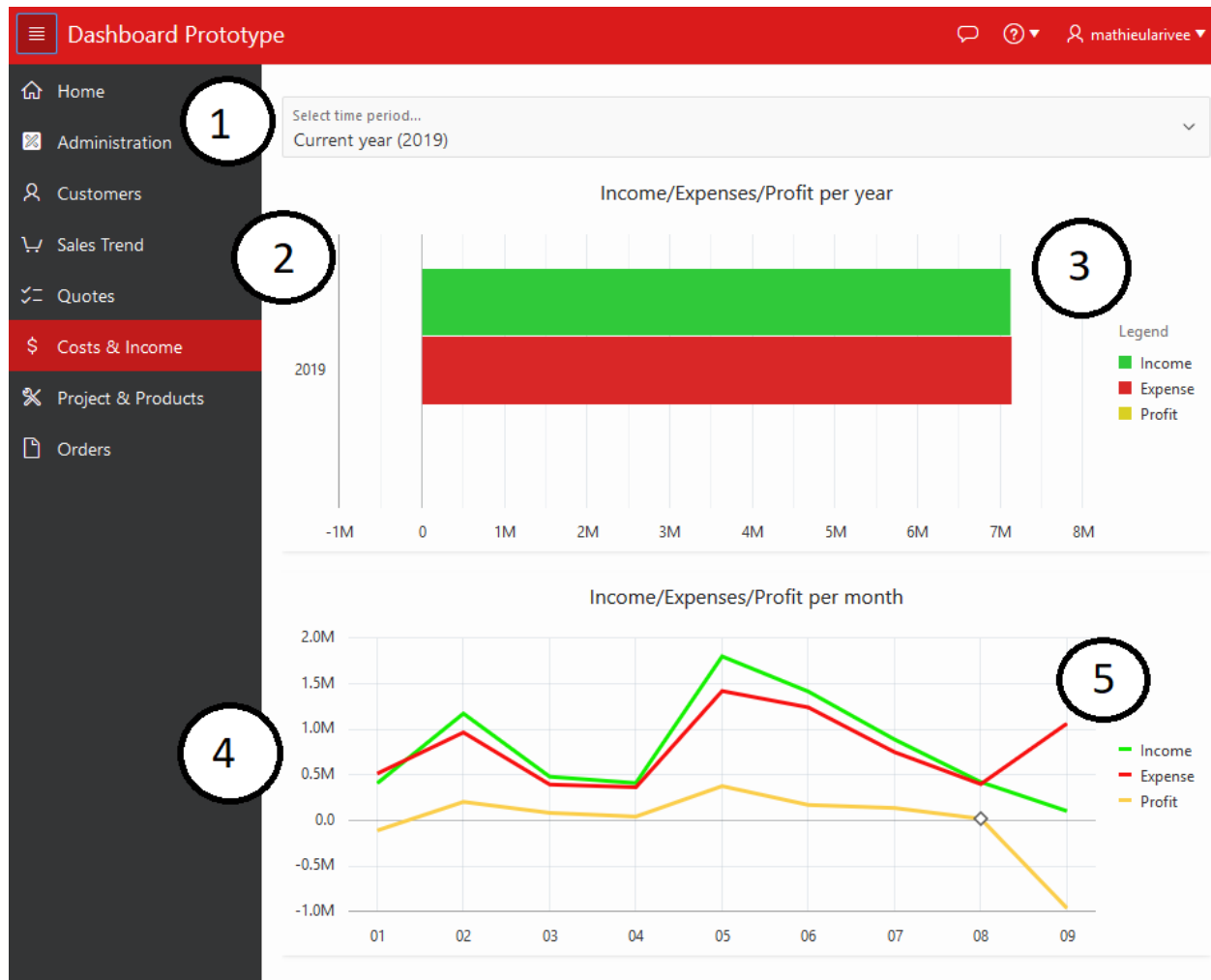This page contains all the information related to the quotes.

- ▪ **Quotes' ages**

   This funnel chart (2) shows the age, in day, of all quotes in progress, grouped into five categories, which are as follow: Less than a month, One to three months, Three to six months, Six to twelve months, More than a year. The select list (1) above the chart can be used to filter the type of quotes. If a group does not show, it's because no quote fell into the range. Clicking on a category (3) opens a new page. See section 3.1.8 for more details.

- ▪ **Quote Status**

   This bar chart (6) shows how many submissions have been completed, are in progress and have been lost. The select list (4) above the chart filters the quote's year (the year in which it started). Moving the mouse over a horizontal bar (5) will display more information.

## 4.6. "Costs and Income" Page



This page contains information related to the costs and income of TBS Engineering.
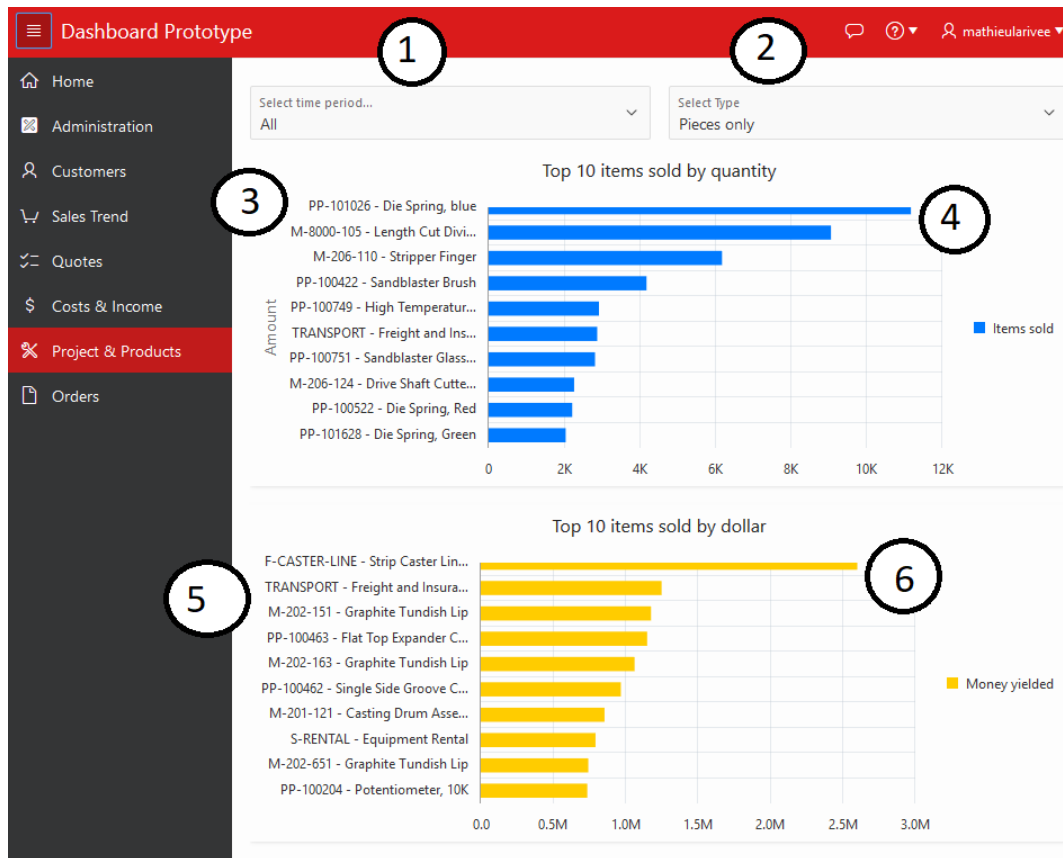
▪ **Income/Expenses/Profit per year**

> This bar chart (2) has three bars, with the first one in green representing the income, the second one in red representing the expenses and the third one in yellow representing the difference between the first two. The select list (1) above the first bar chart filters both charts by specifying a year. Moving the mouse over a horizontal bar (3) will display more information.

▪ **Income/Expenses/Profit per month**

> This line chart (4), below the bar chart, is essentially the same as above, but instead of showing the data per year, it shows the data per month. Moving the mouse over a line and a column (5) will display more information.

# 4.7. "Projects & Products" Page



This page contains information about the "best" projects and products. Note that "Items" refers to projects and/or products.

- ▪ **Top 10 items sold by quantity**

  This bar chart (3) shows the top 10 items which sold the most. The two select lists (1) and (2) can be used to filter the year and the type of item. This allows combinations such as: Products only, in 2018; Products only, all time; All items, 2018, etc. Moving the mouse over a horizontal bar (4) will display more information about the item. Clicking on a horizontal bar will open a pop-up dialog to display even more information about the item.

- ▪ **Top 10 items sold by dollar**

  This bar chart (5) shows the top 10 items which yielded the most money. The two select lists (1) and (2) can be used to filter the year and the type of item. This allows combinations such as: Products only, in 2018; Products only, all time; All items, 2018, etc. Moving the mouse over a horizontal bar (6) will display more information about the item. Clicking on a horizontal bar will open a pop-up dialog to display even more information about the item.

## 4.8. "Quotes' ages details" Page



This page contains an interactive report (5) which contains all the data related to the quotes.

At first, the data is based on the select lists' values in the previous page (the "Quotes" page). The interactive report can show other quotes by either selecting one or multiple checkboxes (1) at the top, or by changing the select list (2) value, or by interacting with the report directly. To modify the report directly, you can, for example: use the search bar (3) to filter only the rows that contain the specified word/number, click on the column headers (4) to sort the data by this column or

create a chart based on the report. More information can be found at this site: https://docs.oracle.com/database/apex-5.1/AEEUG/using-interactive-reports.htm#AEEUG453

## 4.9. "Orders" Page



- **Booking List**

    At first, this page contains an interactive report (3) which contains all the data related to the booking. It is possible to modify and sort the content of this interactive report by using the search bar (1) and filter (2).

- **Backlog**

    There is also another interactive report (6), similar to the Booking List, which contains all the data related to the backlog. Just like the first one, it is also possible to modify and sort the content of this report by using the search bar (4) and filter (5).

# 5. Site Development Tools

The web site can be edited with the following URL: http://apex.jbmlogic.com:8080. After logging in, you will need to click on "App Builder", then mouse over "Dashboard Prototype" and click the pen icon. From there, you can click on any page you wish to edit, run the application, add a page, and so on. To test SQL statements, open "SQL Workshop" (at the top of the page) in a new window, then click on "SQL Commands". To look at the tables' structures (column names, data types), you may click on "Find Tables". For a list of all the SQL queries used in our web site, you may enter the following query: "select * from apex_sql_queries order by query_id". We also recommend that, every time you add a chart to the application, you insert the query in the table apex_sql_queries. You may then reference the query by selecting "PL/SQL Function Body returning SQL Query" in the "Source" section, and by using the following PL/SQL statement : "return sql_queries.get_sql_query_with_id(<enter the query's id>)".

# 6. Suggested Future Work

The TBS Engineering Dashboard web site template and source code could be developed further in several areas, some of which are described below.

- Adding "Forgot password?" feature to the "Login" Page
- Add a mailing feature to send reports by email
- Add the possibility to change the pages format and appearance
- Installation manual: consolidate scripts and create one installation package to deploy the solution

# 7. Version History

The following versions of the source code have been released.

Version 2019-12-05

First release. The application's core functionalities are present.