

Cyboard

360° Company Dashboard

Project Specification



Master in Informatics and Computing Engineering

Information Systems

Turma 2 - Grupo A:

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1 Project Overview

Cyboard is a fictional hardware company, which will be used to illustrate the management information needs that can be satisfied through a company dashboard.

The 360° Company Dashboard is a web application for information management, which will be developed within the curricular unit of Information Systems, a part of the Masters degree in Informatics and Computing Engineering.

This application will have as main objective to allow the Cyboard company managers access to information about the state of the company. This information will be submitted to a prior analysis, which allows the computation and visualization of Key Performance Indicators (KPIs), as well as charts with the financial, sales, purchases and stock data. For better understanding of this information, it will also be possible to verify the original documents from which it was generated. In short, the user will have a fast and simplified view of a set of complex data about the current company status.

We intend to develop this web application using an appropriate template, which we then be edited for our purpose. The frontend technology will be Angular 4 and the backend will use Node.js.

2 Functionalities

This application has a set of pages in which the user can navigate in order to achieve their objective. Figure 1 has the sitemap, that is, it shows the application flow. Each of these pages has a set of functionalities with a main purpose. From Table 1 to Table 6 we present each group of functionalities, organized by core view.

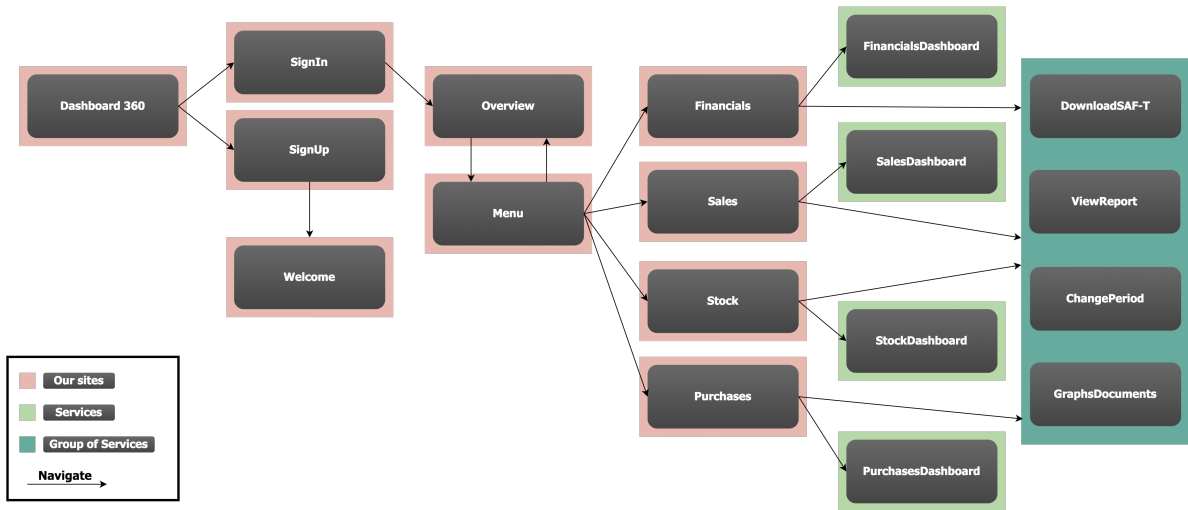


Figure 1: 360° Company Dashboard Sitemap

CoreView	Functionality	Description
All	Report	Allows a user to view the report of the selected period
	Change Period	Allows a user to change the period of the report
	Download SAF-T	Allows a user to download SAF-T as csv file
	Menu	Allows a user to browse through all the application pages
	Chart Document	Allows a user to view the documents used to produce the charts presented

Table 1: Functionalities present on all the core views

CoreView	Functionality	Description
Overview	[KPI] Total Revenue	Allows a user to check the revenue of the company
	[KPI] Total Profit	Allows a user to check the profit of the company
	[KPI] Financial Autonomy	Allows a user to check the percentage of the company's financial autonomy
	[KPI] Liquidity	Allows a user to check the company's liquidity
	[KPI] Number of Clients	Allows a user to check the company's number of clients
	[KPI] Number of Sales	Allows a user to check the company's number of sales
	[KPI] ROE	Allows a user to check the company's Return On Equity
	[KPI] ROA	Allows a user to check the company's Return on Assets
	Top Clients	Allows a user to analyze a chart with the company's top clients
	Total Costs	Allows a user to analyze a chart with the company's costs
	Top Sales	Allows a user to analyze a chart with the company's sales

Table 2: Functionalities present on the Overview core view

CoreView	Functionality	Description
Financial	Earnings vs Expenses	Allows a user to analyze a chart with the company's earnings and expenses
	Accounts Receivable vs Payable	Allows a user to analyze a chart with the accounts receivable and with the accounts payable
	Distribution of Earnings and Expenses	Allows a user to analyze a chart with the distribution of the company's earnings and expenses
	Balance Sheet	Allows a user to analyze a table with company's financial balance

Table 3: Functionalities present on the Financial core view

CoreView	Functionality	Description
Sales	[KPI] Total Sales Revenue	Allows a user to check the sales revenue including AR
	[KPI] Total Accounts Receivable	Allows a user to check the total accounts receivable
	[KPI] Total Orders Amount	Allows a user to check the total orders amount
	[KPI] Number of Clients	Allows a user to check the company's number of clients
	[KPI] Number of Sales	Allows a user to check the number of sales
	[KPI] Number of Orders	Allows a user to check the number of orders
	Top Products Sold	Allows a user to analyze a chart with the top products sold
	Cost of Products Sold	Allows a user to analyze a chart with the cost of products sold
	Online vs In-Store sales	Allows a user to analyze a chart with the amount of online vs in-store sales

Table 4: Functionalities present on the Sales core view

CoreView	Functionality	Description
Purchases	[KPI] Total Purchases Cost	Allows a user to check the total purchases cost including AP
	[KPI] Total Accounts Payable	Allows a user to check the total accounts payable
	[KPI] Total Orders Amount	Allows a user to check the total orders amount
	[KPI] Number of Suppliers	Allows a user to check the number of suppliers
	[KPI] Number of Purchases	Allows a user to check the number of purchases
	[KPI] Number of Orders	Allows a user to check the number of orders
	Top Products Purchased	Allows a user to analyze a chart with the top products purchased
	Purchases per Sector	Allows a user to analyze a chart with the purchases per sector
	Amount of Imported vs National	Allows a user to analyze a chart with the amount of imported vs national

Table 5: Functionalities present on the Purchases core view

CoreView	Functionality	Description
Stock	Search Product Stock	Allows a user to search existent stock product by location, date and reference
	Stock Level and Value	Allows a user to view the changes in stock level and value over time
	[KPI] Stock Level by Location	Allows a user to check the stock level in each location
	[KPI] Stock Value by Location	Allows a user to check the stock value in each location
	Top Used Suppliers	Allows a user to analyze a chart with the top used suppliers
	Top Products Sold	Allows a user to analyze a chart with the top products sold
	Locations With More Stock Level	Allows a user to analyze a chart with the number of X locations with more stock level

Table 6: Functionalities present on the Stock core view

3 Information Architecture

In this section, we identify the core views of our application, that is, we describe the main pages (since this will be a website) of our product. This way, it becomes clear what are the main things a user can do and see within the application.

For each core view, we also present the main user goals, the ways to access that view (inwards) and what is possible to do once in there (outwards).

We decided to have a main transversal view - Overview - that contains the key information for the company general manager. From there it is possible to access all the other core views. These other views were identified according to the projected management needs of an hardware company, but they are pretty much the same for most companies: financial, sales, purchases and stock.

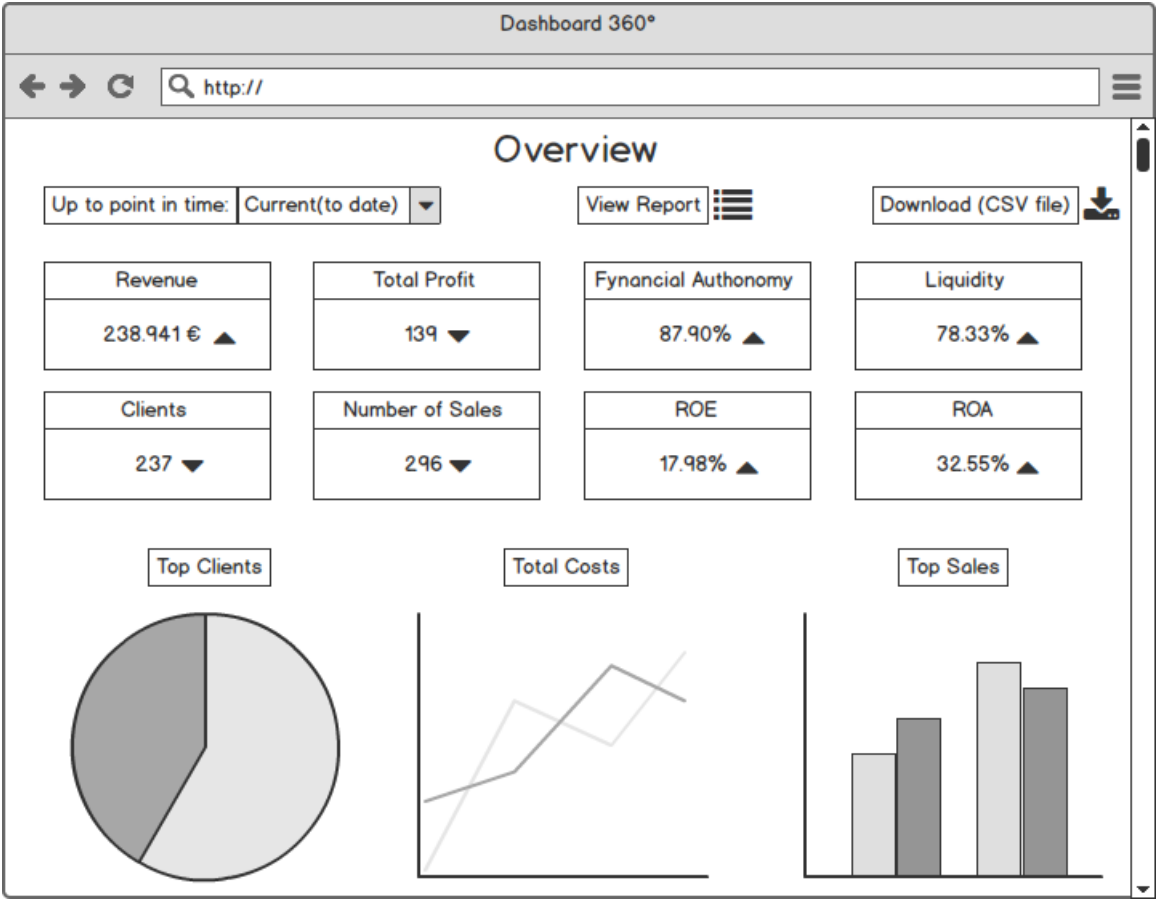
3.1 Overview

USER BUSINESS GOALS

- Company overview
- To be used as a management tool and quick view of the company status

INWARDS

- Sign In
- Menu



OUTWARDS

- Menu
- Download SAF-T as csv file
- View the report
- Change the period of the report
- View documents about the charts produced

ELEMENTS OF THE CORE

- KPI_01 Total Revenue	- KPI_02 Total Profit	- KPI_03 Company's Financial Autonomy
- KPI_04 Company's liquidity	- KPI_05 Number of Clients	- KPI_06 Number of Sales
- KPI_07 Return On Equity	- KPI_08 Return on Assets	- PIE_01 Top Clients
- LINE_01 Total Costs	- BAR_01 Top Sales	

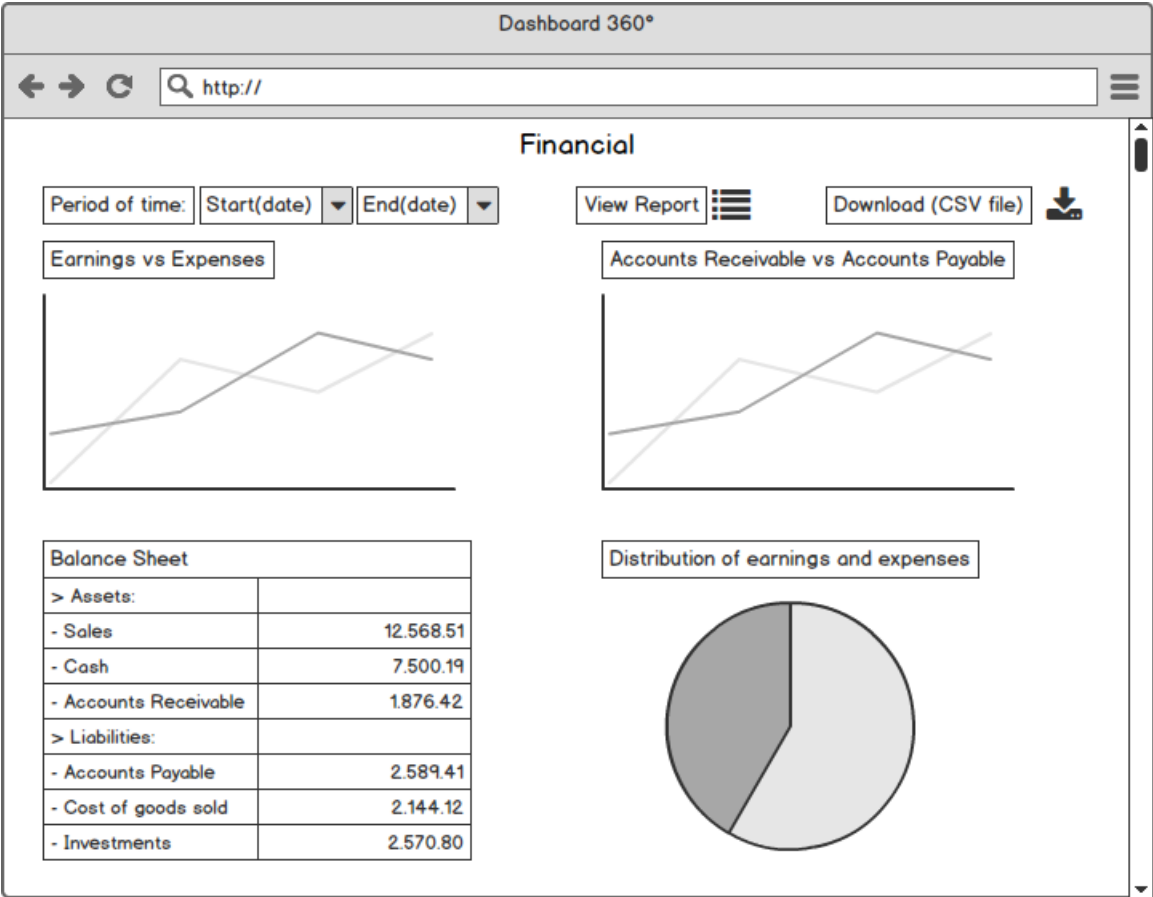
3.2 Financial View

USER BUSINESS GOALS

- Monitoring the financial area and accounting
- Inform the user about the data entered in the accounting

INWARDS

- Overview
- Menu



OUTWARDS

- Menu
- Download SAF-T as csv file
- View the report
- Change the period of the report
- View documents about the charts produced

ELEMENTS OF THE CORE

- LINE_02 | Earnings vs Expenses
- KPI_09 | Total Assets Amount
- KPI_11 | Cash Amount
- KPI_13 | Total Liabilities Amount
- KPI_15 | Cost of Goods Sold Amount
- PIE_02 | Distribution of Earnings and Expenses
- LINE_03 | Accounts Receivable vs Payable
- KPI_10 | Sales Amount
- KPI_12 | Accounts Receivable Amount
- KPI_14 | Accounts Payable Amount
- KPI_16 | Investments Amount

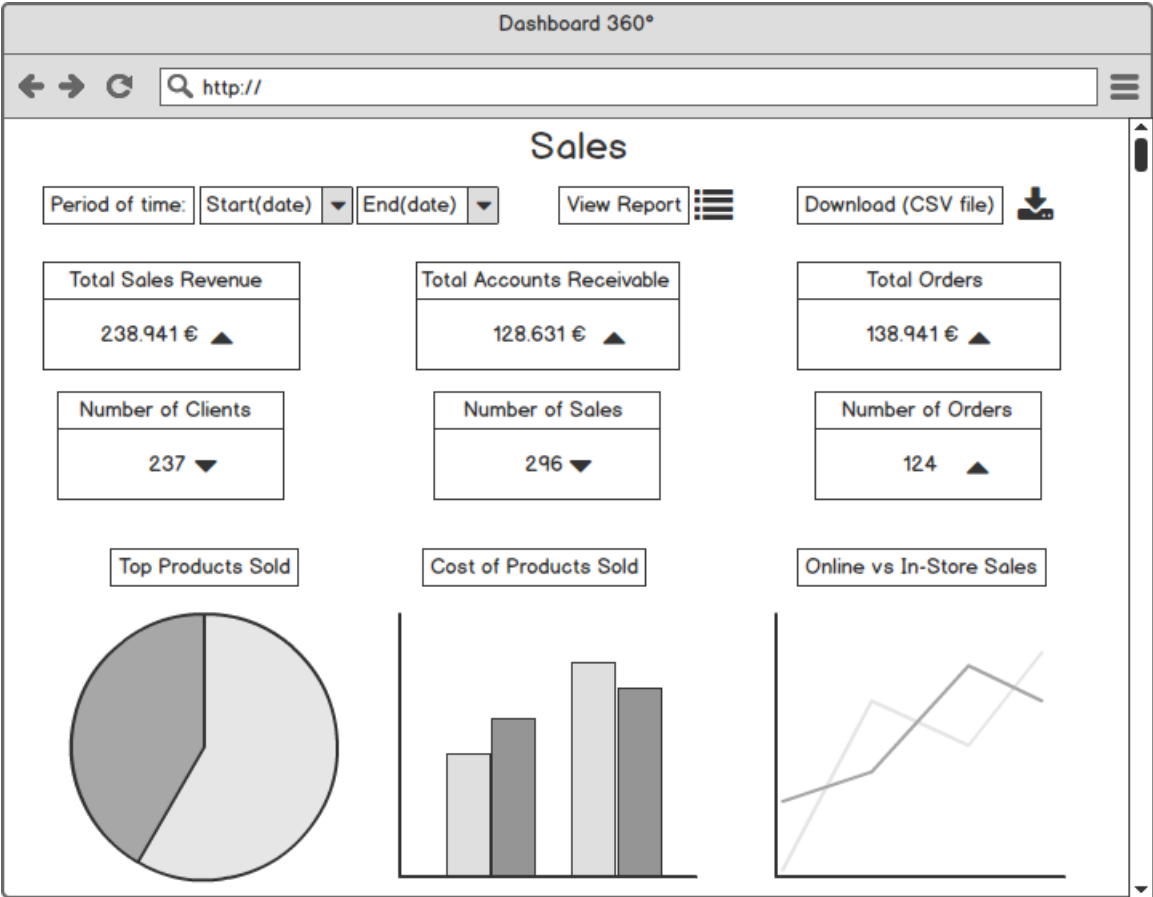
3.3 Sales View

USER BUSINESS GOALS

- Company sales view
- View to be used as a sales management tool

INWARDS

- Overview
- Menu



OUTWARDS

- Menu
- Download SAF-T as csv file
- View the report
- Change the period of the report
- View documents about the charts produced

ELEMENTS OF THE CORE

- | | |
|--|--------------------------------------|
| - KPI_17 Total Sales Revenue Including AR | - KPI_18 Total Accounts Receivable |
| - KPI_19 Total Orders Amount | - KPI_20 Number of Clients |
| - KPI_21 Number of Sales | - KPI_22 Number of Orders |
| - PIE_03 Top Products Sold | - BAR_02 Cost of Products Sold |
| - LINE_04 Amount of Online vs In-Store sales | |

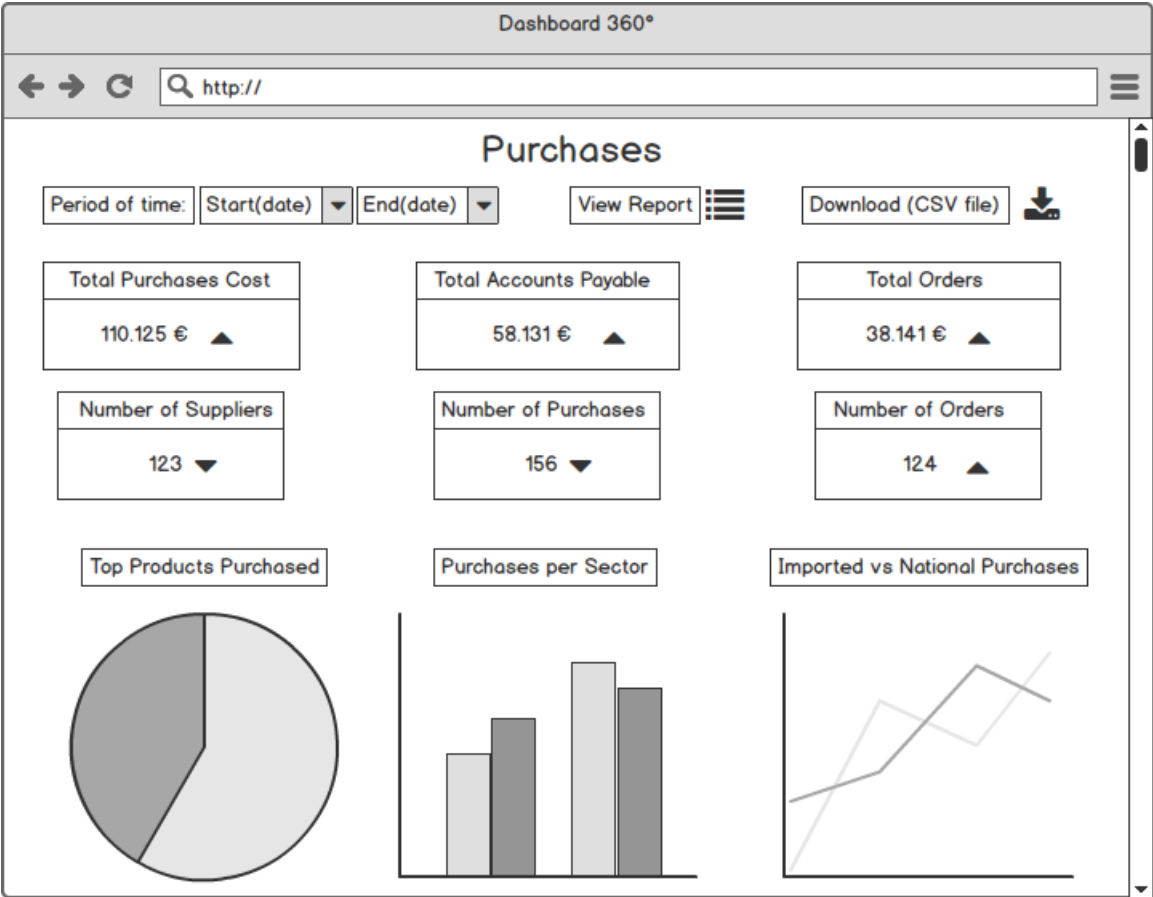
3.4 Purchases View

USER BUSINESS GOALS

- Company purchases view
- View to be used as a purchases management tool

INWARDS

- Overview
- Menu



OUTWARDS

- Menu
- Download SAF-T as csv file
- View the report
- Change the period of the report
- View documents about the charts produced

ELEMENTS OF THE CORE

- | | |
|--|-----------------------------------|
| - KPI_23 Total Purchases Cost Including AP | - KPI_24 Total Accounts Payable |
| - KPI_25 Total Orders Amount | - KPI_26 Number of Suppliers |
| - KPI_27 Number of Purchases | - KPI_28 Number of Orders |
| - PIE_04 Top Products Purchased | - BAR_03 Purchases per Sector |
| - LINE_05 Amount of Imported vs National Purchases | |

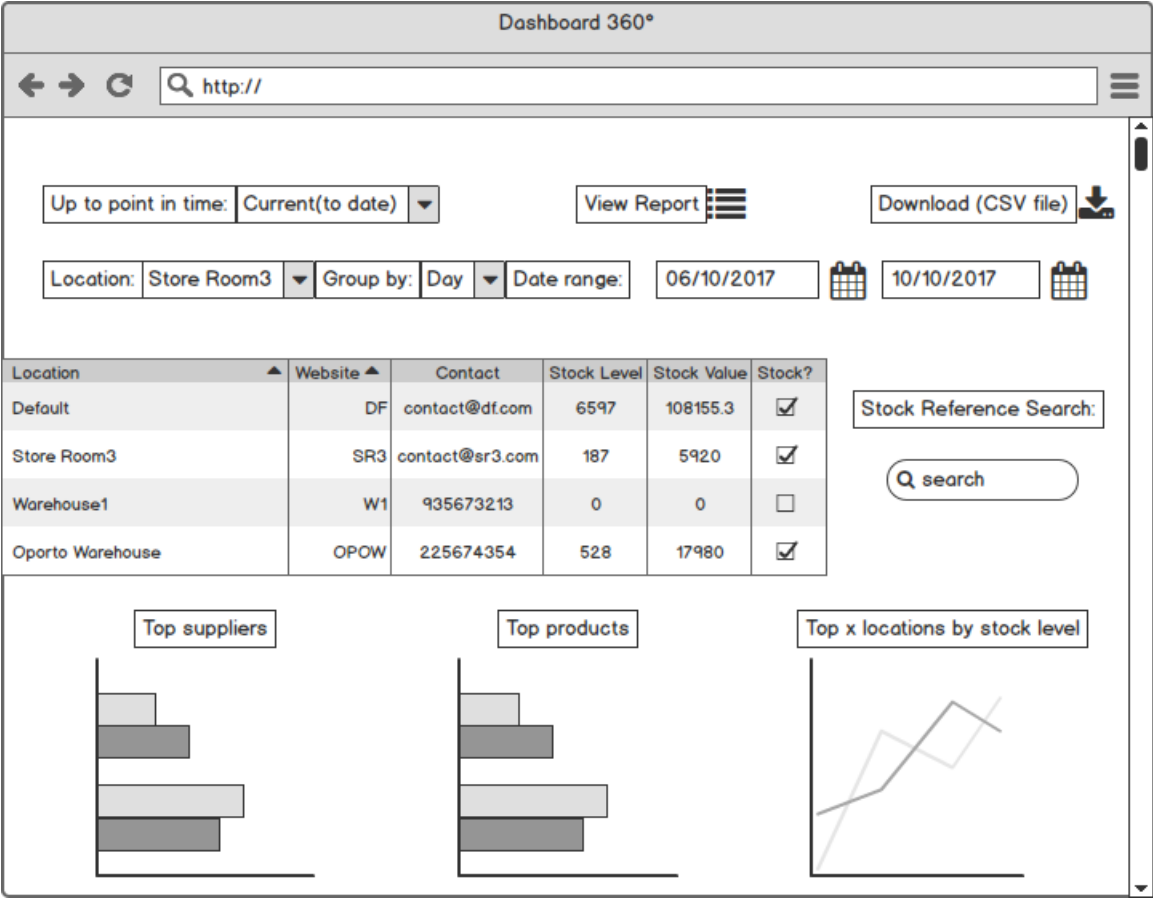
3.5 Stock View

USER BUSINESS GOALS

- Company stock view
- Presentation of key stock metrics

INWARDS

- Overview
- Menu



OUTWARDS

- Menu
- Download SAF-T as csv file
- View the report
- Change the period of the report
- View documents about the charts produced
- Search existent stock product by location, date and reference
- View the change in stock level and value over time

ELEMENTS OF THE CORE

- KPI_29 | Stock level in each location
- KPI_30 | Stock value in each location
- BAR_04 | Top used suppliers
- BAR_05 | Top products sold
- LINE_06 | Number of X locations with more stock level

4 Interoperability with Primavera

In this chapter we present the implementation of the interoperability layer and web services required for the core views defined above.

4.1 Financial

- **Webservice ID:** *getBalanceSheet*
- **Description:** returns the balance sheet within a range of dates
- **Related core views:** Overview, Financial View
- **Related KPIs:** KPI_09, KPI_10, KPI_11, KPI_12, KPI_13, KPI_14, KPI_15, KPI_16
- **Route and verbs:** /api/primavera/balance GET
- **Input example:** *init = yyyy/mm/dd&end = yyyy/mm/dd*
- **Expected output:**

```
[
  {
    "2017": {
      "10": {
        "db_names": [
          "Mes00DB",
          "Mes01DB",
          "...",
          "Mes12DB"
        ],
        "cr_names": [
          "Mes00CR",
          "Mes01CR",
          "...",
          "Mes12CR"
        ],
        "values": [
          "0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0",
          "0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0",
          "0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0",
          "0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0"
        ],
        "ano": "2017",
        "conta": "23",
        "moeda": "EUR",
        "tipoLancamento": "000",
        "naturezaOR": "C"
      }
    }
  }
]
```

4.2 Sales

- **Webservice ID:** *getSales*
- **Description:** returns a list of sales within a range of dates
- **Related core views:** Overview, Financial View, Sales View
- **Related KPIs:** KPI_06, KPI_10, KPI_17, KPI_21

- **Route and verbs:** /api/primavera/sale GET
- **Input example:** *init = yyyy/mm/dd&end = yyyy/mm/dd*
- **Expected output:**

```
[
  {
    "ID": "{KJD198324U239}",
    "DocumentDate": "2017-02-01T00:00:00",
    "DueDate": "2017-04-31T00:00:00",
    "ReceptionDate": "2017-01-03T00:00:00",
    "LoadingDate": "0001-01-01T00:00:00",
    "DocumentType": "PR",
    "ClientId": "BLP",
    "ClientName": "BrunoLopesPereira",
    "Product": {
      "Id": "NV10239872386",
      "Brand": "NVIDIA",
      "Model": "NV950XL",
      "Description": "NVIDIA_950_XL",
      "FamilyId": "GR01",
      "FamilyDescription": "GraphicsCard"
    },
    "Value": {
      "Value": 228.39,
      "Currency": "EUR"
    },
    "VAT": 0.23
  }
]
```

4.3 Purchases

- **Webservice ID:** *getPurchases*
- **Description:** returns a list of purchases within a range of dates
- **Related core views:** Overview, Purchases View
- **Related KPIs:** KPI_07, KPI_08, KPI_23, KPI_24, KPI_26, KPI_27, KPI_28
- **Route and verbs:** /api/primavera/purchase GET
- **Input example:** *init = yyyy/mm/dd&end = yyyy/mm/dd*
- **Expected output:**

```
[
  {
    "ID": "{616997945}",
    "DocumentDate": "2017-06-10T14:50:00",
    "DueDate": "2014-08-12T12:31:22",
    "ReceptionDate": "2017-10-01T00:47:53",
    "DocumentType": "XPTO",
    "SupplierId": "S123",
    "SupplierName": "DemoSinf",
    "Product": {
      "Id": "A0001",

```

```

    "Brand": "INTEL",
    "Model": "",
    "Description": "Pentium D925 Dual Core",
    "FamilyId": "H01",
    "FamilyDescription": "Computer Hardware",
    "SubFamilyId": "HP001",
    "SubFamilyDescription": "Processor"
  },
  "Value": {
    "Value": 833.33,
    "Currency": "EUR"
  },
  "VAT": 0.23
}
]

```

4.4 Receivables

- **Webservice ID:** *getReceivables*
- **Description:** returns a list of receivables within a range of dates
- **Related core views:** Financial View, Sales View
- **Related KPIs:** KPI_12, KPI_18
- **Route and verbs:** /api/primavera/receivable GET
- **Input example:** *init = yyyy/mm/dd&end = yyyy/mm/dd*
- **Expected output:**

```

[
  {
    "DocumentType": "NC",
    "DocumentDate": "2017-02-01T00:00:00",
    "DueDate": "2017-04-31T00:00:00",
    "State": "PEN",
    "Entity": "BLP",
    "EntityType": "C",

    "PendingValue": {
      "Value": -134.89,
      "Currency": "EUR"
    }
  }
]

```

4.5 Payables

- **Webservice ID:** *getPayables*
- **Description:** returns a list of payables within a range of dates
- **Related core views:** Financial View, Purchases View
- **Related KPIs:** KPI_14, KPI_24
- **Route and verbs:** /api/primavera/payable GET

- **Input example:** $init = yyyy/mm/dd \& end = yyyy/mm/dd$
- **Expected output:**

```
[
  {
    "DocumentType": "VFA",
    "DocumentDate": "2017-02-01T00:00:00",
    "DueDate": "2017-04-31T00:00:00",
    "State": "PEN",
    "Entity": "SSTV",
    "EntityType": "S",

    "PendingValue": {
      "Value": -1124.91,
      "Currency": "EUR"
    }
  }
]
```

5 Project Execution Plan

In Figure 2 we present our projected time frame for developing this project.

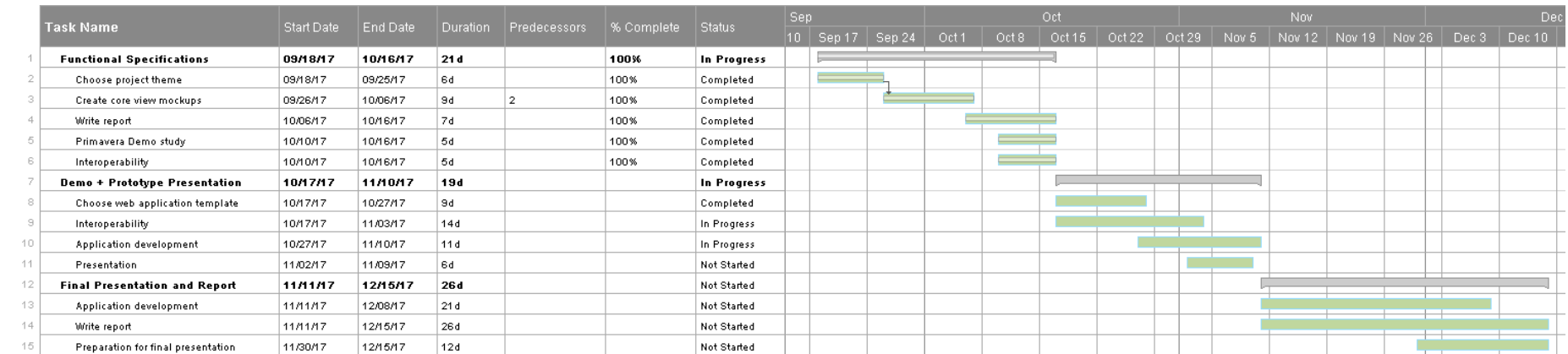


Figure 2: Project Gantt Diagram

References

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