



Prototyping

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S2 Teknik Informatika

PENS



Konten

- Introduction
- Balsamiq
- Google Slides
- In-Vision



Prototyping Defined

Prototyping is the process of quickly putting together a working model (a prototype) in order to test various aspects of a design, illustrate ideas or features and gather early user feedback.- [Wikipedia](#)

IEEE defines **prototyping** as “ A type of development in which emphasis is placed on developing prototypes early in the development process to permit early feedback and analysis in support of the development process.”



Need for prototyping

- Enables us to explore the problem space with the stakeholders.
- As a requirements artifact to [initially envision](#) the system.
- As a design artifact that enables us to explore the solution space of your system.
- A vehicle for you to communicate the possible UI design(s) of your system.
- A potential foundation from which to continue developing the system



Communication

Create shared preview among all stakeholders



Decision-Making

Compare design variations and resolve conflicts



Evaluation & Feedback

Fast and inexpensive ways to refine design

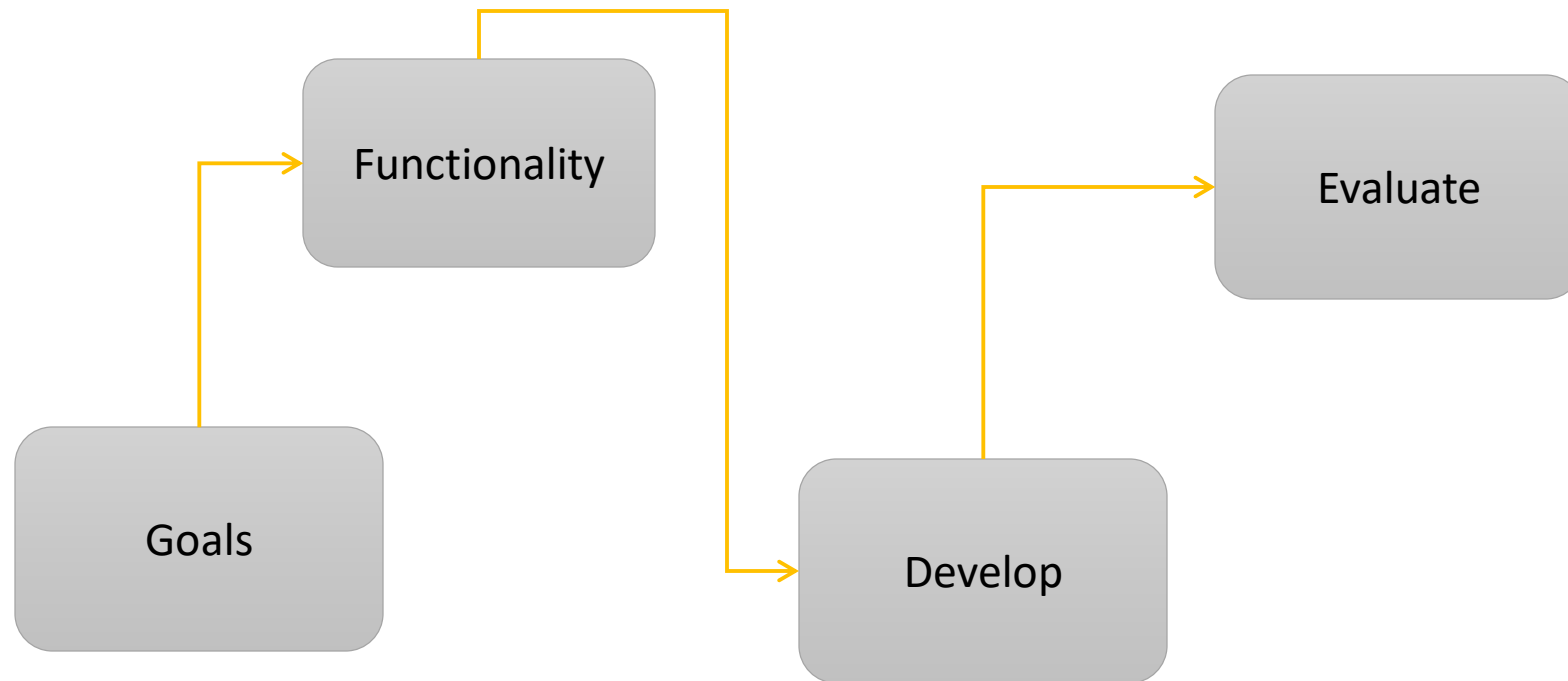
Why do we need prototypes ?



Advantages & Disadvantages of Prototyping

<u><i>Advantages</i></u>	<u><i>Disadvantages</i></u>
Users can try the system and provide constructive feedback during development	Each iteration builds on the previous iteration and further refines the solution. This makes it difficult to reject the initial solution as inappropriate and start over.
An operational prototype can be produced in weeks	Formal end-of-phase reviews do not occur. Thus, it is very difficult to contain the scope of the prototype.
Users become more positive about implementing the system as they see a solution emerging that will meet their needs	System documentation is often absent or incomplete, since the primary focus is on development of the prototype.
Prototyping enables early detection of errors	System backup and recovery, performance, and security issues can be overlooked.

Journey of the Prototyping process





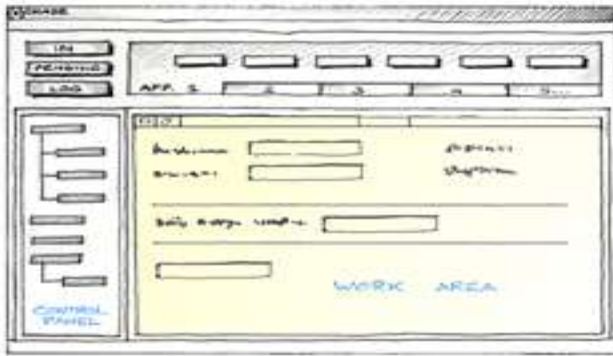
User Interface Prototyping

Development of highly interactive software system with graphical user interfaces (GUI) has become increasingly common and acceptance of such a system depends highly on the quality of GUI.

Prototyping is an excellent means of generating ideas about how the GUI can be designed and it helps to evaluate quality of solution at an early stage.



Screen sketch



Software



3D printed model



Cardboard mockup



Video



What does prototype mean in interaction design?

Simplicity is the ultimate sophistication.



Classification of user interface prototypes

- Presentation Prototypes
- Functional Prototypes
- Breadboards
- Pilot Systems



Risks in Prototyping

- Client may believe that system is real.
 - Unrealistic expectations of the progress
- Implementers make poor choice
 - Justified in prototype but not in real system
 - Tempting to build real system same way
- Prototype is not identical to the real system
 - Users may interact differently due to different response characteristics
 - Must interpret prototype experience with care

Do we need prototyping??

Two “points of interest” for companies to adopt prototyping based methodologies are:

- Point 1: They allow us to reduce the cost and time-to-market of a system.
- Point 2: For companies building critical systems, prototyping would help them perform formal verification when required. These methodologies provide high level of reliability in the system design and implementation.





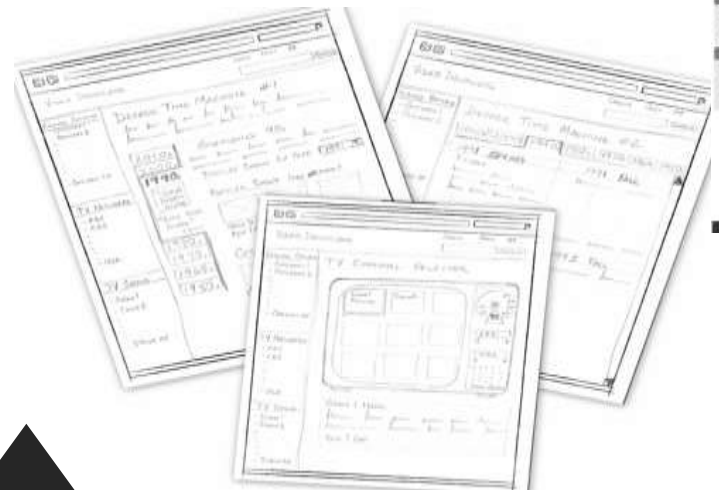
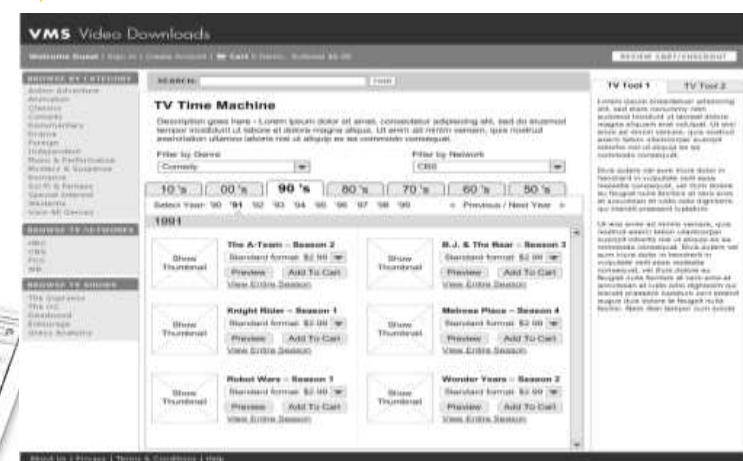
High



Medium



Low



Prototypes categorized by **Fidelity**

Low



Medium



High



Prototypes categorized by **Fidelity**



Low-fidelity Prototyping

- Low-fidelity prototyping is generally limited function, limited interaction prototyping effort.
- They are constructed to depict concepts, design alternatives and screen layouts. They are intended to demonstrate general look and feel of the interface.
- They are created to educate , communicate and inform, but not to train, test or serve as a basis for which to code.
- Low fidelity prototyping is used early in the design cycle to show general conceptual approaches without much investment in development.



High-Fidelity Prototyping

- High-fidelity prototypes represent the core functionality of the products user interface.
- High fidelity prototypes are fully interactive systems. Users can enter data in entry fields, respond to messages, select icon to open windows and interact with user interface as if it were a real system.
- They trade-off speed for accuracy.
- Building high fidelity prototypes consume resources and have high cost.

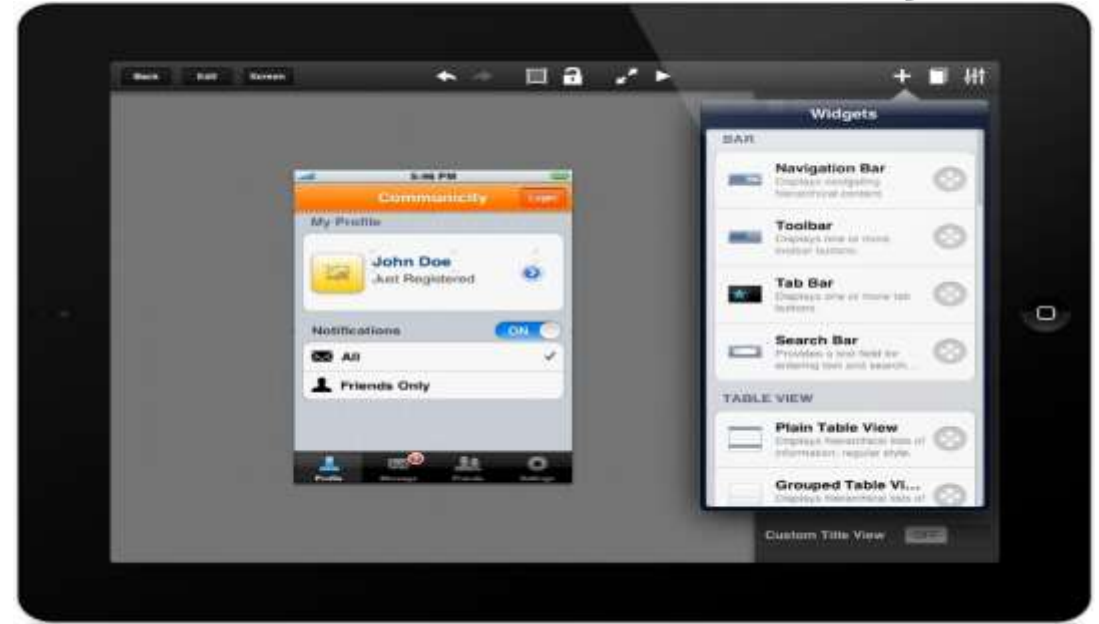
Comparison of two prototyping efforts

Type	Advantages	Disadvantages
Low-fidelity Prototypes	<ul style="list-style-type: none"> • Lower Development cost • Evaluate multiple design concept • Useful communication device • Address screen layout issues • Address screen layout issues • Useful for identifying requirements 	<ul style="list-style-type: none"> • Limited error checking • Facilitator driven • Limited utility after requirements established • Navigational and flow limitations • Poor detailed specifications to code
High-fidelity Prototypes	<ul style="list-style-type: none"> • Complete functionality • Fully interactive • User Driven • Clear definition of navigation • Look and feel of final product • Use for explorations and tests 	<ul style="list-style-type: none"> • More expensive to develop • Time-consuming to create • Not effective for requirements gathering

Paper



Digital



Prototypes categorized by **Medium**

Only **2** Steps ? !



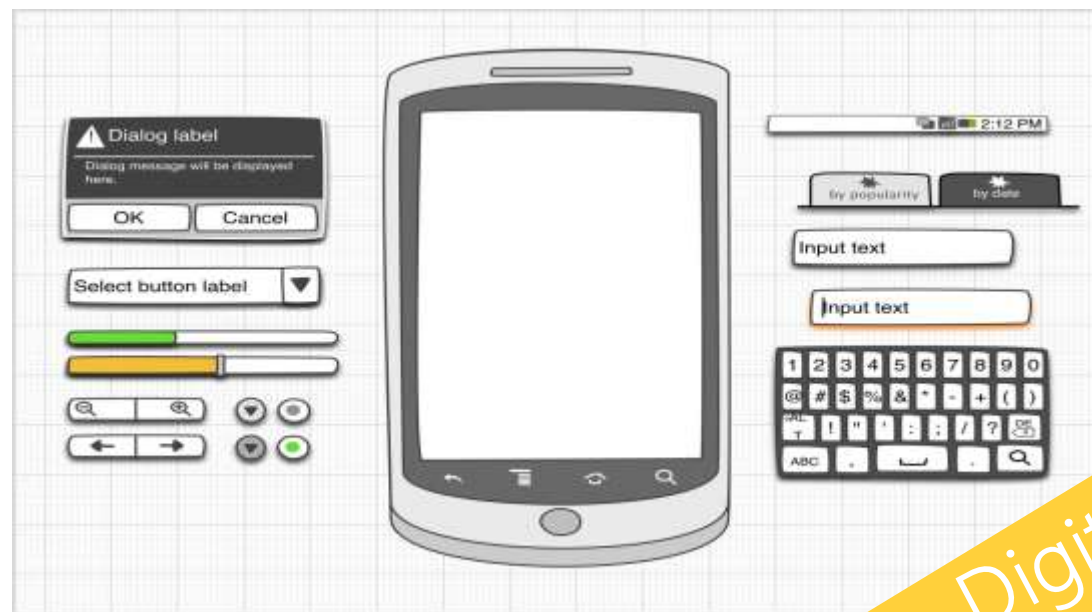
How to prototype ?

Paper



1. Sketch **key** pages on separate paper
2. Specify how user will transition between them using **Arrows**

1. Create key pages by placing **UI** elements in the right place.
2. Add interactivity by establishing **links** between them



Digital



anything
familiar?





Balsamiq



Apa itu Balsamiq??

- Balsamiq Mockups adalah salah satu software yang digunakan dalam pembuatan desain atau *prototyping* dalam pembuatan tampilan user interface sebuah aplikasi. Dengan menggunakan Balsamiq Mockup kita dimudahkan dalam pembuatan user interface karena Balsamiq Mockup sudah menyediakan tools yang dapat memudahkan dalam membuat desain prototyping aplikasi yang akan kita buat.
- Software ini berfokus pada konten yang ingin digambar dan fungsionalitas yang dibutuhkan oleh pengguna.



Kelebihan Balsamiq.

- Tersedia 3 versi antara lain : balsamiq cloud, desktop, dan google drive

Balsamiq Cloud

Web-based

Data saved in the cloud

Designed for teams

- Priced per active project, per Space
- Unlimited users, unlimited wireframes per project
- 2-project plan is \$9/mo ([full pricing info](#))
- Cancel anytime
- Pay via [credit card](#)
- [Terms of Use](#)

[Start Cloud Trial](#)

Mockups 3 for Desktop

For macOS or Windows

Files saved on your hard drive

Lots of ways to collaborate

- Priced per user ([multiple machines](#))
- Single user license is \$89, with free minor-version updates
- [Volume discounts](#) available
- Pay via [credit card](#), [bank transfer](#) or [check](#)
- [End User License Agreement](#)

[Download Desktop App](#)

Wireframes for Google Drive

Web-based

Data saved in [Google Drive](#)

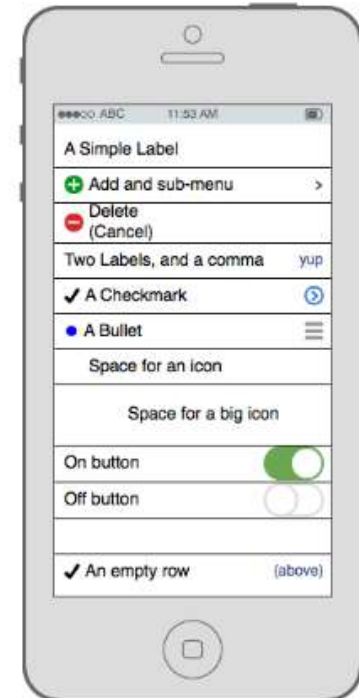
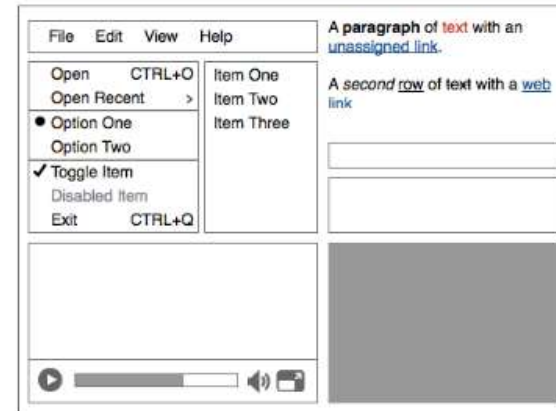
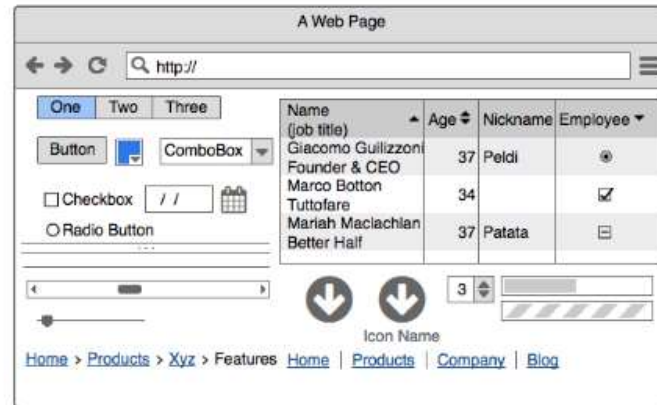
Collaboration via [Google Drive](#)

- Priced per user
- Purchased individually, no volume discounts
- Pay monthly ([\\$5/mo](#)) or annually ([\\$50/year](#))
- Cancel anytime
- Pay via [credit card](#)
- [Terms of Use](#)

[Install for Google Drive](#)

Kelebihan Balsamiq.

- Library nya cukup lengkap, baik untuk mobile & desktop apps ataupun web apps
- Lebih lengkapnya ada di <https://wireframestogo.com/>



Kelebihan Balsamiq.

- Mempunyai 2 skin yaitu : sketch dan wireframe

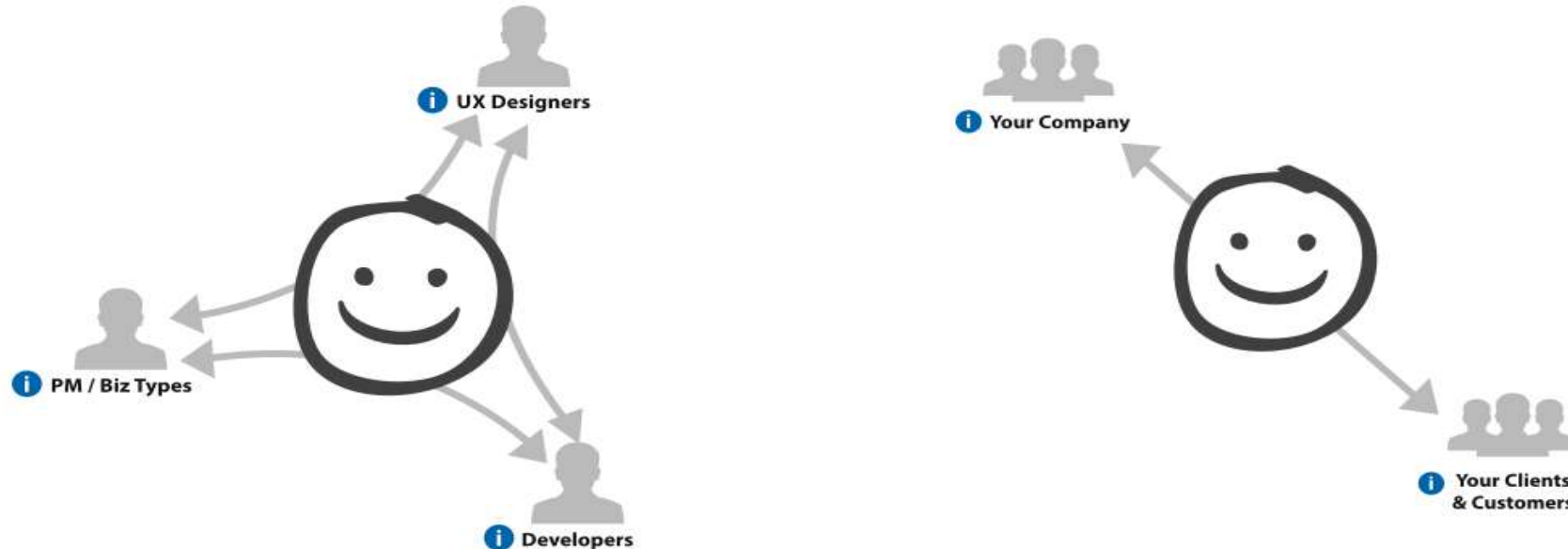


Kelebihan Balsamiq.

- Bisa digunakan untuk kolaborasi

Designed for collaboration

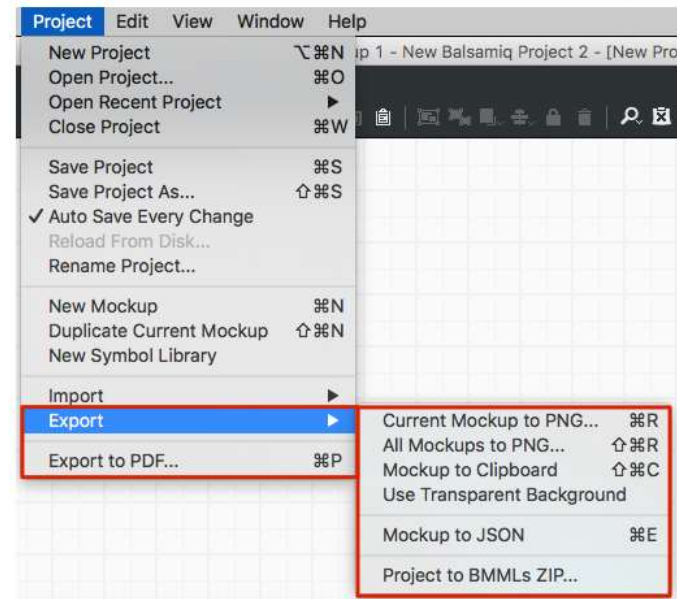
Your whole team can come together around the right design using Balsamiq. It's so easy to learn, both clients and customers can use it to describe their needs more clearly.





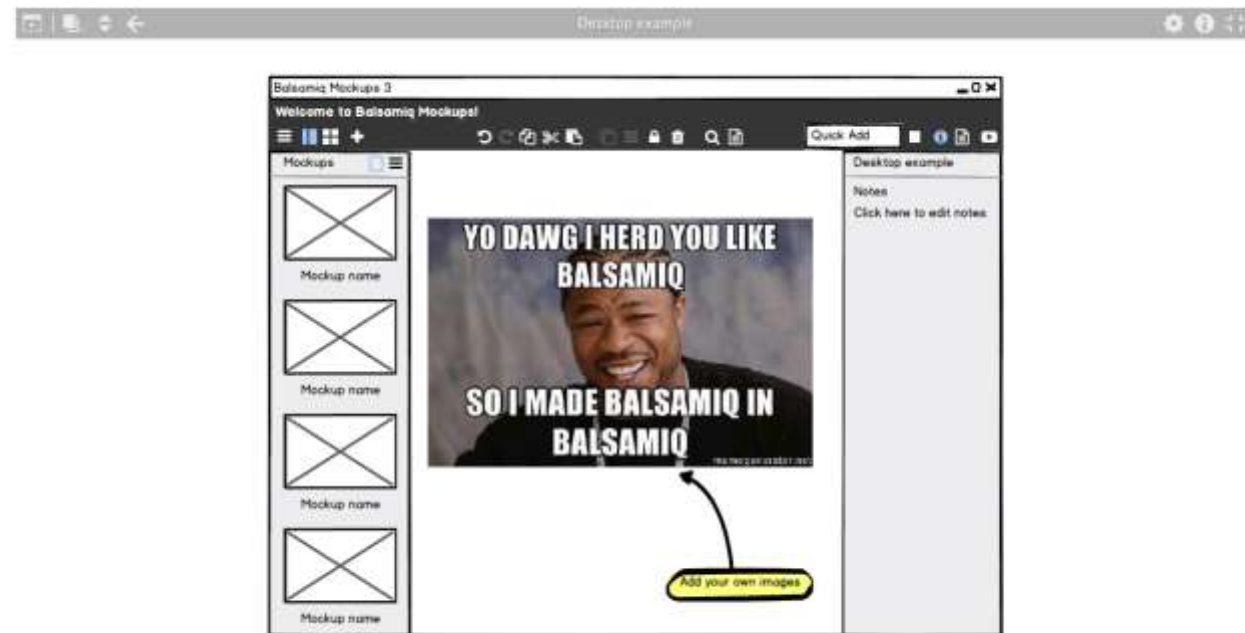
Kelebihan Balsamiq.

- Bisa di export ke pdf, gambar, clipboard, json, atau ke versi balsamiq sebelumnya.



Kelebihan Balsamiq.

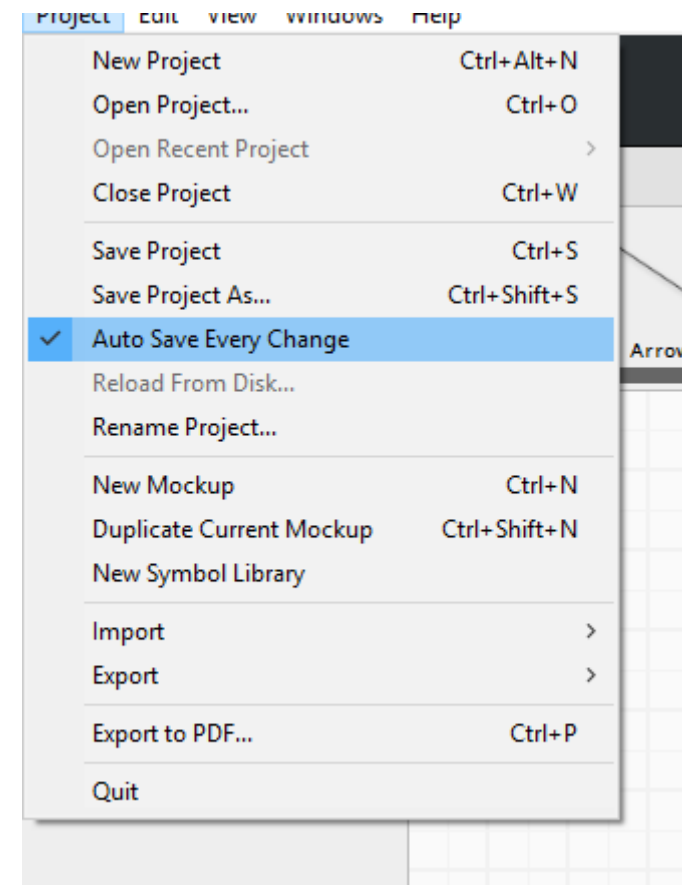
- Terdapat fitur full screen presentation.





Kelebihan Balsamiq.

- Terdapat fitur autosave everychange.





Kekurangan Balsamiq.

- Hanya bisa gratis selama 30 hari trial.

Which version of Balsamiq is right for me?

All versions come with a [free 30-day trial](#).



Kekurangan Balsamiq.

- Jika ingin bisa menggunakan balsamiq terus menerus kita membeli setelah trial 30 hari habis atau selesai.

Ready to try it out? Start a Free Trial Now

Start using with full-functionality right away. No credit card or payment needed to start your trial.

READY TO TRY? →

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Mac and Windows

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\$89

We also integrate with [Google Drive](#) and Atlassian [Confluence Cloud](#), [Confluence Server](#), [Jira Cloud](#), and [Jira Server](#) Compare all versions [here](#).



Google Slides



What is it?

Google slide is a presentation application from Google just like MS Power Point. It is an internet presentation generator software that you can use to :

- Create your presentation
- Edit it with friends or team
- Import MS Power Point files
- Download presentation as a .pdf, .ppt, .svg, .jpg or .txt file.
- Insert images or video
- Publish and embed it to your website

Competible with?

A white smartphone is shown next to a laptop, both displaying a Google Slides presentation. The smartphone screen shows a slide with a red and orange floral background and the text 'Siapa yang hadir?'. The laptop screen shows a similar slide.

Mulai sekarang

Slide siap kapan saja Anda siap. Cukup buat presentasi melalui browser atau unduh aplikasi untuk perangkat seluler Anda.

Dapatkan Google Slide ▾

- Buka Slide
- Dapatkan Slide untuk Android
- Dapatkan Drive untuk iPhone dan iPad



Why we have to choose Google Slide?

1. Easy to do wireframing

We can create an outstanding mockup using sort of shape, fill it with text and even shading it to create simple button.

We can insert an image like your company logo, background or something that can light up your presentation.

Even better you can make your presentation to be interactive with simply add a hyperlink to your asset(button,shape,etc) then link it to another slide.



Why we have to choose Google Slide?

2. Collaboration with Real Time Edit Support

You can work with your team using Google slide with document sharing or even better you can grant team member to edit it straight from google slide

3. Auto save

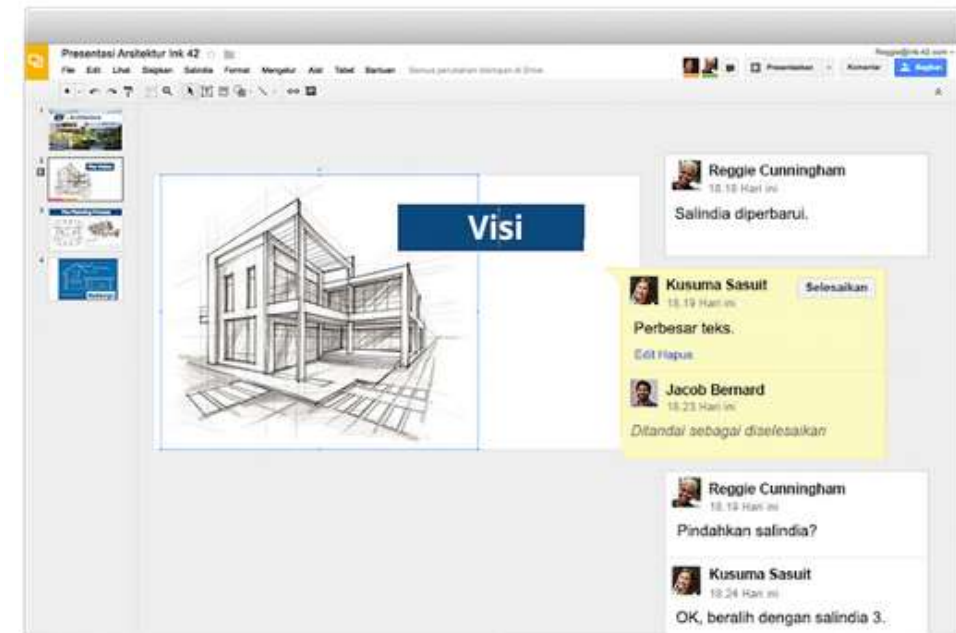
Don't afraid to lose your presentation because of some problem, google slide will automatically save your power point on your last change.

4. Feedback

You can easily give a team feedback via comments (Command+ALT+M)

Berkomentar, chat, dan pengeditan waktu nyata

Kerjakan satu presentasi secara online dengan mitra bisnis, seluruh tim, atau kontak eksternal. Kontrol siapa saja yang mendapatkan izin untuk mengedit, melihat, atau hanya menambahkan komentar.



Benefit

- Cloud storage saving so never lose your files.
- Easy sharing with just need an internet connection.
- Easy to use and interactive.
- Real time is best for team working.
- No need to install just need internet connection
- Unlimited Revision History



Bekerja di PC, Mac, ponsel, dan tablet

Lihat atau tampilkan slide dari ponsel atau tablet sehingga Anda selalu memiliki opsi untuk melatih presentasi Anda sampai saat terakhir.



Kontrol berbagi yang sederhana

Berbagi itu mudah. Anda dapat menetapkan izin untuk mengontrol siapa yang melihat dan mengedit slide. Anda juga dapat dengan mudah mengonversi Slide ke dalam format yang diinginkan untuk dibagikan dengan orang lain.

Riwayat revisi tak terbatas

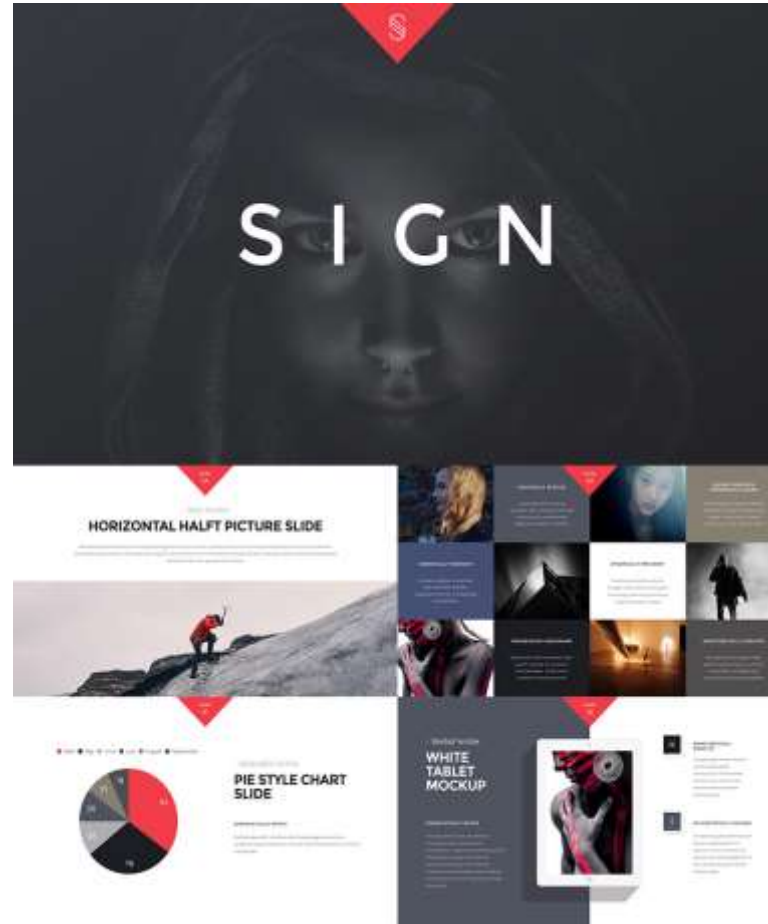
Presentasi otomatis disimpan secara online dan semua versi akan selalu disimpan tanpa menggunakan penyimpanan [Drive](#), sehingga Anda dapat selalu melacak dan membatalkan revisi.



Con

- No log for who is editing or generating something in with anyone can edit feature
- You have to edit your image using image editing then insert it because google slide didn't have many image editing feature
- Slow wireframing because we have to manual create some asset

Sample Design





In-Vision

InvisionApp

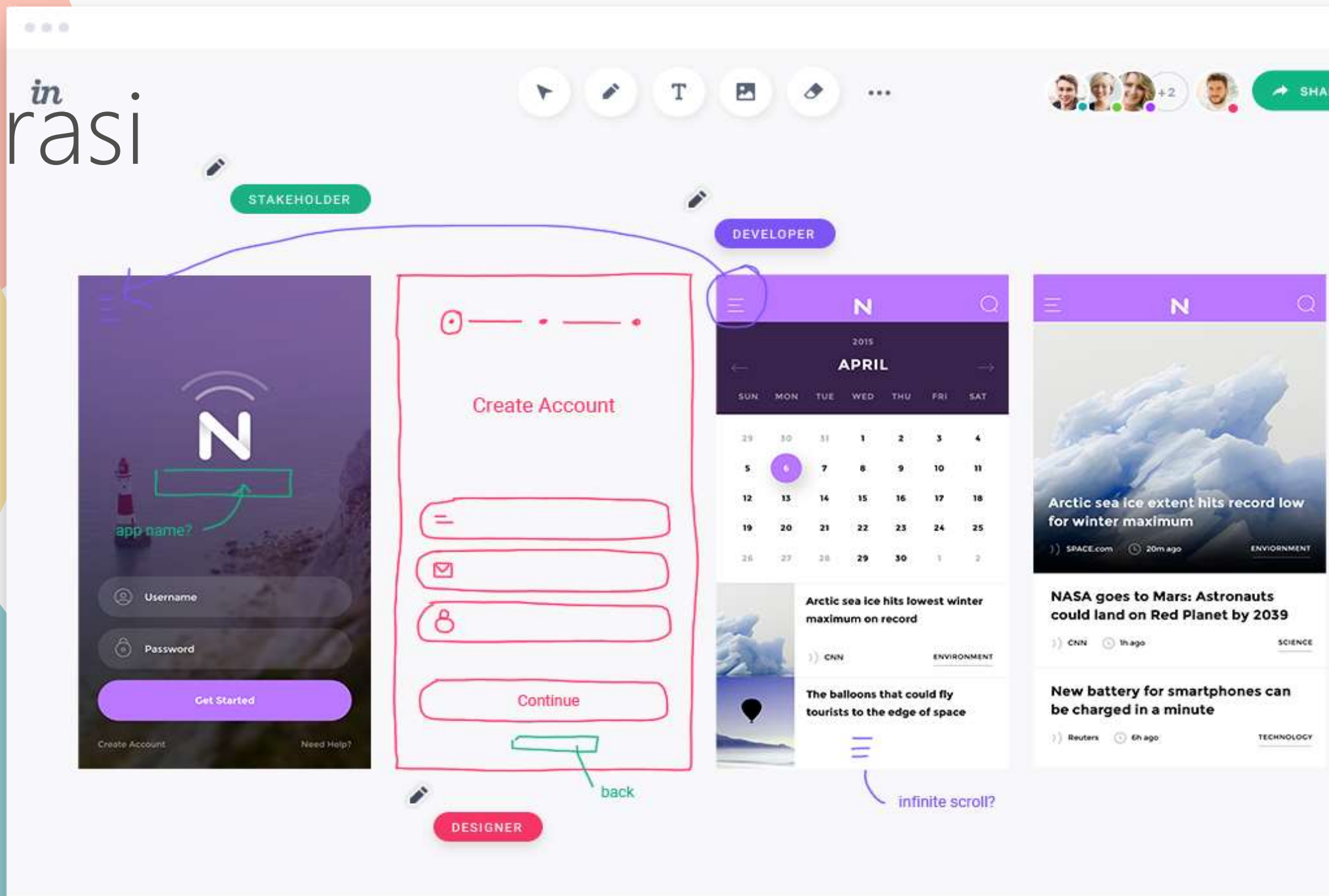


Aplikasi **Web** yang focus pada **prototyping** aplikasi **mobile** dan **website**. Aplikasi ini dibuat oleh designer dan ditujukan untuk designer. Invision membantu designer **berkolaborasi** dan juga **mengelola proses** pengerjaan design. Selain itu prototyping membantu designer untuk berkolaborasi dan mendapatkan **feedback** dari team maupun client



Kelebihan

kolaborasi



The image displays a Kanban board with four columns representing different stages of task completion:

- On Hold (5):** Contains five cards: "Sign In" (1/7, 3), "Sign Up" (2/3, 1), "Stats" (2/2), "Overview" (4/5, 1), and "Settings" (1). A plus sign is at the bottom.
- In Progress (7):** Contains seven cards: "Calendar" (2), "Timeline" (1/1), "Home" (4/6, 5) - being moved from On Hold, "Navigation" (3/3, 1), "Walkthrough" (1/1), "Create New Ev..." (1/1), and "Event" (3). A plus sign is at the bottom.
- Needs Review (3):** Contains three cards: "To-Do's" (2/4, 2), "Groups" (2/2, 1), and "Tasks" (1/1). A plus sign is at the bottom.
- Approved (4):** Contains four cards: "New Task" (3/3, 2), "Date" (1), "Home Navigat..." (2/2), and "List" (4/4, 5). A plus sign is at the bottom.

management

Integration



Vertical toolbar with icons for selection, drawing, text, user avatars, and an EXIT button.

Bath
Andy
Erin



share



Kekurangan



in



Test

Design



SHARE

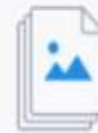
RZ



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<i>For designers who only need a few active projects.</i>	<i>For professional designers with lots of active projects.</i>	<i>For teams of up to 5 people handling many projects.</i>	<i>Advanced features for large teams with complex projects.</i>
<ul style="list-style-type: none">✓ 3 prototypes✓ 3 boards	<ul style="list-style-type: none">✓ Unlimited prototypes✓ Unlimited boards	<ul style="list-style-type: none">✓ Unlimited prototypes✓ Unlimited boards✓ Up to 5 team members	<ul style="list-style-type: none">✓ Unlimited prototypes✓ Unlimited boards✓ Unlimited team members✓ Advanced security✓ Permissions & workflows
\$13 / mo Save \$24 a year	\$22 / mo Save \$36 a year	\$89 / mo Save \$120 a year	
CHOOSE STARTER	CHOOSE PRO	CHOOSE TEAM	SCHEDULE A DEMO






Mocking Bot



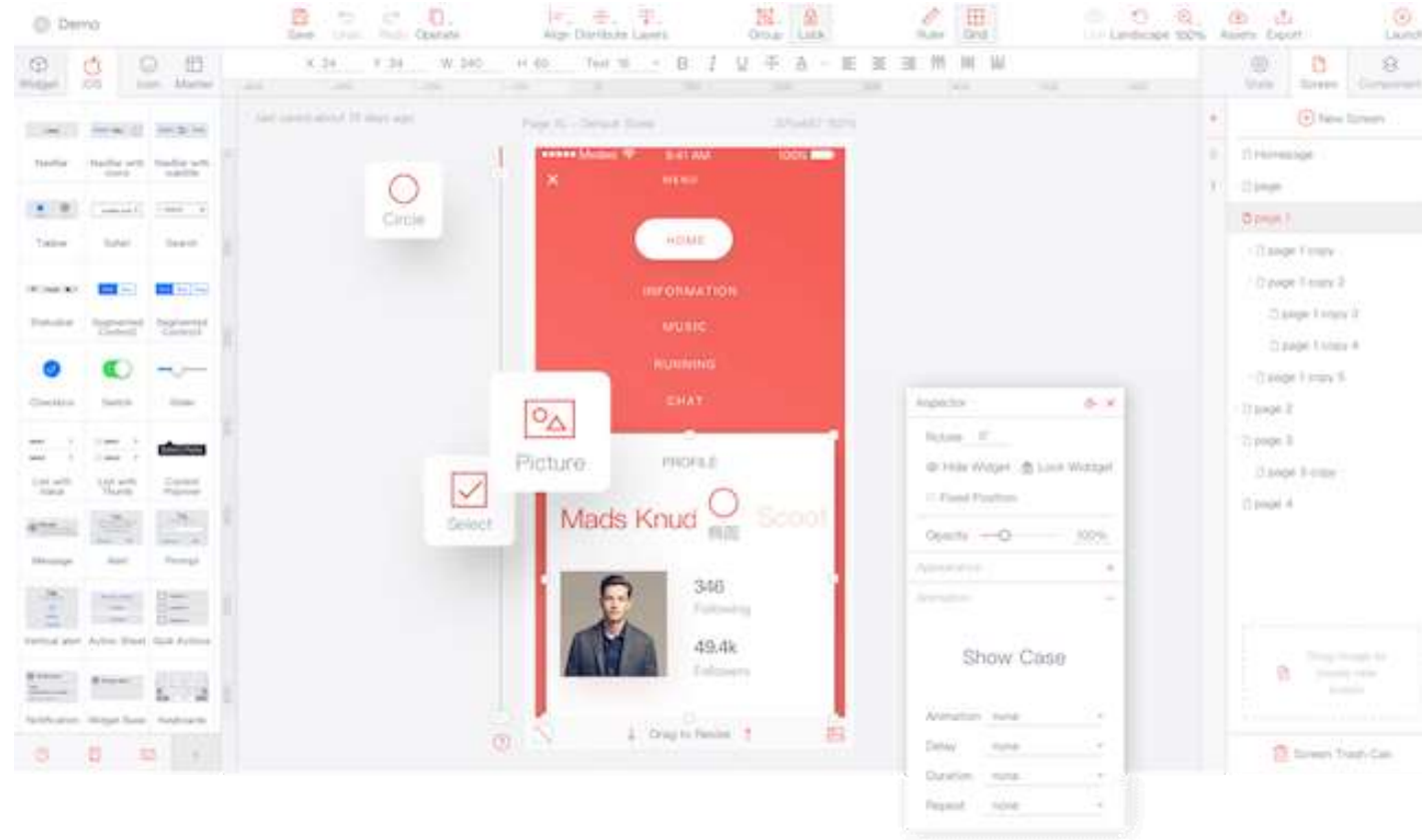
MockingBot is a prototyping tool that helps you generate or build **interactive** app wireframes and prototypes in a very short time

PRICING



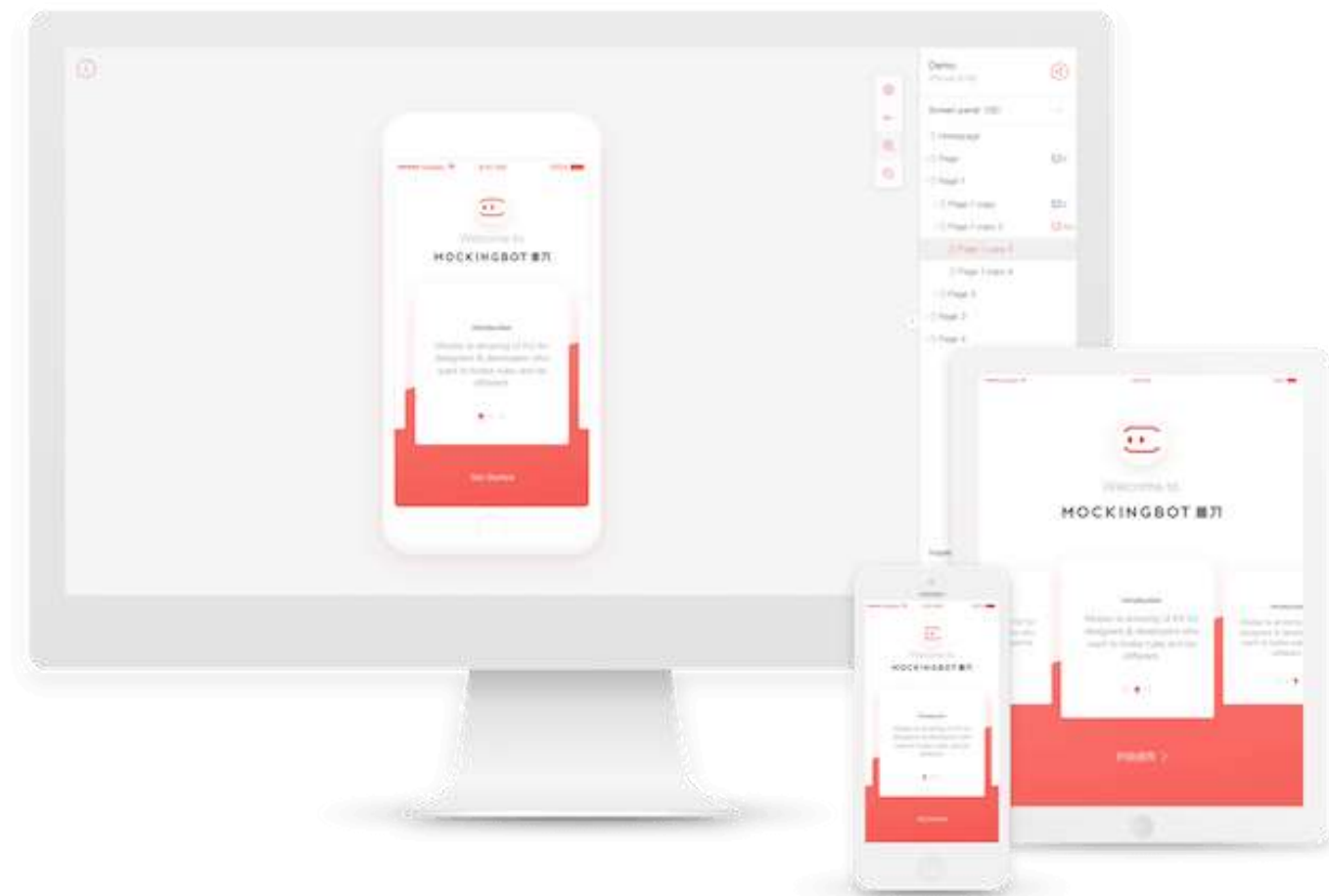
Free	Personal	Collaboration HOT	Team	Enterprise
\$0	\$4.99	\$9.99	\$49	
Use for Free	Upgrade Now	Get it Now	Upgrade Now	Email support@mockingbot.com
1 member	1 member	2 members ?	- 5 members +	
Features <ul style="list-style-type: none">3 projects20 screens/project ?100MB assetsSketch plugin	Features <ul style="list-style-type: none">Unlimited screens and projects5GB assetsNo ads ?Inspect modePNG export	Features <ul style="list-style-type: none">All personal plan features20GB assetsPNG/HTML/APK exportCustomizable accessComments ?	Features <ul style="list-style-type: none">All collaboration plan features150GB assetsIPA export (20-member teams)PNG/HTML/APK exportCollaborator managementComments	Features <ul style="list-style-type: none">Exclusive componentsCustomizable featuresAWS/Aliyun/Tencent CloudPrivate deployUnlimited assets

Pro



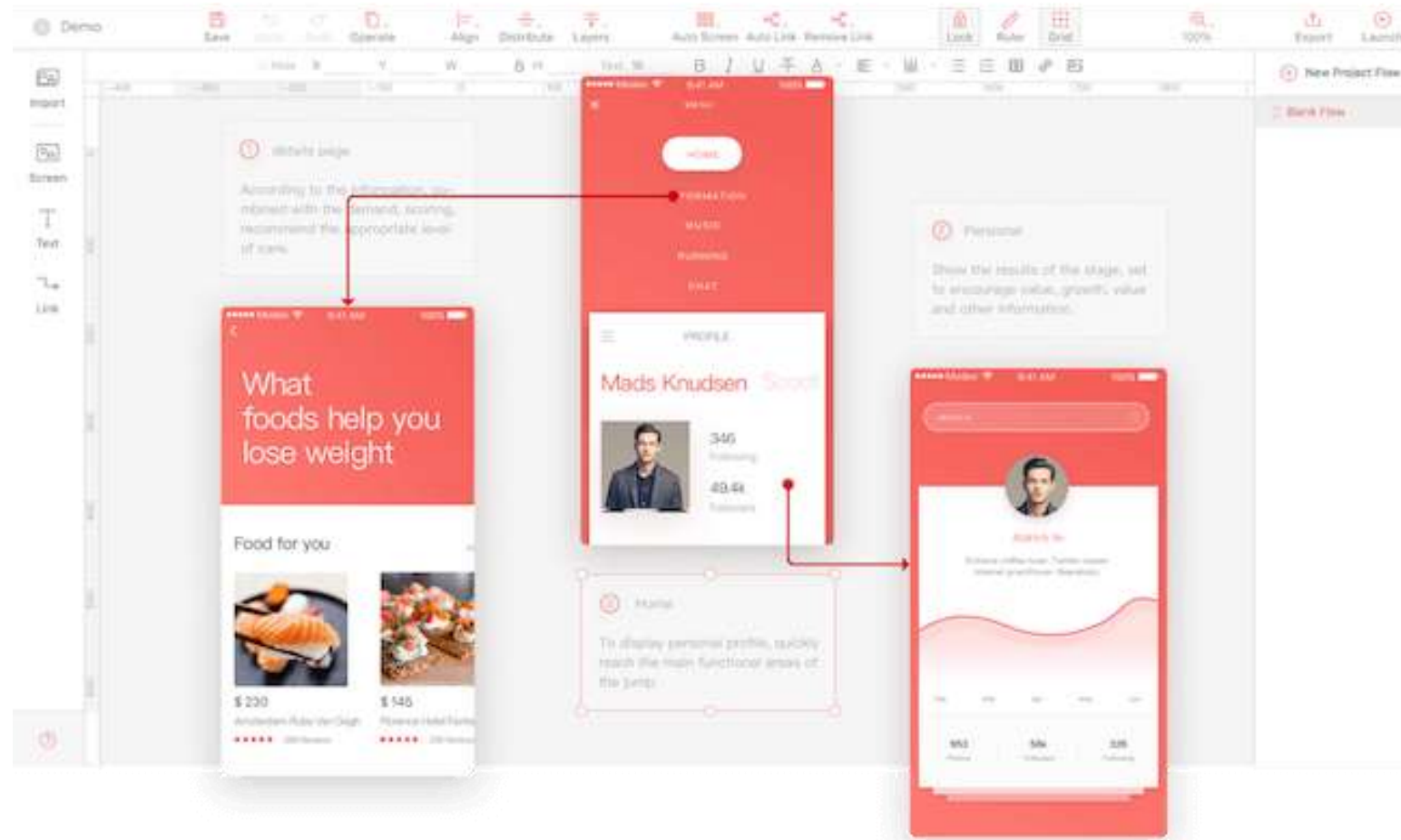
user-friendly

Pro..



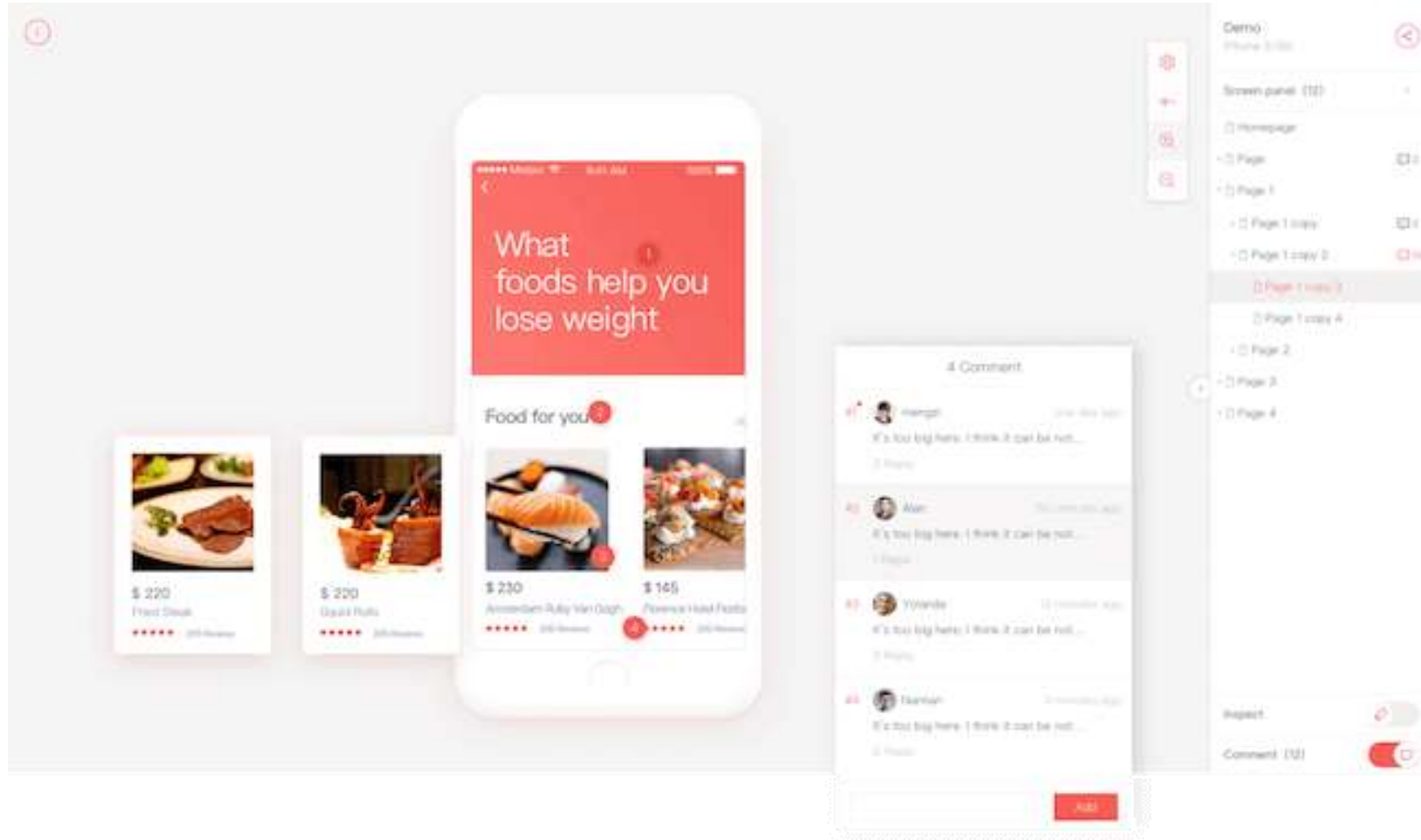
platform-agnostic

Pro..



Support Workflow

Pro..



Support Team **Collaboration**

Con



This webpage is not found

[Details](#)

Yet To Be Found


All Projects ▾

Search

Created At Asc

+ Create Project


1



Kelompok Kita
about an hour ago

2 Screens • Webpage


1



newapp
17 minutes ago

2 Screens • Android

1



Project
14 minutes ago

2 Screens • Android



Pencil

Pengenalan



An open-source GUI prototyping tool that's available for ALL platforms.



Pencil dibuat dengan tujuan menyediakan alat prototyping open source serta gratis yang dapat dipasang dan digunakan dengan mudah untuk membuat *mockups* di platform desktop (Windows, Linux, OSX).

- Selain itu pencil juga dapat diinstall sebagai *plug-in* firefox dan berjalan di atasnya. (namun sayangnya pengembangan project *plug-in* ini sudah dihentikan)



Fitur-fitur

- Easy GUI Prototyping
- Built-in Shape Collections
- Diagram Drawing Support
- Exporting to Different Output Formats
- Easily Find Cliparts from the Internet
- Inter-page linking



Kelebihan

- OPEN SOURCE
- Banyak shape (template) dari komunitas
- Interface dan tools yang ada mudah untuk difahami
- Multi-platform
- Terdapat fitur hyperlink dari satu page ke page lain untuk mempermudah mendesain dan menyampaikan flow sebuah UI.

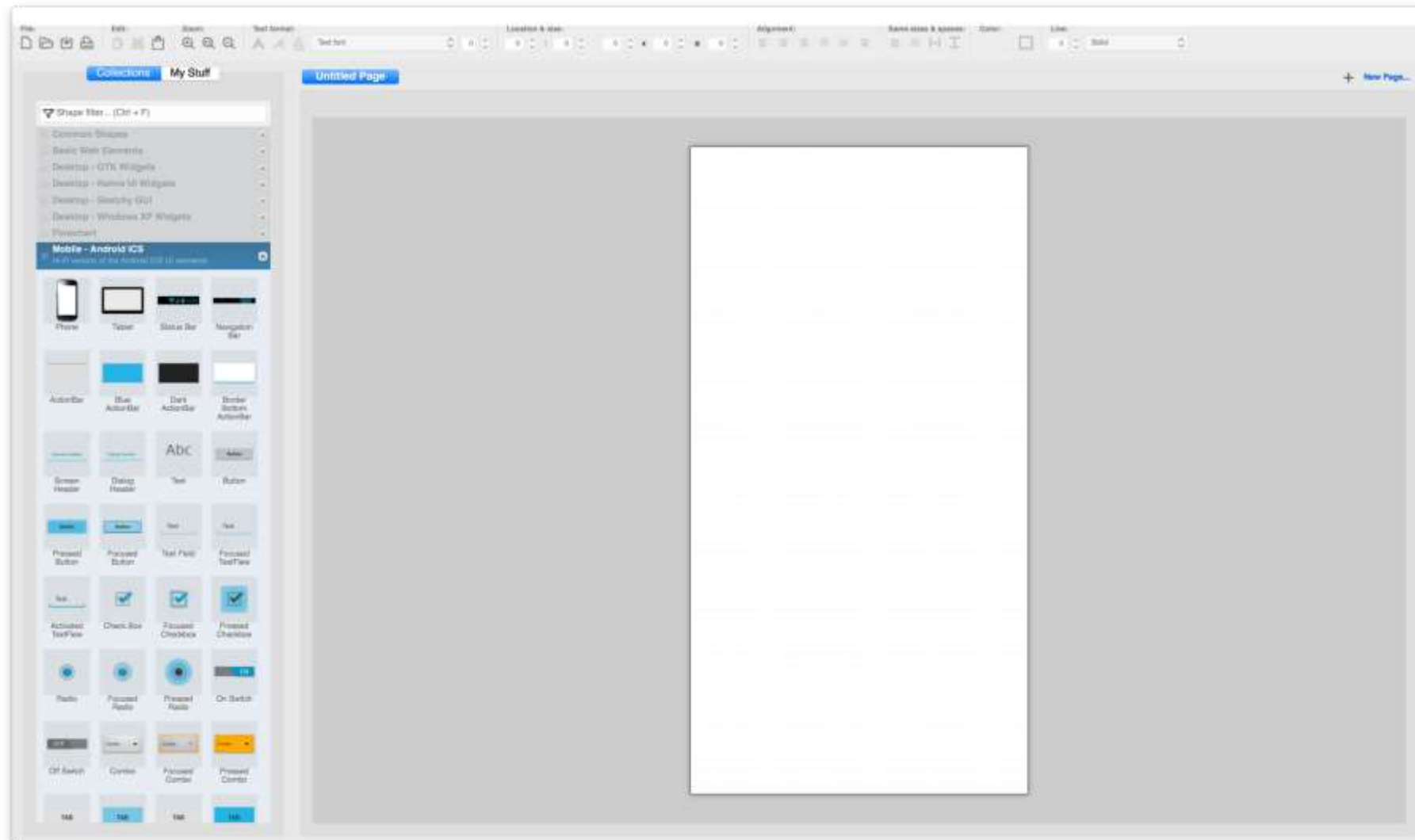


KEKURANGAN

- Kurang lancar saat dipakai di macOS versi terbaru
- Tampilan kurang menarik



Tampilan PENCIL





Proto IO



How to prototyping with Proto.io

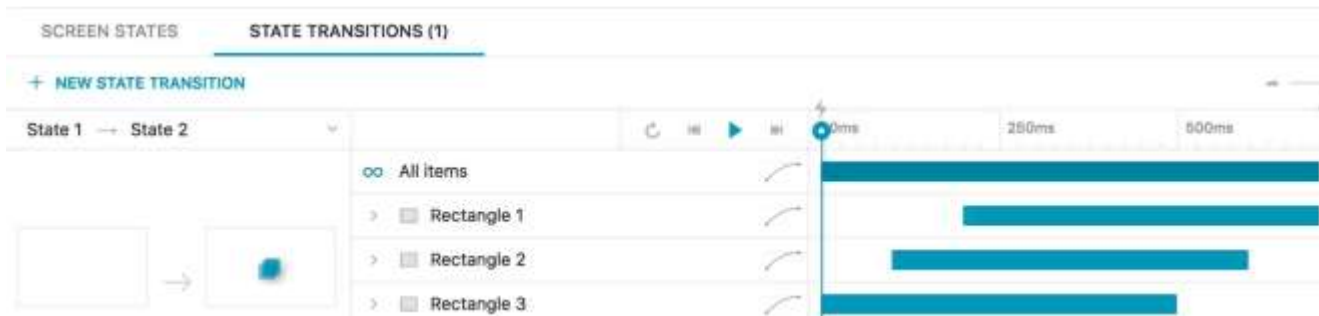




**Proto.io adalah sebuah platform aplikasi prototype
Yang diluncurkan pada tahun 2011
Dan di develop oleh Labs Division dari SNQ Digital
Awalnya hanya dapat mendesign untuk mobile device saja
Tapi Proto.io memperluasnya sehingga dapat membuat
berbagai protoype dengan layar interface
Termasuk SmartTV, Kamera Digital, Mobil, Pesawat, Video Game.**

The Unique Features

Animation Timeline



Proto.io

- **Single-Click Sharing**



STAKEHOLDERS



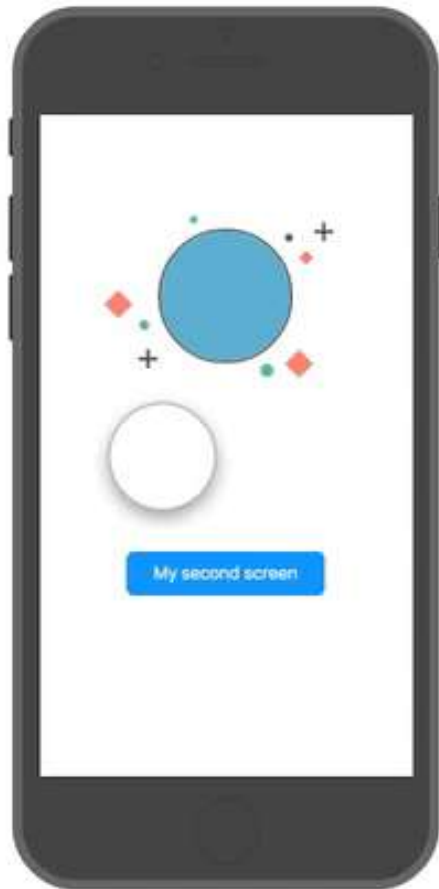
TEAM



FRIENDS



THE WORLD



☰ My Project
iPhone 6/6s • 375x667

SCREENS (2)

My second screen Screen 1

EDITORS COMMENTS

SEND TO MOBILE (SMS)

SHARE

EXPORT TO PDF/PNG

100%

A vertical toolbar on the left side of the interface. From top to bottom, the icons are: a hamburger menu, a refresh/circular arrow, a zoom-in icon, a zoom-out icon, a vertical slider with a dot, a magnifying glass, a share icon, a zoom-in icon, and a zoom-out icon.

Kelebihan

- User interface modern
- Fitur lengkap
- Share project
- Documetasi lengkap
- Terdapat versi mobile



Kekurangan

- Free trial 15 hari
- Harus online saat proses pembuatan
- Hanya dapat di develop oleh satu orang

