



HW2 - BPMS

System Analysis and Design

GROUP 1

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1 Introduction

Business Process Management Software (BPMS) tools are critical for organizations seeking to optimize workflows, improve efficiency, and manage processes effectively. These tools offer a range of capabilities, including process modeling, automation, and collaboration, enabling businesses to align their operations with strategic objectives. In this assignment, we evaluate five notable BPMS platforms: **BPMN.io**, **Camunda**, **Bonita**, **Miro**, and **Zoho**. Each tool brings unique features and strengths, catering to diverse business needs.

Our objective is to identify the most suitable platform for our specific project requirements. To achieve this, we will provide an overview of each tool's capabilities, followed by a comparative analysis. This systematic approach will enable us to select the final tool that best aligns with our project goals, operational demands, and long-term scalability.

2 Camunda

2.1 Overview

Camunda[1] is a powerful open-source platform for Business Process Management (BPM), helping organizations efficiently model, execute, and optimize workflows. With Camunda, you can:

- Model processes visually using the BPMN 2.0 standard.
- Execute workflows automatically through Camunda's robust workflow engine.
- Monitor and analyze processes with built-in tools.
- Collaborate seamlessly with stakeholders using an intuitive interface.

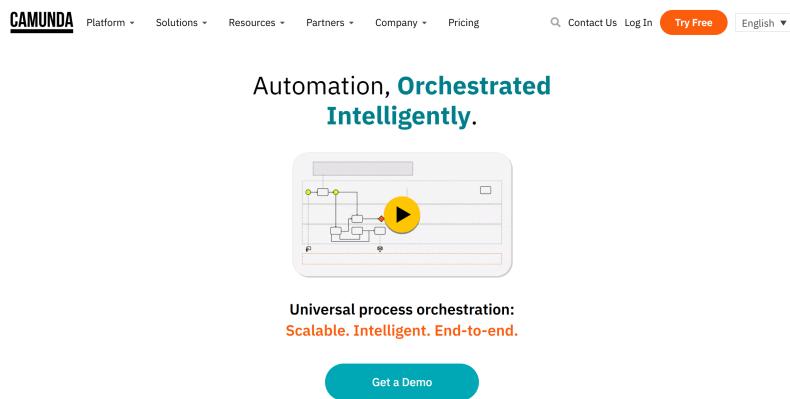


Figure 1: Camunda Main Page

2.2 Features

Camunda offers a range of features tailored to streamline process management:

- **Open Source:** A flexible platform allowing customization and implementation freedom.
- **Standard Compliance:** Supports BPMN 2.0, CMMN, and DMN standards.
- **Workflow Engine:** Efficiently executes complex processes with reliability.
- **Monitoring and Analysis Tools:** Provides comprehensive process insights.
- **Intuitive Interface:** User-friendly design facilitates ease of use across organizations.
- **Extendability:** Easily extendable using plugins and APIs.

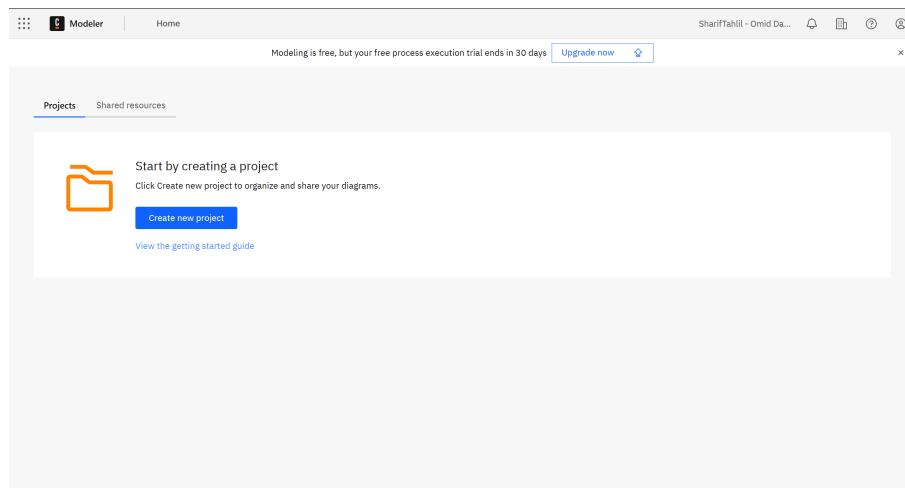


Figure 2: Camunda Dashboard

2.3 Pricing

Camunda offers three subscription tiers to cater to different user needs:[2]

Free	Starter	Enterprise
<p>For collaborative modelling using BPMN/DMN</p> <p>€0</p> <p>Plan after trial ends</p> <p>Included in the plan</p> <ul style="list-style-type: none"> ✓ Unlimited BPMN/DMN models ✓ Up to 5 users to collaborate ✗ Process execution 	<p>For proof of concept development with options to go live with low-volume automation projects</p> <p>Starts at €99/month</p> <p>Paid monthly via credit card in USD/EUR/GBP</p> <p>Upgrade to keep all the features</p> <p>Included in the monthly usage ⓘ</p> <ul style="list-style-type: none"> ✓ Unlimited BPMN/DMN models ✓ 10 Users to collaborate ✓ 1 development cluster for execution ✓ Unlimited process/decision instances and task users for development/testing ✓ Additional usage/add-ons available 	<p>For high-volume automation and organizations with Enterprise-level requirements</p> <p>Custom pricing</p> <p>Paid annually via invoice</p> <p>Request quote</p> <p>Included in the annual usage</p> <ul style="list-style-type: none"> ✓ Unlimited BPMN/DMN models ✓ Unlimited users to collaborate ✓ High performance clusters ✓ High-volume process instances ✓ High-volume decision instances ✓ High-volume task users

Figure 3: Camunda Pricing Plans

• Free

Ideal for collaborative BPMN/DMN modeling:

- Unlimited BPMN/DMN models.
- Up to 5 users for collaboration.
- Process execution.
- Community support.

• Starter

Suitable for proof-of-concept development:

- 99 euros/month.
- Unlimited BPMN/DMN models.
- 10 users for collaboration.
- 1 development cluster for execution.
- Additional features like SSO, SAML, and 8x5 technical support.

• Enterprise

Designed for large-scale automation with custom pricing:

- Unlimited BPMN/DMN models and users.
- High-performance clusters.
- Advanced technical support (24/7).
- Custom training and consulting.

2.4 Pros & Cons

Pros.

- **Open Source:** Flexible and customizable.
- **Standards Compliance:** Fully supports BPMN 2.0 and related standards.
- **Powerful Workflow Engine:** Handles complex workflows efficiently.
- **Scalability:** Suitable for small to large projects.

Cons.

- **Complexity:** Steep learning curve for new users.
- **Cost:** Advanced features require paid plans.
- **Technical Expertise:** Requires knowledge of BPMN and Java for full utilization.
- **Scalability Challenges:** Potential limitations for extremely large projects.

2.5 Usage Guide

Logging In. Create an account[3] on the Camunda website to access a 30-day free trial. After logging in, you will see the main interface:

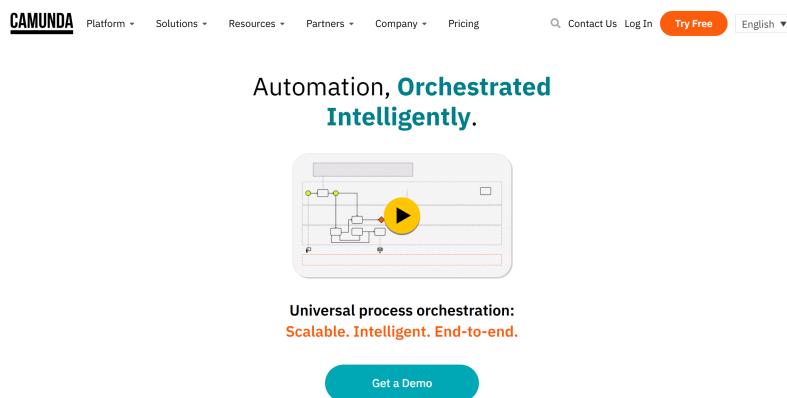


Figure 4: Login Interface

Designing a BPMN. Use the design section to model workflows visually using BPMN standards.

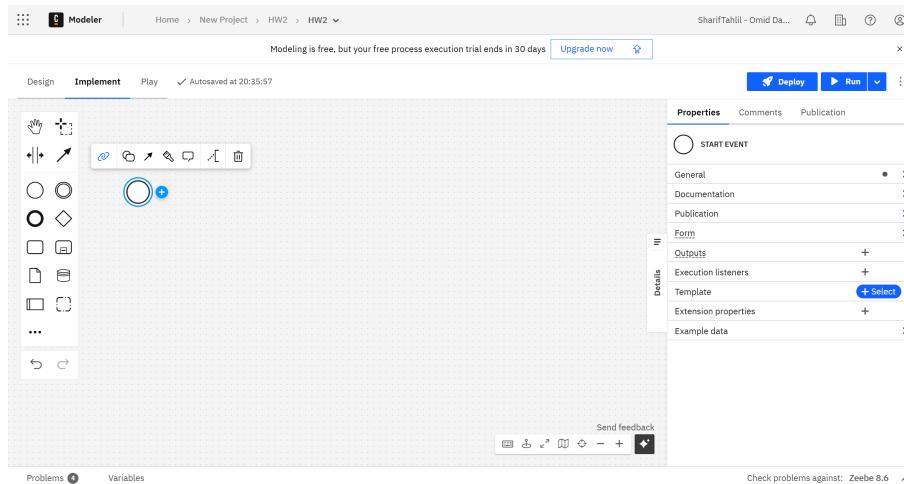


Figure 5: BPMN Design Interface

Executing a BPMN. Execute your BPMN models and monitor their performance on a cluster.

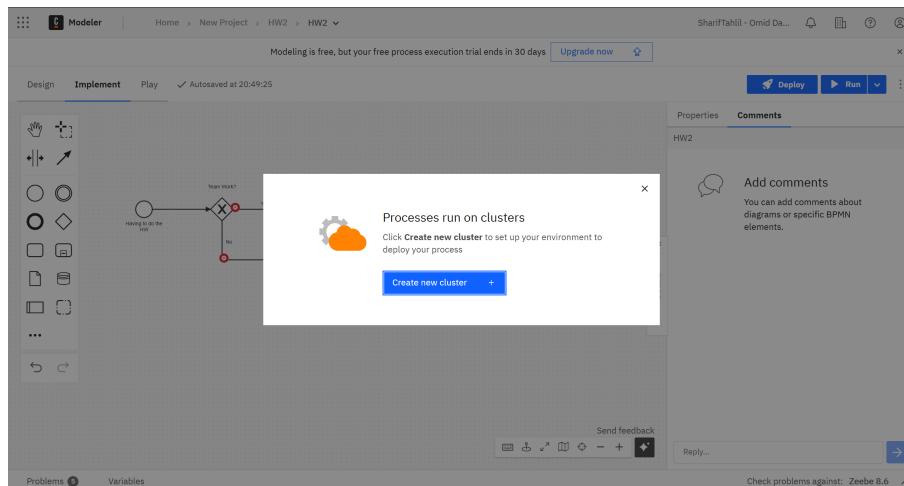


Figure 6: Running BPMN on a Cluster

Example Workflow. Here is an example of a BPMN designed for managing a homework assignment:

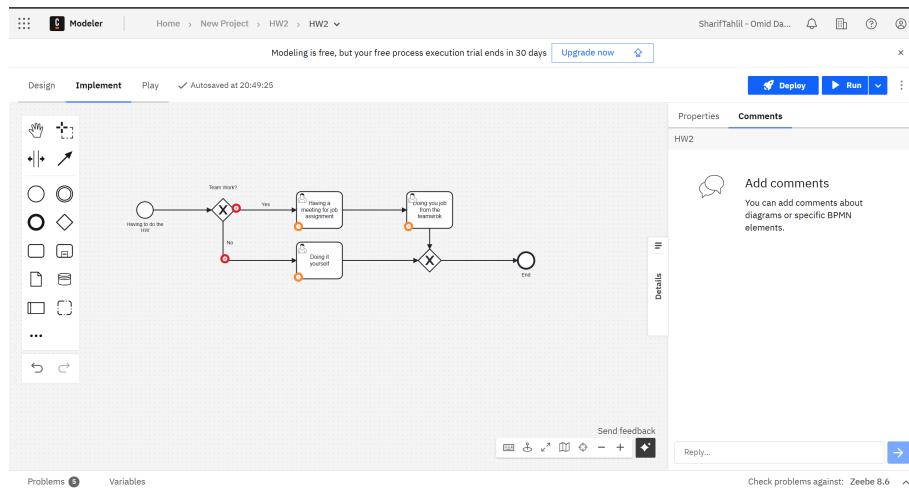


Figure 7: BPMN Example: Homework Management

3 Zoho



Figure 8: Logo of the Zoho Software

3.1 Overview

Zoho [4], founded in 1996 by the Indian corporation Zoho, is a popular and highly regarded platform for managing projects and customer relationships. Over 250,000 companies worldwide [5] use Zoho's tools. It offers a wide range of features to help businesses efficiently manage projects, customers, and their associated details. Zoho is suitable for businesses of all sizes, from small startups to large enterprises.

3.2 Features

First, we will discuss some general features we observed while using Zoho. Zoho offers numerous functionalities, making it a highly flexible and user-friendly platform. It provides an amazing environment for interacting with customers and delivering after-sales support. Additionally, unique features, such as company-specific email addresses for customer communication, further enhance its usability.

Next, we will elaborate on the features highlighted by Zoho [6] as some of its main capabilities. These features are divided into several categories for better understanding.

Sales Force Automation. helps save time by automating repetitive tasks in sales, marketing, and support. It speeds things up by cutting out manual work and streamlining workflows.

- **Lead Management:** Automatically capture, score, and track leads, so you can focus on the ones that matter.
- **Deal Management:** Keep track of deals and close them faster by knowing the right time to act.
- **Contact Management:** Get real-time customer insights to connect better and build stronger relationships.

- **Workflow Automation:** Automate routine tasks like follow-ups.

Process Management It is used so sales teams stay on track by clearly defining what to do at each stage of the pipeline, ensuring everyone follows the same steps.

- **Sales Process Builder:** Turn your offline sales processes into digital workflows that all team members can consistently follow.
- **Processing Rules:** Set rules to automate tasks like assigning leads, approving discounts, or validating sales data.
- **Review Process:** Keep your CRM data clean by creating a system for reviewing and approving incoming information with comments.

Journey Orchestration In order to help businesses design personalized customer experiences using tools like CommandCenter. It provides real-time insights into customer journeys, allowing organizations to create intuitive journey maps and coordinate efforts across teams and apps for a seamless brand experience. Detailed reports help identify delays or gaps in the process and enable improvements.

- **Path Finder:** A unique tool to discover customer behavior and pinpoint any issues they might face.
- **Journey Builder:** A drag-and-drop editor for creating cross-platform customer journeys and optimizing brand responses.

Omnichannel The feature helps businesses interact with customers and prospects across multiple platforms in real time. It notifies us when someone engages with our brand, whether they're browsing our website, reading emails, or talking about our brand on social media, ensuring seamless communication.

- **Email:** Manage all email communication directly within Zoho CRM. Send emails, link them to CRM records, and gain insights from email interactions.
- **Phone:** Integrate your phone system to make calls, set reminders, and log call details-all from Zoho CRM.
- **Social:** Track mentions of your brand on social media and automatically capture new leads who engage with your content.
- **Customer Portals:** Provide a self-service portal for prospects, allowing them to explore our products and make informed purchasing decisions.

Analytics Provides businesses with the tools to measure performance and make informed decisions as they grow. It helps track every sales activity and break down quotas into manageable targets using reports, analytics, and forecasts.

- **Reports:** Real-time insights into metrics like sales trends, marketing campaign effectiveness, activity tracking, and team performance.
- **Analytical Components:** Build dashboards, monitor trends, and track key performance indicators to stay aligned with our goals.
- **Capabilities:** Use data-driven insights to make smarter business decisions and support growth.

Sales Enablement Gives our team tools to simplify their workflow and focus on closing deals. From generating quotes to managing partner collaborations, it ensures a smoother sales process while saving time and effort.

- **Quotes and Finance:** Easily generate quotes, invoices, and orders while accessing inventory, shipping, and subscription details directly in Zoho CRM.
- **Partner Portals:** Empower partners to manage leads, track inventory, and view their contacts, helping grow our business collaboratively.
- **Calendar:** Centralize all our calendars in one place, set reminders, and create recurring events with ease.
- **Google Workspace and Office 365 Integration:** Seamlessly integrate Zoho CRM with our work hubs to eliminate the need for switching between platforms.

Performance Management Helps boost our sales team's productivity with tools like accurate revenue forecasting, AI-based lead prioritization, and even gamification to keep the team motivated. It ensures better customer categorization, efficient territory management, and improved sales tracking.

- **Forecasting:** Predict future sales more accurately and compare them to current performance to stay on track.
- **Territory Management:** Organize customers by relevant criteria, assign sales reps strategically, and gain insights for better region-wide performance.
- **Gamification:** Motivate our team by awarding badges and trophies for meeting or exceeding sales quotas.

Predictive Sales and Intelligence (AI) Uses Zia, an AI assistant integrated into Zoho CRM, to simplify managing CRM data and boost productivity. Zia helps with tasks like fetching data, taking notes, predicting sales outcomes, detecting anomalies, and automating repetitive processes.

- **Hey Zia!:** A AI assistant that can provide insights like monthly revenue, manage CRM data, and automate tasks.
- **Lead & Deal Prediction:** Zia predicts the success likelihood for each lead and deal, making it easier for our team to prioritize efforts.
- **Zia Voice:** A conversational assistant that can perform everyday tasks like taking notes and calculating sales figures-all through natural conversations.
- **Macro Suggestions:** Zia observes patterns in daily activities and suggests macros to automate repetitive tasks, saving time and effort.

Customization It lets businesses tailor their CRM to meet their unique needs, ensuring a better fit for their processes, data, and operations. From the information collected to how it's displayed, everything can be personalized.

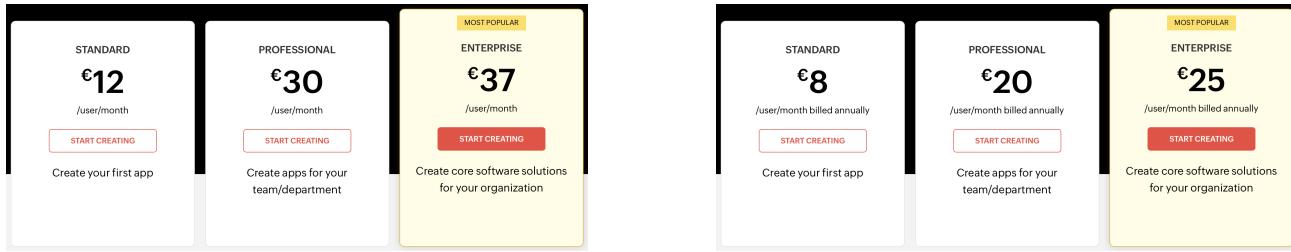
- **Layouts:** Design custom layouts for specific processes, control the data flowing into our CRM, and improve efficiency.
- **Custom Components:** Add custom modules, fields, and buttons to display the information that matters most to our business.
- **Views and Filters:** Easily focus on important data with personalized views and advanced filters for quick access.
- **Global Selling:** Enable multi-language and multi-currency support, making it easier to serve customers worldwide.

There are some other ones too, which you can find in [6].

3.3 Pricing

[4] Zoho offers three types of subscriptions: Standard, Professional, and Enterprise. Each tier is more advanced and correspondingly more expensive than the previous one. According to Zoho's website, the differences between these plans lie in areas such as Application and Data Management, Workflow Automation, Integrations, Business Intelligence and Analytics, Portals, Privacy, Security and Governance, Developer Tools, and Support. Based on our observations, each plan provides incremental advantages over the preceding tier.

The figure 9 displays both the monthly and yearly prices, with the yearly rates being approximately 30% lower. Additionally, Zoho offers a two-week trial period for new users, which allowed us to explore its features for preparing this document.



(a) Zoho's monthly pricing

(b) Zoho's yearly pricing per month

Figure 9: Pricing of Zoho for each tier, both yearly and monthly

3.4 Pros & Cons

Pros. [7, 8]

- Offers good value for the price, making it accessible.
- Highly customizable. It allows businesses to tweak the platform to meet their specific needs.
- Connects seamlessly with other Zoho apps as well as third-party applications.
- Dedicated programs for migration, deployment, and training help businesses easily move to Zoho
- You do not need coding skills to set up or manage Zoho CRM.
- Storing data on the cloud is simple and convenient.

Cons. [7, 8]

- While having a lot of features sounds great, users often find the 50+ applications confusing and hard to navigate, especially for beginners.
- Not beginner-friendly. New businesses might struggle to get comfortable with Zoho.
- Some users feel that Zoho's workflows are less intuitive compared to competitors.
- The reporting tools could be more robust and easier to use.
- Certain parts of Zoho CRM are reported to be slow, which can impact productivity.

- Editing and customizing email templates can be frustrating at times.
- Cannot easily access with and without VPN. You should keep to a region. Either use VPN all the time or do not use it.

3.5 Usage Guide

In this section, we will take a visual tour of some parts of Zoho to help you get more familiar with the platform. [4]

Note that, you can access Zoho from Iran but if you use a VPN to make our account and you connect to their Europe data center, then you cannot access it without a VPN anymore.

Sign Up. The first step is to sign up. You can either use your google account to sign up or simply fill the form in figure 10. If you fill the form, there is one step of verification of the details too. Using a new account gives you 15 days of free trial.

Zoho Creator

Start your 15-day free trial.

Name *

Business email *

Password *

Phone Number *

Your data will be stored in the EU data center.

Yes, I would like to receive marketing communication regarding [Zoho's products, services, and events](#) from Zoho and its regional partners.

I agree to the [Terms of Service](#) and [Privacy Policy](#).

SIGN UP FOR FREE

Figure 10: Sign Up page for Zoho

Making an Application You can either make an application from scratch or use one of the many prebuilt templates which we have shown some of them in figure 11.

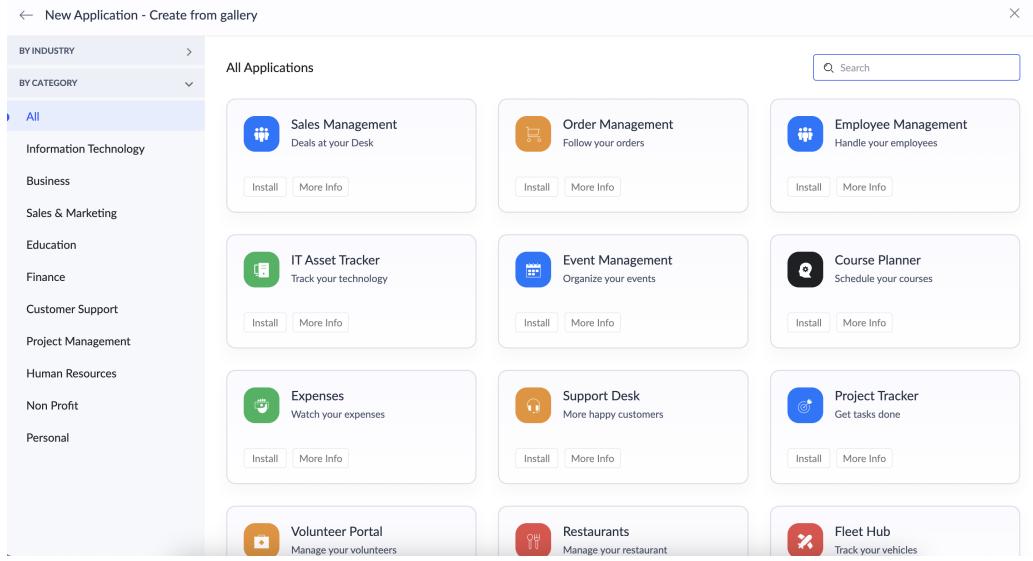


Figure 11: Applications page of Zoho

Project Tracker One application is the project tracker. In figures 12 and 13 we observe that we can simply make a project for the homework and then add tasks accordingly. It gives us an overview of the tasks and details of the project too.

The screenshot shows the 'Project Tracker' application interface. At the top, there's a navigation bar with links like Dashboard, Portal, My Data, Data, Reports, Quick Links, Cost, Employees, Profile, Contacts, Help, and a user profile for 'natasha milli'. Below the navigation is a search bar labeled 'Go to Project' with 'Tahill HW2' selected. There are buttons for 'Add Milestone', 'Generate Quote', and 'Generate Invoice'.

The main content area displays the project details for 'Tahill HW2':

- Start Date**: 29-Nov-2024
- Due Date**: (empty)
- End Date**: (empty)
- Expected Hours**: 3.00
- Expected Revenue**: 0.0
- Revenue**: 0.0
- Project Status**: Open

Below these details is a section for the **Customer**, showing contact information for 'tahill' (Email: tahill@gmail.com, Mobile: empty).

There are tabs for **Contacts** and **Users**. Under **Users**, it lists Manager, Owner, and Followers.

The right side of the screen shows a table for **Requirements**:

	Title	Expected Ho...	Manager	Status
View	Text	2.00	New	
View	Figures	1.00	New	

Figure 12: Project Tracker main page of Zoho

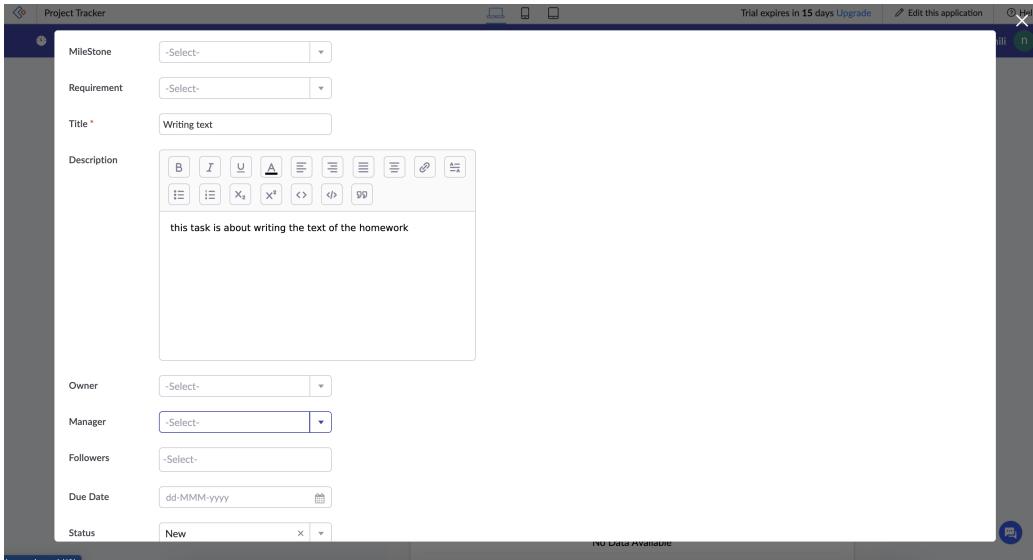


Figure 13: Project Tracker Task page of Zoho

CRM Next, we explore the CRM module, which is a crucial component of Zoho software. The CRM homepage provides an intuitive overview of all key aspects, including deals, leads, meetings, tasks, and other critical data points, as shown in Figure 14. This dashboard ensures that users have immediate access to the most important information.

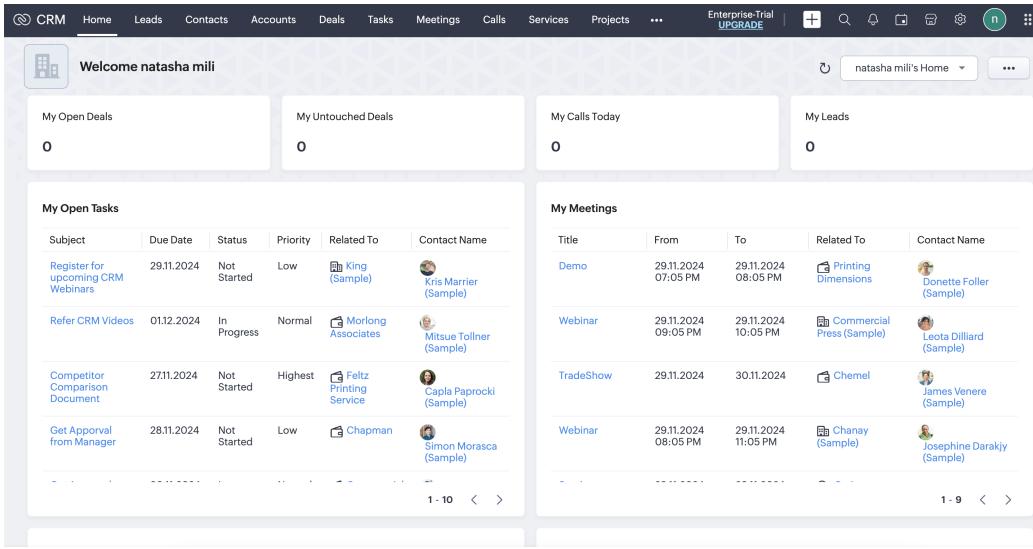


Figure 14: CRM Home page of Zoho

Deals. The Deals page, shown in Figure 15, allows users to manage ongoing business opportunities with ease. You can add a new deal by entering the relevant details, such as the deal name, stage, value, and expected closure date. The page also provides an organized overview of all the details.

The screenshot shows the Zoho CRM Deals page. At the top, there's a navigation bar with links for CRM, Home, Leads, Contacts, Accounts, Deals, Tasks, Meetings, Calls, Services, Projects, and more. A prominent 'Create Deal' button is located in the top right. The main area features a grid of deals, each represented by a card. The columns in the grid are labeled 'Qualification', 'Needs Analysis', 'Value Proposition', and 'Identify Decision Maker'. Each card contains the deal name, its current stage, value, and some descriptive text about the deal's progress or requirements. On the left side of the grid, there's a sidebar titled 'Filter Deals by' with sections for 'System Defined Filters' and 'Filter By Fields'. The 'System Defined Filters' section includes options like 'Touched Records', 'Untouched Records', and 'Record Action'. The 'Filter By Fields' section includes options like 'Account Name', 'Amount', and 'Campaign Source'. At the bottom of the grid, there's a 'Create Deal' button and a small navigation icon.

Figure 15: CRM Deals page of Zoho

Leads. Leads, which represent potential customers, are fully manageable through the Leads section (Figure 16).

The screenshot shows the Zoho CRM Leads page. The layout is similar to the Deals page, with a navigation bar at the top and a 'Create Lead' button in the top right. The main area displays a grid of leads. The columns in the grid are 'Lead Name', 'Company', 'Email', 'Phone', 'Lead Source', and a status indicator. Each row in the grid represents a lead record with specific contact information and source details. To the left of the grid, there's a sidebar titled 'Filter Leads by' with sections for 'System Defined Filters' and 'Filter By Fields'. The 'System Defined Filters' section includes options like 'Touched Records', 'Untouched Records', and 'Record Action'. The 'Filter By Fields' section includes options like 'Annual Revenue', 'City', 'Company', 'Converted Account', and 'Converted Contact'. The grid also includes standard navigation controls like '10 Records Per Page' and a page number indicator '1-10'.

Figure 16: CRM Leads page of Zoho

Meetings. The Meetings page (Figure 17) allows users to schedule, view, and manage all customer and internal meetings in one place. Adding a new meeting is straightforward-users can specify details like date, time, attendees, and the purpose of the meeting.

The screenshot shows the Zoho CRM Meetings page. At the top, there is a navigation bar with links for CRM, Home, Leads, Contacts, Accounts, Deals, Tasks, Meetings, Calls, Services, Projects, and more. A "Create Meeting" button is prominently displayed. The main area is titled "Total Records 9" and contains a table of scheduled meetings. The columns in the table are: Ti... (Type), All (Status), From, To, Related To, Contact Name, Host, and a secondary column for Contact Name. The table lists nine meetings, each with a small icon next to the "Related To" field. On the left side of the table, there is a sidebar with filtering options under "Filter Meetings by". The sidebar includes sections for "System Defined Filters" (Touched Records, Untouched Records, Record Action, Related Records Action) and "Filter By Fields" (All day, Check-In Address, Check-In By, Check-In City, Check-In Country, Check-In State, Check-In Sub-Locality, Check-In Time, Checked In Status, Contact Name, Created By). There is also a search bar and a "Create Meeting" button at the top of the sidebar.

Figure 17: CRM Meetings page of Zoho

Tasks. Tasks are managed in a dedicated page, shown in Figure 10. Here, users can track what has been completed, what is currently in progress, and what is pending. Tasks can be easily edited, updated with new details, and assigned to specific team members. It is visually presented in Figure 18.

The screenshot shows the Zoho CRM Tasks page. At the top, there's a navigation bar with links for CRM, Home, Leads, Contacts, Accounts, Deals, Tasks, Meetings, Calls, Services, Projects, and more. A banner indicates "Enterprise-Trial UPGRADE". Below the navigation is a search bar and a "Create Task" button. The main area is divided into four columns based on task status:

- Not Started (3):**
 - Register for upcoming CRM Webin... (29.11.2024, Low priority, natasha mili, Kris Marrier (Sample), King (Sample))
 - Competitor Comparison Document (27.11.2024, Highest priority, natasha mili, Capila Paprocki (Sample), Feltz Printing Service)
 - Get Approval from Manager (28.11.2024, Low priority, natasha mili, Simon Morasca (Sample), Chapman)
- Deferred (0):**

No Tasks found.
- In Progress (7):**
 - Refer CRM Videos (01.12.2024, Normal priority, natasha mili, Mitsue Tolliner (Sample), Morlong Associates)
 - Get Approval from Manager (30.11.2024, Normal priority, natasha mili, Leota Dillard (Sample), Commercial Press)
 - Get Approval from Manager (30.11.2024, High priority, natasha mili, Kris Marrier (Sample), King (Sample))
 - Register for upcoming CRM Webin... (02.12.2024, Normal priority, natasha mili, Theola Frey (Samp...))
- Completed (2):**
 - Complete CRM Gr... (29.11.2024, Highest priority, natasha mili, John Butt (Sample), Benton)
 - Complete CRM Gr... (02.12.2024, Normal priority, natasha mili, Theola Frey (Samp...))

On the left, there's a sidebar with a search bar and filter sections for "System Defined Filters" and "Filter By Fields".

Figure 18: CRM Tasks page of Zoho

4 BPMN.io

4.1 Overview

BPMN.io is a powerful, open-source web toolkit developed by Camunda for creating, visualizing, and editing business process diagrams using the BPMN 2.0 standard. The platform is tailored to meet the needs of developers, process managers, and organizations by offering robust tools for modeling, annotating, and integrating workflows. [9]

One of the standout features of BPMN.io is its **web-based nature**, making it accessible on any operating system without requiring installation. Users can begin working immediately, as no account is necessary to access the basic features. However, creating an account unlocks additional functionalities, such as saving projects, organizing diagrams, and inviting teammates for collaborative work.

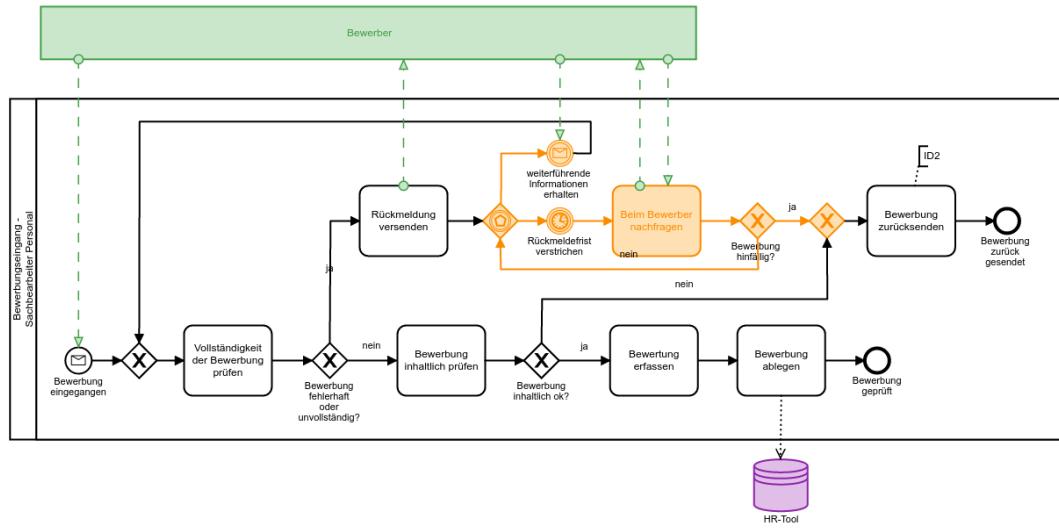


Figure 19: One Example of using BPMN.io

4.2 Features

- **BPMN Viewer and Editor:** Enables creation and editing of BPMN 2.0 diagrams with drag-and-drop functionality.
- **DMN and CMMN Support:** Tools for modeling decisions and case management.
- **Form-js:** A lightweight builder for designing and rendering forms.
- **Desktop Application:** Offers offline support with features like multi-tabbed diagram management and XML editing.

- **Customization:** Provides APIs for seamless integration and custom development.

4.3 Pricing

BPMN.io is completely free to use, with no paid version available. While it provides an extensive set of features suitable for most modeling tasks, it lacks some advanced capabilities commonly found in paid BPMN tools. Despite these limitations, BPMN.io is robust enough to meet the requirements of most typical business process modeling projects.

Notable features absent from BPMN.io include:

- **Advanced Integration Capabilities:** No built-in support for seamless integration with enterprise systems like ERP or CRM.
- **Simulation and Process Optimization:** Does not provide tools for running process simulations or optimizing workflows.
- **Advanced Reporting and Analytics:** Lacks in-depth reporting and analytics features for data-driven decision-making.
- **Technical Support and Training:** Being an open-source platform, it does not offer dedicated customer support or formal training resources.

4.4 Pros & Cons

Pros. BPMN.io offers several advantages, making it suitable for a range of users: [10]

- **Free and Open Source:** BPMN.io is entirely free, making it accessible to all users.
- **Web-Based:** Accessible directly through a browser without installations.
- **Intuitive User Interface:** Offers a user-friendly interface for easy diagram creation.
- **Extensibility:** As an open-source tool, BPMN.io is highly customizable and extensible.
- **Standards-Compliant:** Fully adheres to the BPMN 2.0 standard for interoperability.
- **Export and Import Features:** Supports exporting diagrams in formats such as SVG, PNG, and BPMN for sharing and presenting models.
- **Cross-Platform:** Available as a web, desktop, and offline tool.

Cons. However, there are some disadvantages to consider:

- **Limited Advanced Features:** Lacks features like simulation, advanced analytics, and detailed reporting found in paid BPMN tools.
- **Lack of Integrated Collaboration:** Does not support real-time collaboration or teamwork directly within the tool.
- **Limited Support and Documentation:** As an open-source project, it may not offer comprehensive support or detailed tutorials compared to paid tools.
- **No Direct Integration with Other Systems:** Does not include built-in integration with enterprise systems like ERP, CRM, or Workflow Management Systems.
- **Security and Data Privacy:** As a web-based tool, it raises potential concerns about data security and privacy, particularly for sensitive processes.

4.5 Usage Guide

Using BPMN.io provides a smooth and efficient experience for designing and managing process flowcharts. Its user-friendly drag-and-drop interface facilitates the rapid creation of diagrams, while the wide range of features allows users to modify and enhance their designs effortlessly. The platform's adherence to the BPMN standard ensures that diagrams are compliant with industry norms, making them easily shareable and comprehensible for both team members and stakeholders.

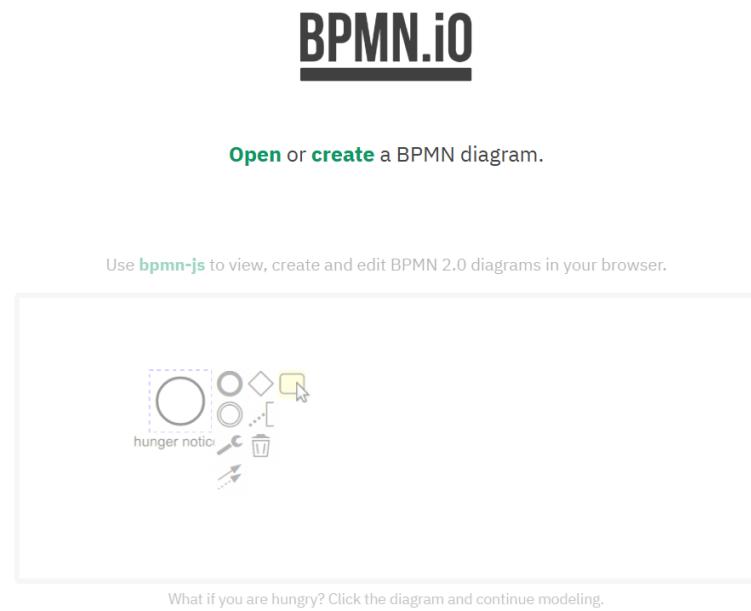


Figure 20: First Page of Working Interface

As you can see, you can create a new diagram or open your diagram. After opening a blank project and diagram, you see this page:



Figure 21: Main Page of a Project

Now you can start! You have all things you need. Tasks, events, groups, pools and references.

First, start with creating a pool:

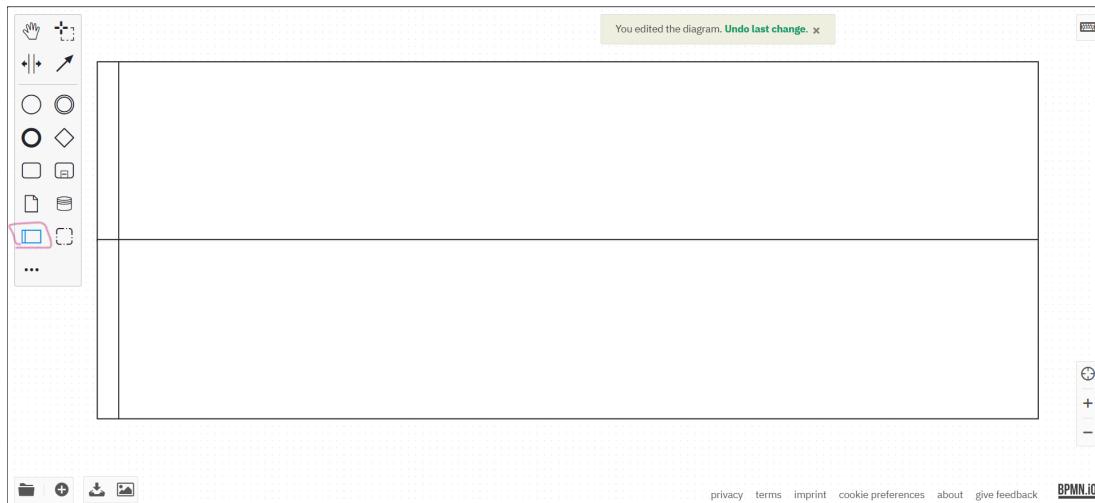


Figure 22: Creating a Pool

Now, let's go further and draw a complete diagram. When you choose an option and drag and drop it on the page, you have different options for it that some of them relates to events.

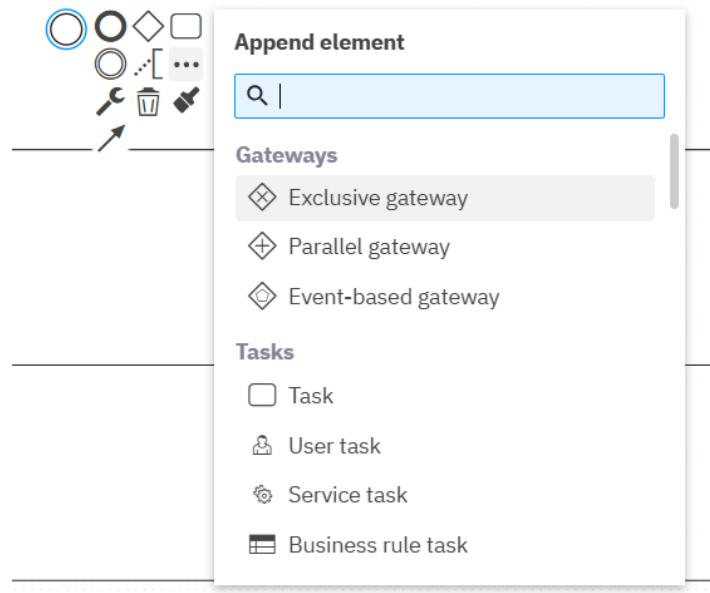


Figure 23: Options for each object

You have all the options for everything you need. For example let's see the events:

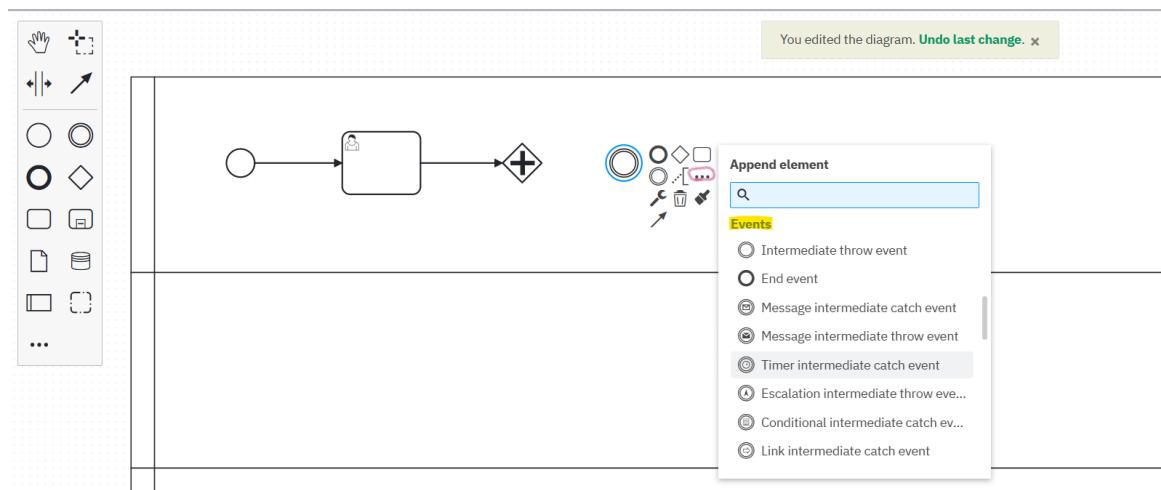


Figure 24: Options for events

Now, a very small diagram:

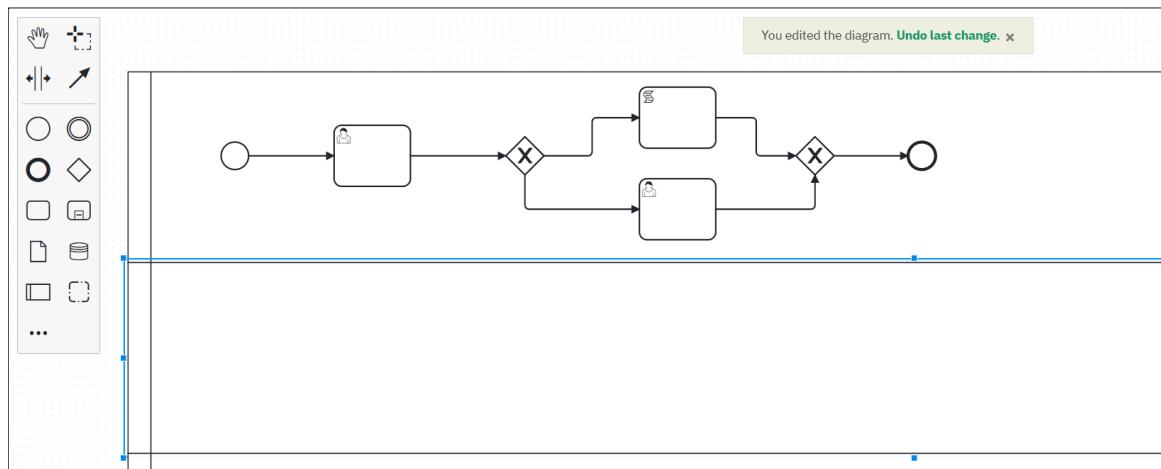


Figure 25: A small diagram is drawn with BPMN.io

5 Miro

5.1 Overview

Miro is a highly versatile, collaborative digital whiteboard platform designed to help teams, organizations, and individuals engage in creative brainstorming, workflow management, and project planning. As remote and hybrid work environments have grown increasingly common, Miro has emerged as one of the most popular platforms for teams to connect, ideate, and share ideas in real time.

Miro stands out from traditional digital collaboration tools by providing an infinite canvas, allowing users to freely visualize and manipulate ideas without spatial constraints. Whether you're mapping a business process, creating a user journey map, or working through design prototypes, Miro's features support a wide range of project types. The platform's core strength lies in its simplicity combined with powerful, customizable tools, making it accessible to both beginner and advanced users.

What makes Miro especially valuable is its ability to integrate with various third-party tools like Slack, Google Workspace, Jira, and Microsoft Teams. These integrations allow teams to connect their work across multiple platforms, ensuring that Miro becomes a central hub for ongoing projects. Additionally, its collaborative capabilities, such as real-time editing, voting, and commenting, ensure that teams remain aligned regardless of geographic location or time zone. With over 50 million users worldwide, Miro is not just a tool for creating visuals, but a comprehensive platform for facilitating teamwork and innovation.

5.2 Features

Miro is packed with features designed to improve team collaboration and project management. Below are the key functionalities that make Miro an effective and popular tool [11]:

- **Infinite Canvas:** At the core of Miro's design is the infinite canvas, which serves as a limitless workspace for users to organize thoughts, create diagrams, or manage complex projects. Unlike traditional whiteboards or document-based tools that have predefined space constraints, the infinite canvas in Miro allows users to zoom in and out, move freely between sections, and create large-scale visual representations of ideas. This flexibility is particularly useful for brainstorming sessions, mind mapping, and developing complex workflows.
- **Templates and Frameworks:** Miro offers a large library of pre-built templates for a variety of use cases. These templates provide starting points for projects such as agile workflows, business process modeling (BPMN), customer journey mapping, and design thinking exercises. By using these templates, teams can save time, ensure consistency, and structure their work according to best practices. The library is regularly updated to include new templates based on user feedback and emerging trends [12].
- **Real-Time Collaboration:** Miro's real-time collaboration capabilities allow multiple users to simultaneously work on the same board, making it ideal for teams that need to brainstorm or

discuss ideas in real time. Changes made by one user are instantly reflected for all participants. This feature ensures that every team member has the latest version of the board, reducing confusion and improving the efficiency of collaborative sessions. The platform also includes built-in video calling and chat features, enabling seamless communication without leaving the app.

- **Integration with Other Tools:** Miro integrates with a wide range of third-party tools, including Slack, Jira, Trello, Google Drive, Microsoft Teams, and Asana. These integrations enable teams to work more efficiently by connecting Miro to their existing workflows and business systems. For example, teams can import tasks from Jira directly into Miro, where they can visualize and prioritize them on the board. Similarly, files from Google Drive or Dropbox can be embedded within Miro boards for easy access and collaboration.
- **Sticky Notes and Shapes:** The drag-and-drop interface allows users to easily add and manipulate elements like sticky notes, text boxes, arrows, shapes, and connectors. These elements can be customized with different colors, sizes, and shapes to match specific needs. The sticky notes, in particular, are useful for capturing ideas during brainstorming sessions, while the shapes and connectors help users organize their ideas into structured workflows and processes.
- **Voting and Feedback Tools:** Miro includes tools for gathering feedback and making group decisions. The voting feature allows team members to vote on ideas or prioritize tasks in real time. This is particularly useful during workshops or meetings, where team members can quickly weigh in on different options. The commenting feature allows users to leave feedback directly on specific elements of the board, facilitating structured discussions and ensuring that important points are not overlooked.
- **Export and Presentation Mode:** Once a project is complete, Miro allows users to export their work in various formats such as PNG, PDF, or image files. This is ideal for sharing the results with stakeholders or presenting the work to a wider audience. Additionally, Miro includes a presentation mode that turns your board into a slideshow, allowing you to walk through your work step-by-step in a more formal presentation setting.

5.3 Pricing

Miro offers flexible pricing plans to meet the needs of different teams and organizations, from individual users to large enterprises. Each plan provides access to a set of features that scale according to the size and requirements of the team [13].

- **Free Plan:** The free plan is perfect for individuals or small teams just starting with Miro. It offers access to three editable boards, essential collaboration tools like real-time editing and commenting, and a basic set of templates. While this plan is limited, it provides all the basic functionality necessary to get started.

- **Starter Plan:** Priced at \$8 per user per month, the Starter plan unlocks unlimited boards, private board sharing, and additional integrations with other tools such as Google Drive and Slack. This plan is ideal for small teams or startups that require more flexibility than the free plan offers but don't yet need the advanced features of the Business or Enterprise plans.
- **Business Plan:** For \$16 per user per month, the Business plan provides more robust features such as advanced collaboration tools, custom branding, and priority support. Teams that need to collaborate on larger projects and require access to more advanced integrations will benefit from this plan. It also includes administrative controls for managing team access and permissions.
- **Enterprise Plan:** The Enterprise plan is available for custom pricing and is designed for large organizations with complex needs. It includes enterprise-grade security features, such as single sign-on (SSO), custom user roles, and dedicated customer support. It also provides advanced analytics to help organizations track team activity and measure performance.

Miro offers discounts for annual billing, making it a more cost-effective option for teams that plan to use the platform long-term.

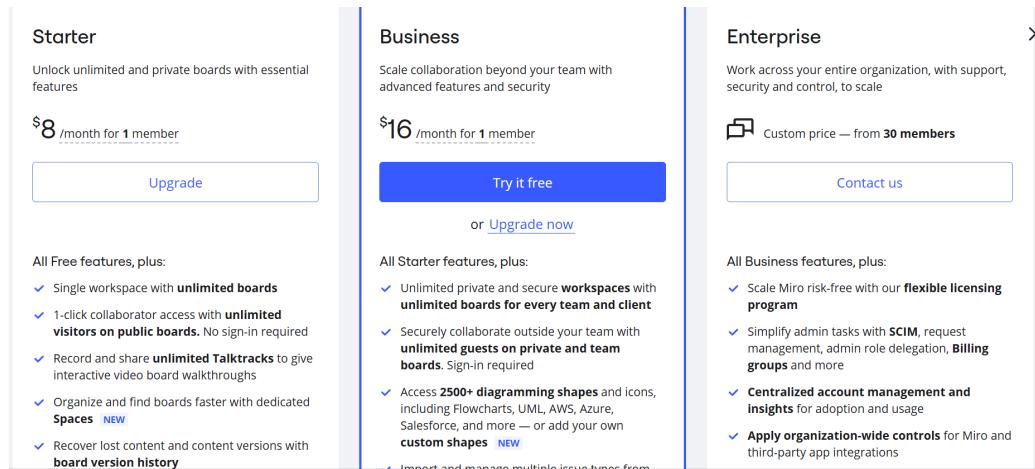


Figure 26: Pricing for Miro

5.4 Pros & Cons

Miro's versatility and wide range of features make it a highly effective tool for many teams, but like any platform, it comes with its strengths and limitations.

Pros:

- **Ease of Use:** Miro's intuitive, drag-and-drop interface makes it easy for users to get started, even with little to no prior experience. The platform's user-friendly design minimizes the learning curve, enabling teams to begin collaborating immediately.

- **Real-Time Collaboration:** The ability to work together on the same board simultaneously, with all changes updated in real time, makes Miro ideal for teams working remotely or in distributed settings. This feature ensures that everyone stays on the same page and that the collaboration process is efficient.
- **Extensive Template Library:** Miro's large collection of pre-built templates allows teams to quickly start projects without spending time creating new structures from scratch. Templates for business processes, brainstorming, roadmaps, and more help teams save time and maintain consistency.
- **Flexibility:** Whether it's for brainstorming, project planning, or process management, Miro is flexible enough to meet the needs of a wide range of industries. It can be used for design thinking, agile workflows, and even remote workshops.

Cons:

- **Pricing for Premium Plans:** While the free plan is sufficient for many users, the cost of the premium plans may be prohibitive for smaller teams or startups. Some of the more advanced features are only available in the higher-tier plans.
- **Overwhelming for New Users:** With its wealth of features and customization options, Miro can be overwhelming for beginners. It may take time for new users to learn how to use all the tools effectively, especially if they are unfamiliar with digital collaboration platforms.
- **Limited Export Options in Free Plan:** Users on the free plan have limited options when it comes to exporting their boards. While you can download images or PDFs, more advanced export options like presentation mode and high-resolution images are only available in the paid plans.
- **Internet Dependency:** Miro is a cloud-based tool, so a stable internet connection is essential for smooth operation. Users in areas with poor internet connectivity may experience lag or disruptions while collaborating.

5.5 Usage Guide

To maximize the potential of Miro, follow these steps:

1. **Sign Up and Get Started:** Start by signing up for a Miro account. Choose the plan that best suits your needs—either the free plan to explore the basics or a paid plan for more advanced features. Once you've logged in, you'll be taken to the Miro dashboard, where you can create new boards, access templates, and begin collaborating with your team.

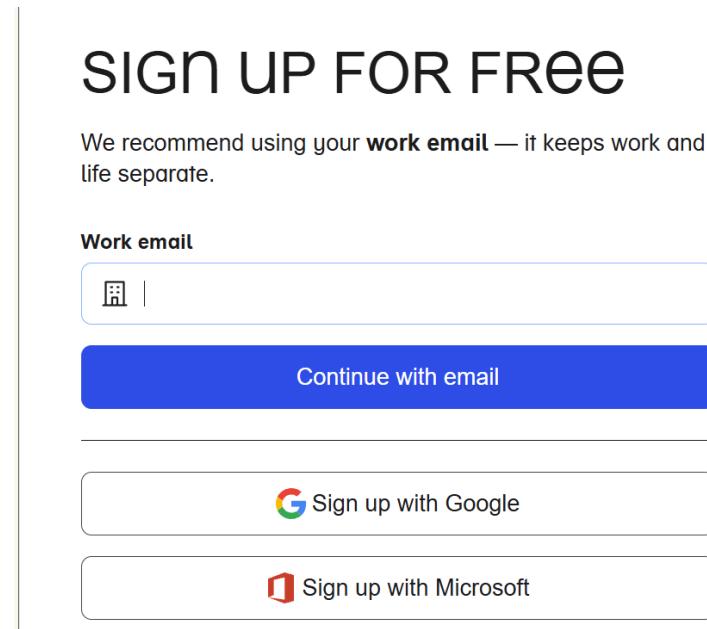


Figure 27: Sign Up page for Miro

2. Create a New Board: When you create a new board, you can either start with a blank canvas or select a template from Miro's library. Depending on your project, you can choose from templates such as BPMN diagrams, wireframes, mind maps, or Kanban boards. These templates help you organize your thoughts and start working immediately, saving you time and effort.

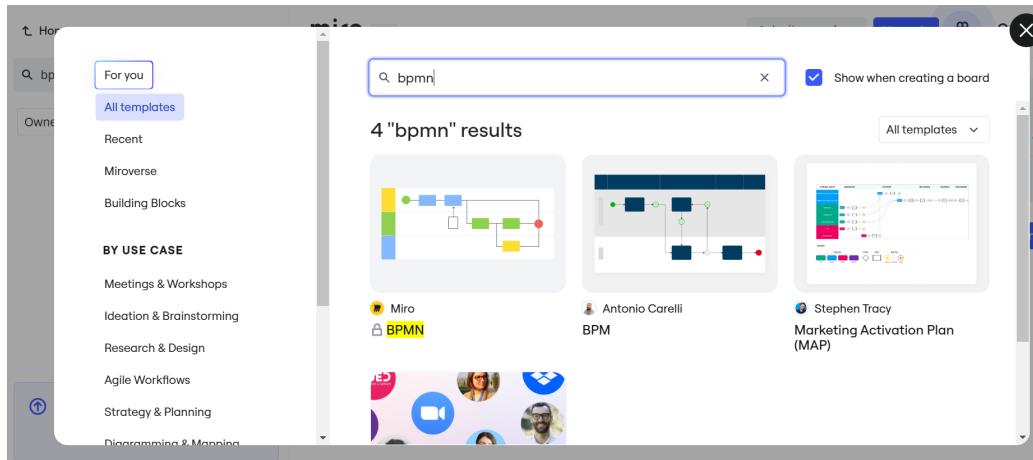


Figure 28: Miro templates

3. Add and Organize Content: Use the drag-and-drop interface to add elements like shapes, arrows, and text boxes for BPMN. Group related items together, change the colors of elements, and

add labels or annotations to improve clarity. You can resize and move elements to create a layout that suits your project. For more advanced users, Miro allows custom shapes, icons, and even imported content from external tools.

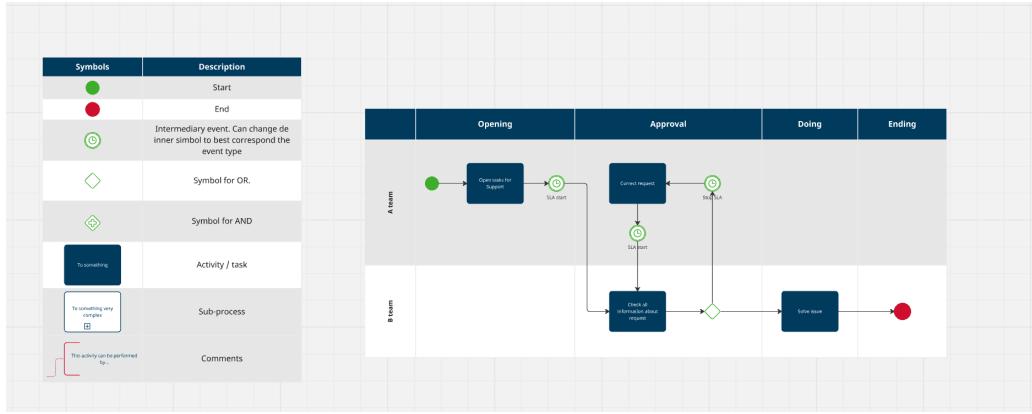


Figure 29: Miro BMPN template

4. Collaborate and Gather Feedback: Invite team members to collaborate on the board in real time. Each user can add comments, suggestions, and edits, with all changes being reflected immediately. Use Miro's built-in chat feature to communicate directly with collaborators, or integrate Miro with Slack to streamline communication. Conduct video calls within Miro itself to discuss ideas in real-time during collaborative sessions.

5. Export and Share: Once you've finished your project, you can export your board in various formats like PNG, PDF, or image files. You can also use Miro's presentation mode to turn your board into a slide deck for presenting to stakeholders or clients. For ongoing projects, you can also save your board within Miro for future reference or update it as necessary.

6 Bonita

6.1 Overview

Bonita BPM [14] is a comprehensive Business Process Management (BPM) platform that enables organizations to design, automate, and optimize their business workflows. It provides a powerful set of tools for modeling, managing, and executing business processes, helping businesses improve efficiency and reduce operational costs. Bonita BPM offers two main editions: the free, open-source Community edition for small businesses and developers, and the feature-rich Enterprise edition for large organizations with complex requirements.

With its intuitive drag-and-drop interface, Bonita BPM makes process modeling and automation accessible to both business users and technical teams. It supports a wide range of integrations, including connectors to external systems, enabling seamless connectivity across platforms. The platform also includes robust reporting and monitoring tools for tracking performance and ensuring continuous improvement.

Bonita BPM's flexibility, scalability, and user-friendly design make it a popular choice for businesses looking to streamline their operations, enhance collaboration, and adapt quickly to changing business needs.

6.2 Features

- **Business Process Modeling:** Offers a drag-and-drop interface for creating visual models of business processes using BPMN 2.0 standards.
- **Process Automation:** Automates workflows and integrates with various systems, applications, and databases to streamline business operations.
- **User Interface Designer:** Allows users to design customized, user-friendly forms and interfaces for end users to interact with process tasks.
- **Collaboration and Task Management:** Provides tools for task assignment, notifications, and team collaboration, ensuring efficient execution of business processes.
- **Business Rules Engine:** Integrates with decision tables and business rules to automatically enforce rules and conditions within processes.
- **Extensibility and Integration:** Supports integration with external systems, APIs, and services, allowing for flexible and scalable BPM solutions.

6.3 Pricing

Bonita BPM offers different pricing tiers for various usage scenarios, with distinctions between the Open Source edition, Access (for small teams or individual users), and Scale (for enterprise or larger-scale use) [15]. Here are the key details for each:

- **Open Source Edition**

- **Free to Use:** The core Bonita BPM engine and tools are available for free under the open-source license (LGPL).
- **Community Support:** Access to the community for support and troubleshooting (no formal support).
- **Basic Features:** Includes BPMN 2.0 process modeling, execution, and integration capabilities, as well as basic human task management and a user interface designer.
- **Customization:** Ability to modify and extend the system to suit specific needs, but requires development expertise.

- **Access Edition**

Subscription-Based Pricing: A paid plan aimed at small teams, typically designed for 1-10 users.

- **Advanced User Interface:** Includes the Bonita UI Designer for building custom user interfaces with a drag-and-drop interface.
- **Single-tenant Cloud Deployment:** Available for cloud-based deployment with a focus on ease of use and faster setup.
- **Basic Collaboration Tools:** Collaborative features to improve team-based workflow management.
- **Support:** Standard support provided by Bonitasoft (vs. community support in the open-source edition).

- **Scale Edition**

Designed for large-scale businesses, organizations with complex workflows, and high transaction volumes. Pricing is customized based on the size of the deployment, number of users, and support options, typically with an enterprise-level subscription.

- **High Availability & Scalability:** Features like clustering, load balancing, and fault tolerance for large or mission-critical environments.
- **Advanced Monitoring:** Tools for business process monitoring, auditing, and reporting for improved visibility.

- **Advanced Security:** Enhanced security and compliance features, including role-based access control (RBAC), multi-factor authentication, and encryption.
- **Advanced Integration:** Integration with enterprise systems like ERP, CRM, and custom legacy applications.
- **Professional Support:** Includes premium support with SLAs, dedicated support teams, and assistance for system integration and deployment.

Capabilities and features	Open Source	Access	Scale
Develop			
> Process Modeling	✓	✓	✓
> Data Modeling	✓	✓	✓
> Forms & Apps Custom Development	✓	✓	✓
> Bonitasoft Public Marketplace (connectors, actor filters, applications)	✗	✓	✓
> Custom Extensions (connectors, actor filters, applications)	✗	✓	✓
> Artifact Repository	✗	✓	✓
> Bonita UI Builder	✗	In option	✓
> Bonita Test toolkit	✗	✗	✓

Figure 30: Features of each version of Bonita

6.4 Pros & Cons

Pros.

- **Open Source:** Bonita BPM offers an open-source edition, making it accessible for small to medium-sized businesses without the need for upfront licensing costs.
- **User-Friendly Interface:** Provides a graphical user interface (GUI) for designing workflows, making it easier for non-developers to create and manage processes.
- **Flexible and Extensible:** The platform supports custom extensions, allowing organizations to tailor the BPM solution to their unique needs.

- **Robust Integration Capabilities:** Bonita BPM supports integration with various systems, databases, and web services, enhancing its ability to fit into existing IT ecosystems.
- **Business Process Simulation:** It allows users to model and simulate business processes before deployment to identify inefficiencies or bottlenecks.
- **Collaboration Features:** The platform supports team collaboration, task management, and communication within workflows, improving organizational efficiency.

Cons.

- **Learning Curve:** While the platform is user-friendly, there is still a learning curve, particularly for users without prior BPM or technical experience.
- **Limited Features in Open-Source Edition:** Some advanced features (like advanced reporting, clustering, or advanced integrations) are only available in the commercial editions.
- **Performance Issues with Complex Workflows:** Handling large, complex workflows with a high volume of data can sometimes lead to performance issues.
- **Lack of Advanced Analytics:** While Bonita BPM supports basic monitoring, it doesn't offer as robust analytics or reporting capabilities as some competitors in the market.
- **Requires Technical Skills for Full Customization:** For more advanced features and customization, users will need knowledge of Java and other technical skills.
- **Licensing Costs for Enterprise Version:** While the open-source version is free, the enterprise version, which includes premium features, can be costly.

6.5 Usage Guide

First, after launching the application, we have our options to import projects from GIt and BOS archive and create projects [16].

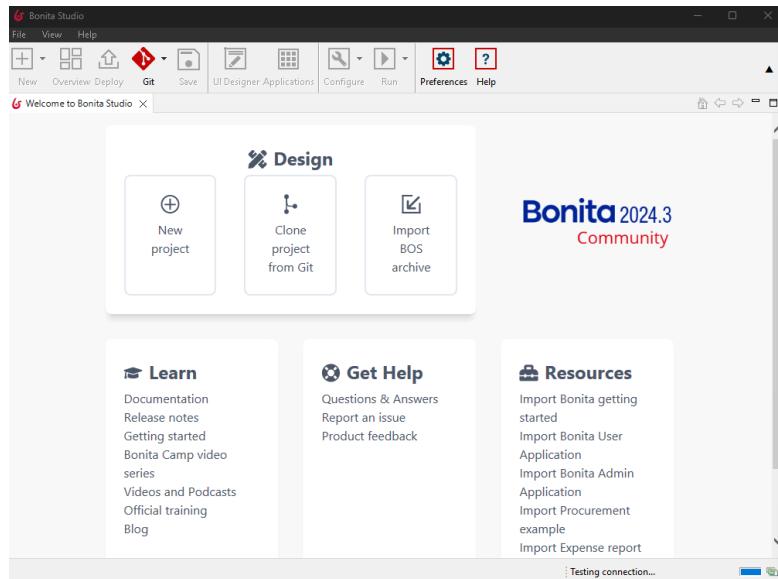


Figure 31: Bonita Application Start Page

After creating the first project, the main environment is presented in the image below.

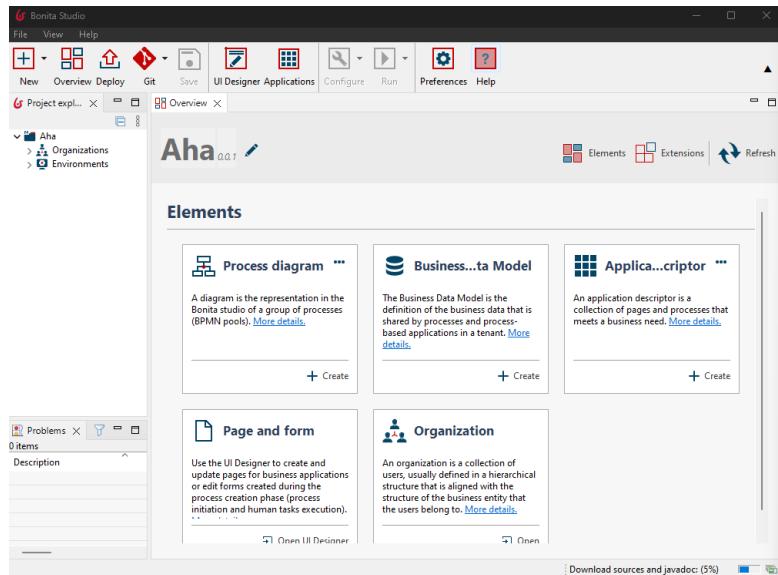


Figure 32: Bonita Project Environment

Next, we create a process diagram which can be seen in the image below. It was really simple to work. There is drag and drop option for everything and the size of elements can easily be modified.

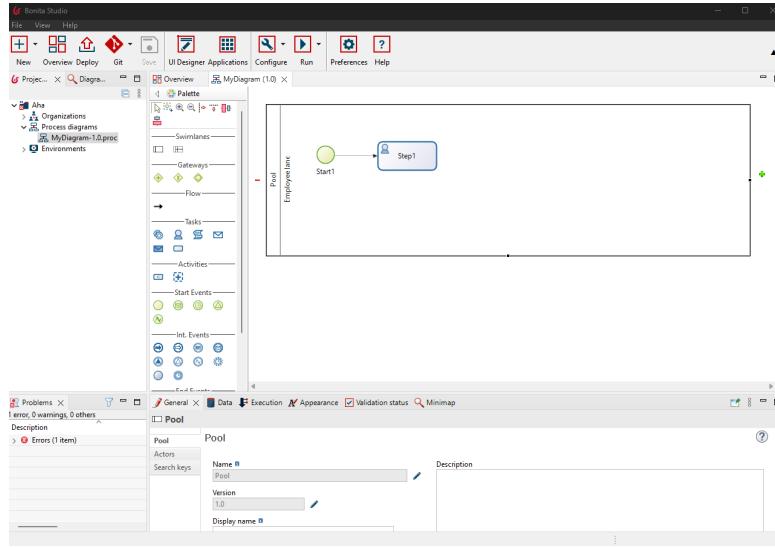


Figure 33: Process Diagram

This tool is very user-friendly because everything is intuitive and doesn't require searching to understand how to use it. There may be other tools available, though I'm not sure if we'll be using them, but I'll mention a few. One of these features is the organization management section, which comes with a default setting (as shown in the image below) to streamline the user experience.

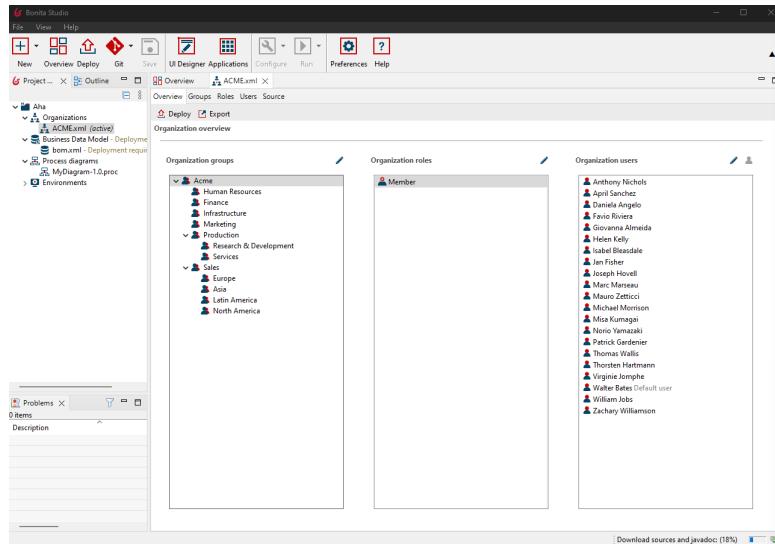


Figure 34: Organization Section

The tool also includes a UI designer, which facilitates the seamless integration of user interactions into business processes. This feature simplifies data input and management, enhancing the user

experience throughout the entire lifecycle of a business process.

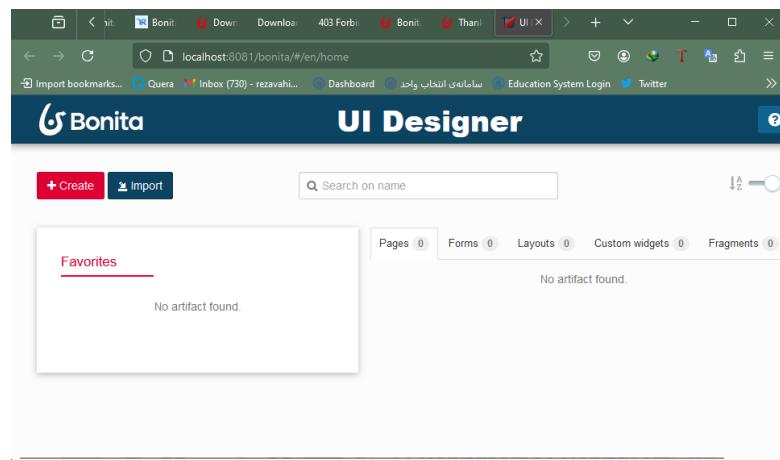


Figure 35: UI Designer on Localhost

7 Comparison and Conclusion

Features	BPMN.io	Camunda	Zoho	Miro	Bonita
Free trial or Free version	Yes	Yes	Yes	Yes	Yes
Easy to use	10	8	8	8	8
Collaboration	10	8	7	8	8
Analytics and Reporting	9	7	7	7	7
Low-code Development	10	8	8	7	8
Integration capability	Yes	Yes	Yes	Yes	Yes
Cloud deployment	Yes	Yes	Yes	Yes	Yes
Customization option	Yes	Yes	Yes	Yes	Yes
Monitoring	10	8	7	7	8
Mobile support	Yes	Yes	Yes	No	Yes
Performance	10	8	8	7	8
Error handling and debugging	10	8	8	7	8
Form management	10	8	8	7	8
Templates	9	8	7	7	8
Approval process control	Yes	Yes	Yes	Yes	Yes
API	Yes	Yes	Yes	Yes	Yes
Access control	Yes	Yes	Yes	Yes	No
Document storage	Yes	Yes	Yes	Yes	Yes
Alerts and notification	Yes	Yes	Yes	Yes	Yes
Calendar management	Yes	Yes	Yes	Yes	No
User management	9	8	7	7	8
Commenting and notes	9	8	7	7	8
Real-time update	10	8	8	7	8
Overall score	144	137	128	134	134

BPMN.io: BPMN.io achieves the highest overall score (**144**), excelling in almost every feature. It is highly collaborative, user-friendly, and compliant with BPMN 2.0 standards. It also provides robust low-code development capabilities, monitoring, and real-time updates. There are no significant weaknesses, as it supports all essential features, including open-source support and mobile compatibility.

Camunda: Camunda is a strong performer with a score of **137**. It provides excellent BPMN 2.0 compliance, cloud deployment, and integration capabilities. It is a reliable tool for developers requiring advanced customization and API support. However, it has slightly lower scores in ease of use, collaboration, and performance compared to BPMN.IO. It also lacks a bit in form management and user management flexibility.

Zoho: Zoho (**128**) is a competitive choice for organizations needing a cloud-based, easy-to-use BPM tool. It is strong in form management, templates, and performance. However, it lacks open-source support and scores lower in collaboration, monitoring, and error handling. It's better suited for small to medium-sized businesses rather than complex workflows.

Miro: Miro has a decent score (**134**), excelling in collaboration and templates, making it an excellent choice for brainstorming and visual workflow mapping. It also supports monitoring and offers real-time updates. However, its mobile compatibility and debugging capabilities are weaker. While it's a great tool for designing and visualizing workflows, it is less suited for technical BPMN 2.0 compliance and heavy development.

Bonita: Bonita scores **134**, tied with Miro. It is robust in performance, real-time updates, and low-code development. It also supports cloud deployments and mobile compatibility, making it versatile. However, it lacks access control and calendar management support. While it performs well in most technical areas, it falls short in some collaborative and administrative capabilities.

Final Recommendation: Winner: BPMN.io. BPMN.io is the most well-rounded and feature-rich tool, offering a complete package for businesses of all sizes. Its comprehensive capabilities, open-source nature, and ease of use make it the best choice overall.

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