



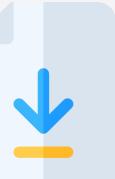
Recording will
be shared

Welcome to the **Bar Chart Race Workshop!**

Download
Code & Slide

bit.ly/KDP_Race

Click the top right
Download ZIP
button



Sign Up For:

#1 Developer Account
bit.ly/KDP_signup

#2 Kintone Subdomain
bit.ly/K_DevLic

Asking Questions
& Raising Hands

Post questions in
the chat anytime!

Include your code
& error messages.



\$25 Gift Card
Raffle at the End



ahansel / 00_Ba..._Chart_Race_Workshop.md

Last active 6 minutes ago

 Edit Delete Star

0

 Code Revisions 8

Download ZIP

 00_Ba..._Chart_Race_Workshop.md

Click here to download
EVERYTHING

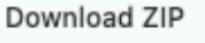


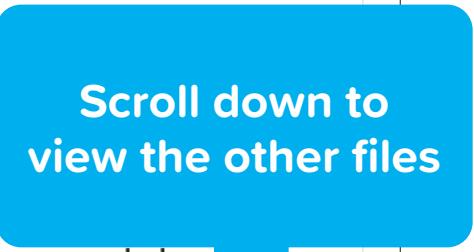
No Server Data Visualization: Build a Bar Chart Race Project!

Thank you for attending our Kintone x Bar Chart Race workshop!

Use the following CSV file, CDN URLs, JavaScript file, and PDF files for the hands-on section!

Download Links

Click [here](#) or the  button on the upper right corner for all the code, data, & slide you need for our workshop.



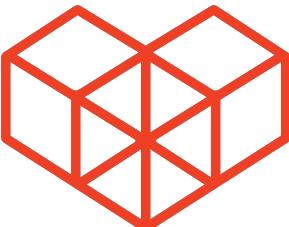
Scroll down to
view the other files

Getting your FREE Kintone Database

Step 1 - Sign Up for Kintone Developer Account (Website)



#1 - Sign Up for Developer Account



bit.ly/KDP_signup

⚠ Do NOT use Safari ⚠

⚡ Accept Cookies First ⚡

✓ Chrome & Firefox works ✓

Sign up to Kintone Developer Program

Please fill out this form, and we'll send you a welcome email so you can verify your email address and sign in.

Your full name *

Your email *

I'm not a robot

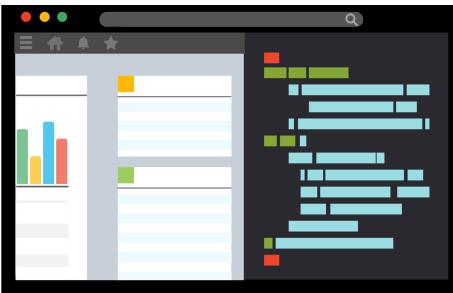
reCAPTCHA
Privacy - Terms

Sign up

Cancel



#2 - Create a Kintone Subdomain



bit.ly/K_DevLic

⚠ No Special Characters ⚡

⚡ Name your Subdomain with only ⚡
lowercase [a-z], numbers [0-9],
& hyphens [-]

✓ e.g. weekend-hacker, jsis4you ✓

Terms of Service for the Developer License

The account holder of this developer program who applies for the license (hereinafter referred to as "User") must comply with all of the provisions and the following conditions set out by Kintone Corporation (hereinafter referred to as "Kintone"), who will provide a Kintone developer license to the User.

[Kintone Developer License Terms of Service](#)

Developer License Application Form

First Name*

Last Name*

Email*

Company Name*

Create your Kintone Developer License subdomain (lowercase, numbers and hyphens only)*

For example: mydomain, coffee-lovers

I agree with the [Kintone Developer License Terms of Service*](#)

protected by reCAPTCHA

[Privacy](#) - [Terms](#)

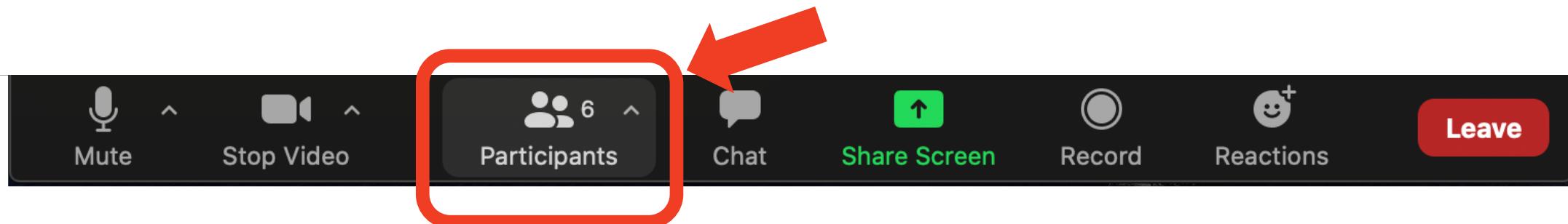


Sign Up



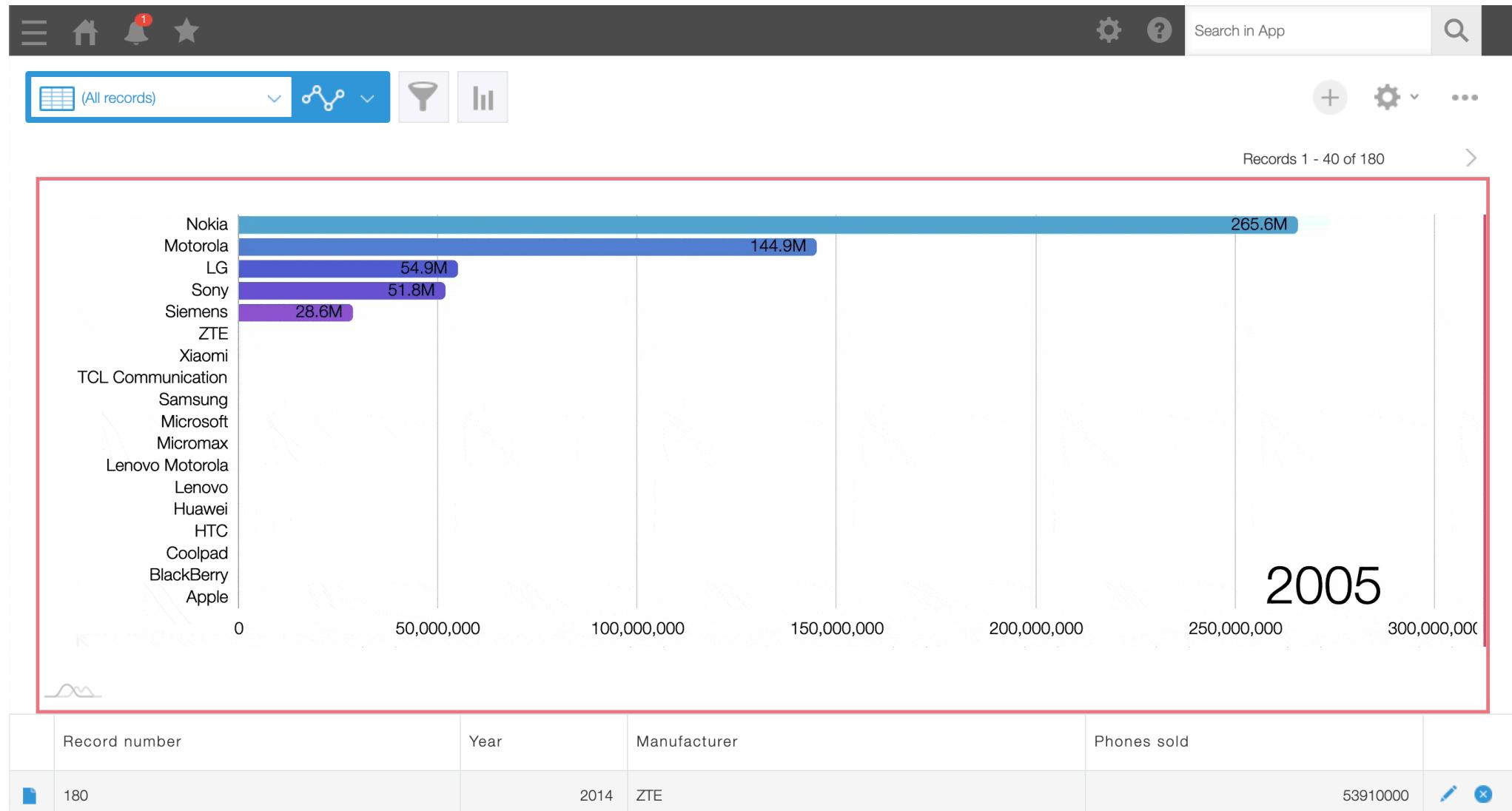
Let's Practice Raising Your Hand in Zoom

This helps us out who to look out for throughout this workshop.





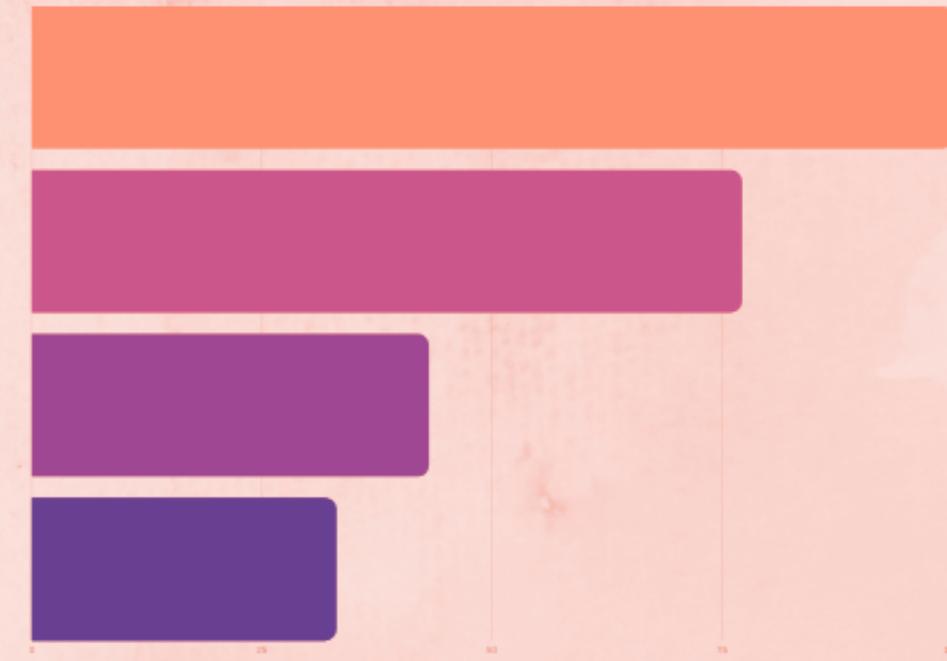
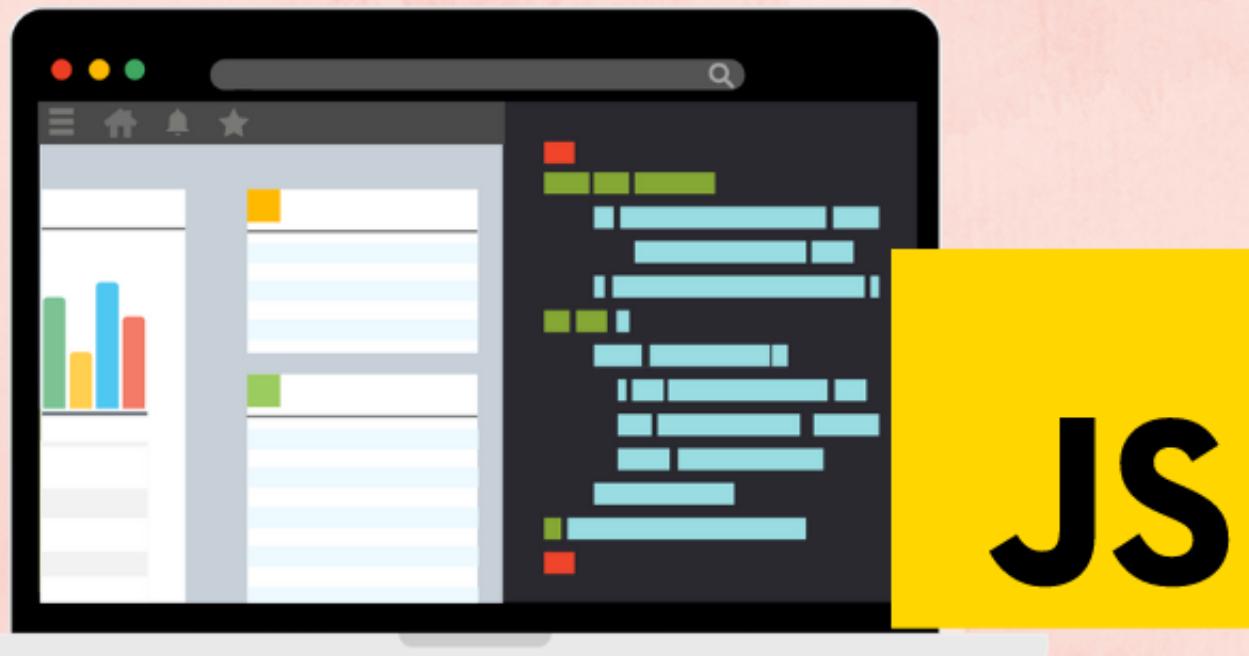
What We Will Make Today





No Server Data Visualization

Build a Bar Chart Race Project!



This Workshop is For

Front-end developers who want to **spend less time**
setting up their back-end infrastructure



I want to **concentrate** on
the **UI/UX** of my project!

Hey! I'm Nim.

My Career Path:

Hack Reactor SF



Kintone Sales Engineer



Lead Sales Engineer



Sales Engineering Manager



Technical Evangelist



Today's Agenda

- 1 Get the Big Picture**
- 2 Create a Kintone App**
- 3 Display amCharts on Kintone**
- 4 Call REST APIs from Kintone**

Today's Agenda

- 1 Get the Big Picture**
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- 4 Call REST APIs from Kintone**

Scope of Traditional Data Analytics

Nearly all conversations about Data Analytics revolve around three goals:

- Make data look pretty
- Understand the data easily
- Generate actionable insight

But are we **sharing** the insights effectively?



Missing - Unified Communication

Data Silos

Information is not being
shared effectively

Scattered Communication
Unclear where the
conversation is happening

Where Kintone is Special!



What is Kintone?

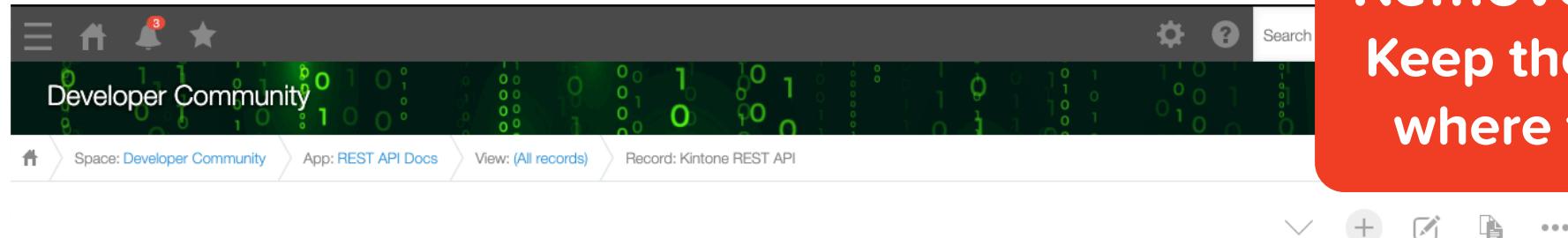
The screenshot displays the Kintone interface with several sections:

- Customer Database:** Shows a grid with three items: Admin:Green, Admin:Green, and Admin:Green.
- Sales Leads:** Shows a grid with three items: Admin:Green, Admin:Green, and Admin:Green.
- Contact Log:** Shows a grid with three items: Admin:Green, Admin:Green, and Admin:Green.
- Threads:** A list of threads including "Deal Flow" (Apr 3 11:24 AM), "Sales Division" (Apr 1 11:49 PM), and "Monthly Reports" (Apr 1 11:45 PM).
- Apps:** A list of applications including Vendor Database, Item Database, Product List, Invoices, Seminar Survey, Attendee Lists, Event Calendar, Activity Log, Sales Leads, and Customer Database.
- Dashboard:** A section with two charts:
 - A bar chart titled "[Of] Sales Leads: Monthly Expected Sales (per priority)" showing sales for Middle, High, and Low priorities over time.
 - A pie chart titled "Total(Amount)" showing the distribution of sales by creator type: Form Creator, Viewer, T/C, and Int Creator.
- People:** A list of members including Hiroko ..., Mary Si..., John S..., Rudy Red, Polly Pink, Bill Blue, Glen Gr..., Paul Gray, Mark Pe..., and Dannie

At the bottom left, it says "Apr 1 10:43 PM Mary Simpson".

Kintone is a **no-code / low-code** cloud platform for teams to easily share and **collaborate** on their **data** efficiently.

What is Possible?



Where
Data
Lives

A screenshot of the Kintone REST API Docs interface, identical to the one above but with a blue border. It shows the same table of contents and fix history table.

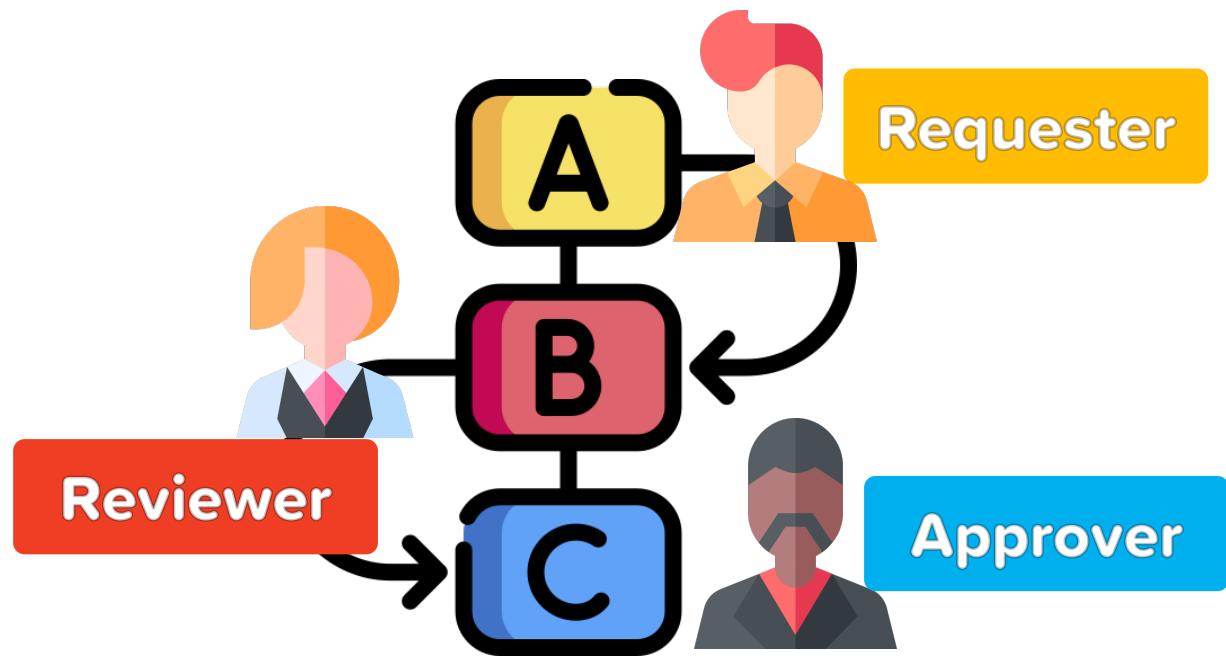
Remove the Friction
Keep the conversation
where the data lives

A screenshot of a communication feed. The top bar says 'Write your comment here.' A message from '3: Clare - Support' (@Sharon - Developer @Genji) says 'Done!'. Below it, '2: Sharon - Developer' (@Genji) says 'Oh, shoot, thanks for catching my mistake!' and '1: Genji' says 'Please take a look at this document.' There are 'Like' and 'Reply' buttons for each message.

Where
Communication
Lives

Workflow

With Process Management,
establish a workflow so that the
right people sees the **right info**
at the **right time**.



Developer Community

Space: Developer Community App: KDP Event View: Summary Record: No Server Data Visualization: Build a W

Assign Reporter Change Assignee

Next Status:
Writing Report

Select Assignee:

- Genji
- Sharon - Developer
- John - Manager
- Clare - Support

Cancel Confirm

Write your comment here.

Community

Project

Support

Event Image

No Server Data Visualization JS Build a Word Cloud!

tickets-115435658161

2: John - Manager @Genji Assign this event to @Clare - Support

1 Unlike Reply

1: Genji @Sharon - Developer The together such a great w

Like Reply

Kintone Apps

The screenshot shows the Kintone Shared To Do app interface. At the top, there's a navigation bar with icons for home, notifications (15), and a star. The title 'Shared To Do' is displayed, along with the subtitle 'App: Shared To Do'. Below the title, a descriptive message states: 'To Do App with Process Management feature. All tasks assigned to you can be viewed under "Assigned to me" section on the portal page. Always be organized and on time by setting up reminders and visualizing team's progress through snazzy graphs.' The main area is a table titled 'My To Do' with the following columns: To Do, Priority, Due date, Status, Details, and Attachment. The table contains five records:

To Do	Priority	Due date	Status	Details	Attachment
Define requirements	Medium	Apr 05, 2019	In progress	Please start defining the requirements for our ne...	/x
Research vendors	Medium	Apr 08, 2019	Complete	Find at least 3 vendors and summarize their pro...	/x
Send invoice to customer	High	Apr 11, 2019	Assigned		/x
Define scope	Low	Apr 12, 2019	Assigned	XYZ Project would be a long project divided into...	/x
Map out schedule	Low	Apr 19, 2019	Assigned		/x

At the bottom of the table, it says 'Records 1 - 5 of 5'. The interface also includes a search bar, a gear icon for settings, and a three-dot menu icon.

The main building block in Kintone is an **App**.

Imagine an **App** as a powerful, online table where data is stored in records.

Kintone Apps

Sales & Leads > Settings

Last Updated: Mary Simpson 12:10 AM

Sales & Leads

Form Views Graphs App Settings

Save Form

Leads & Sales

Lead Title Sales Representative

Contact Info

Company Name Website

Contact Name Job Title

Email Telephone Number

Product Name Product ID Unit Price Quantity

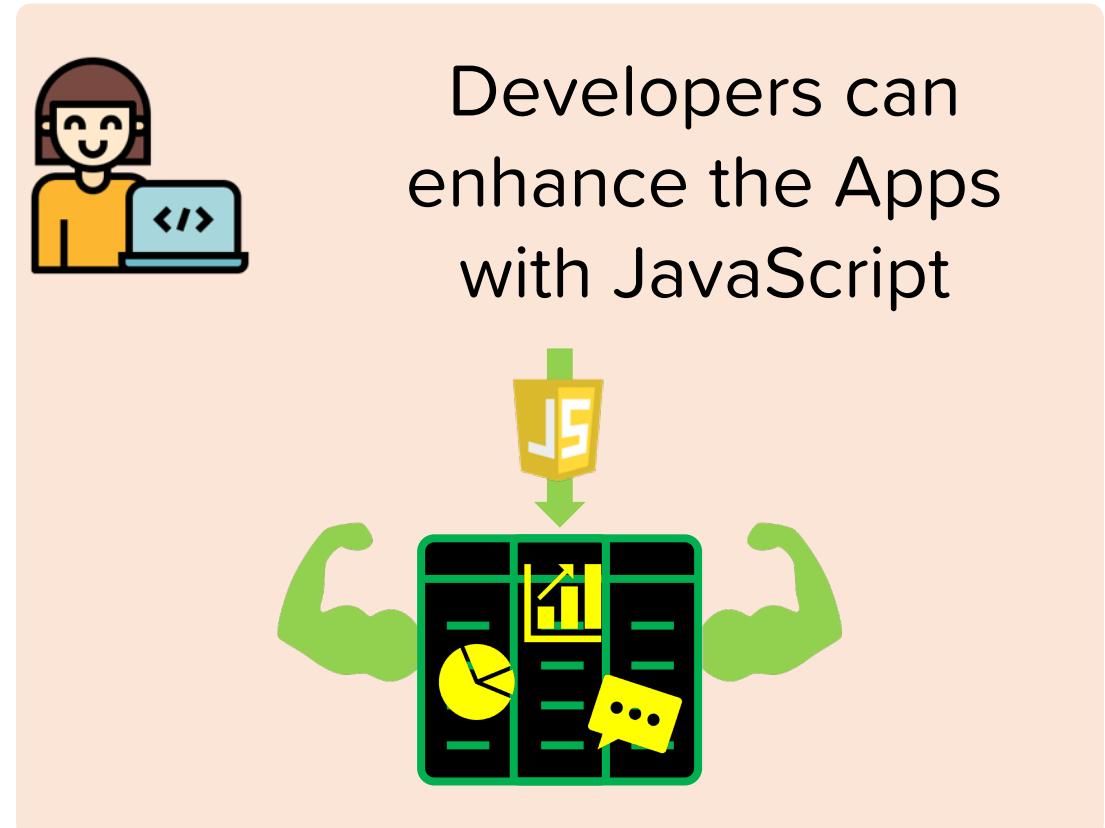
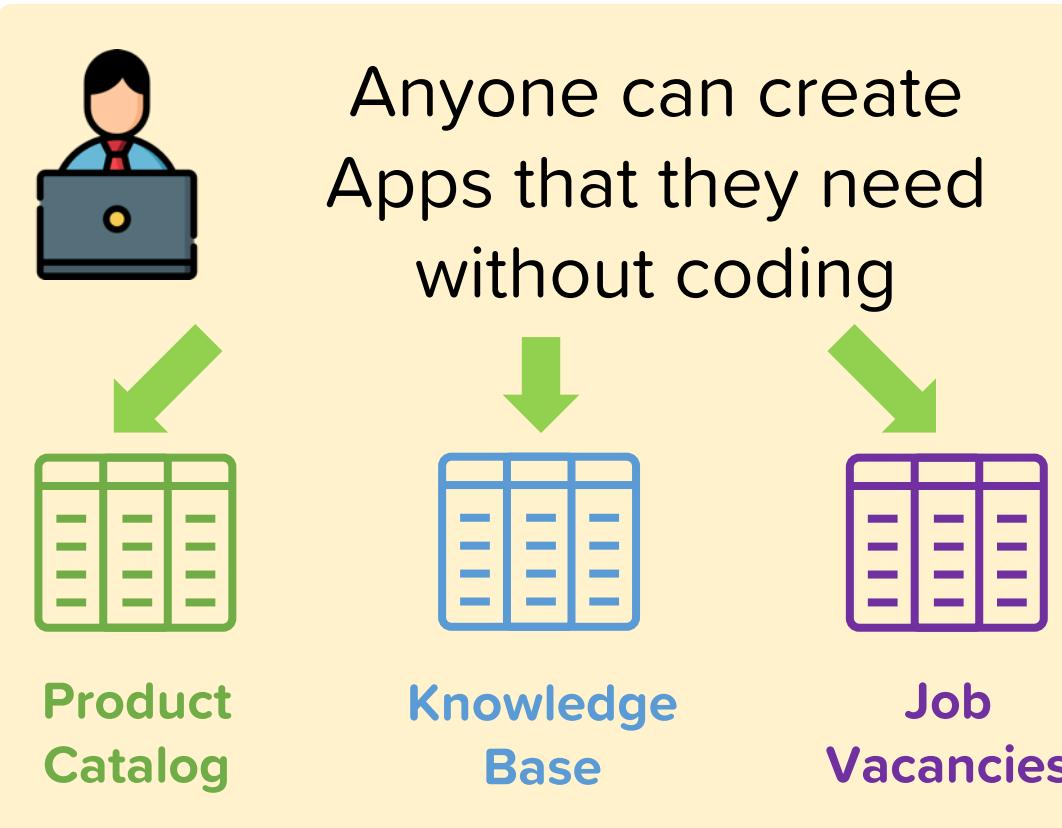
The screenshot shows the Kintone app builder interface for a 'Sales & Leads' application. The top navigation bar includes 'Sales & Leads > Settings' and a timestamp 'Last Updated: Mary Simpson 12:10 AM'. Below the title, there are tabs for 'Form', 'Views', 'Graphs', and 'App Settings', with 'App Settings' currently selected. A large green button labeled 'Save Form' is visible. The main workspace is titled 'Leads & Sales' and contains a 'Lead Title' field and a 'Sales Representative' field with a search icon and user icon. Under 'Contact Info', there are fields for 'Company Name' and 'Website', with 'Lookup' and 'Clear' buttons. Below that, there are fields for 'Contact Name' and 'Job Title'. At the bottom, there are fields for 'Email' and 'Telephone Number'. A product table at the bottom shows columns for 'Product Name', 'Product ID', 'Unit Price', and 'Quantity'. On the left side, a sidebar lists various field types: Label, Rich text, Number, Radio button, Multi-choice, Date, Date and time, Link, Department selection, Related records, Blank space, Field group, Record number, Created datetime, and Updated datetime. Each item has a preview icon and a settings gear icon.

Apps are easy to **create** using a **drag-and-drop** interface with no coding needed.

Apps are extensively **customizable** with client-side **JavaScript**.

Everyone Contributes!

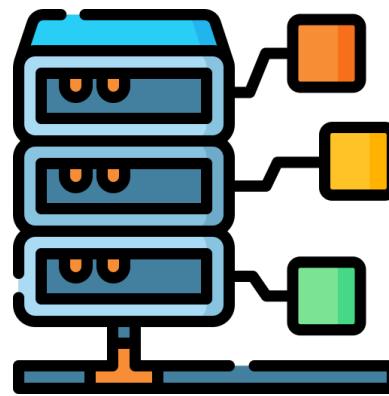
As a **no-code & low-code platform**, Kintone supports non-coders with visual programming UI while enabling sophisticated customization



Fulfill the Promise of Data Analytics

Gain meaningful insights about the data that become operationalized quickly.

Data + Communication



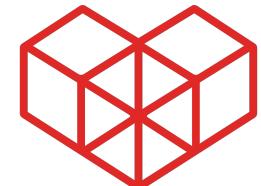
Insight



Action



How Developers Contribute

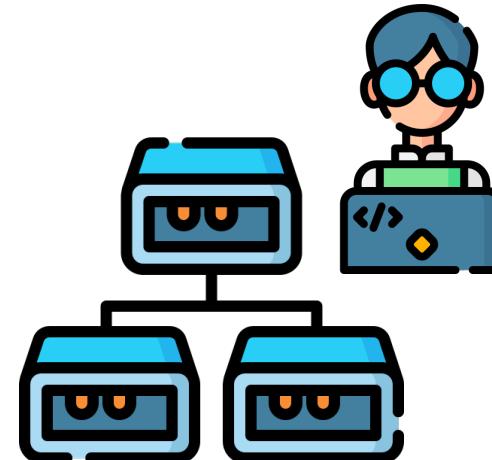


kintone
developer program

How Developers Contribute

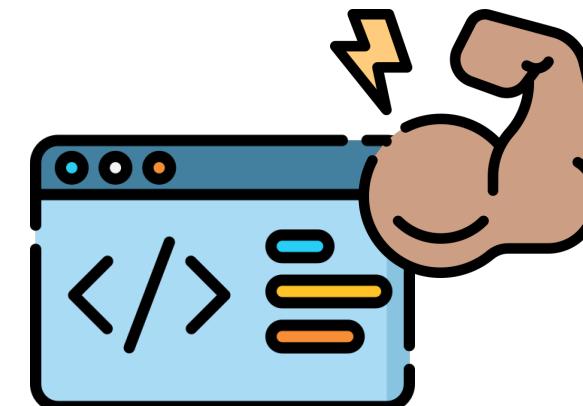
Command Center

- Create a custom look & feel
- Integrate with 3rd party web applications to exchange data



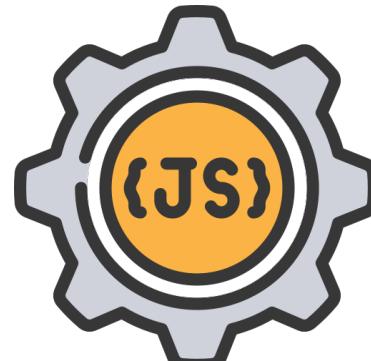
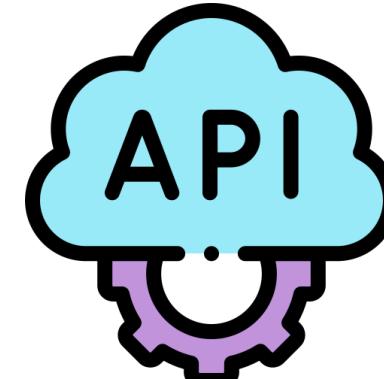
Enhancements

- Develop JavaScript customizations
- Build & share extensions



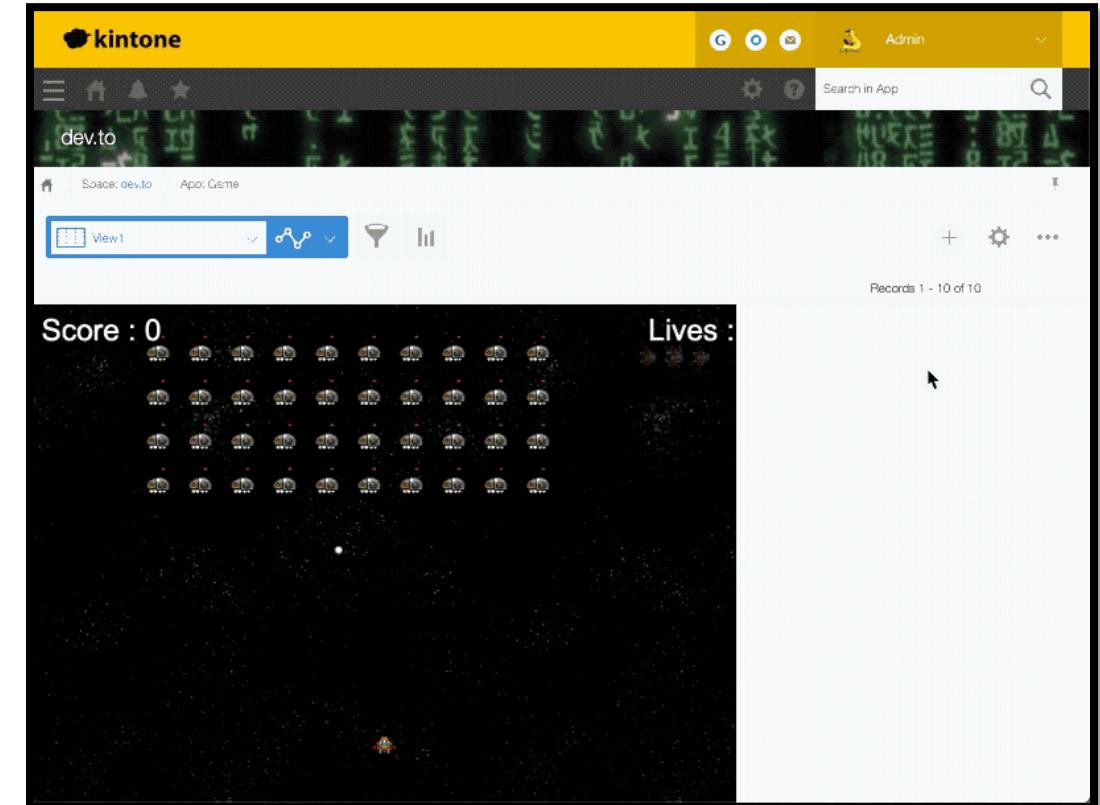
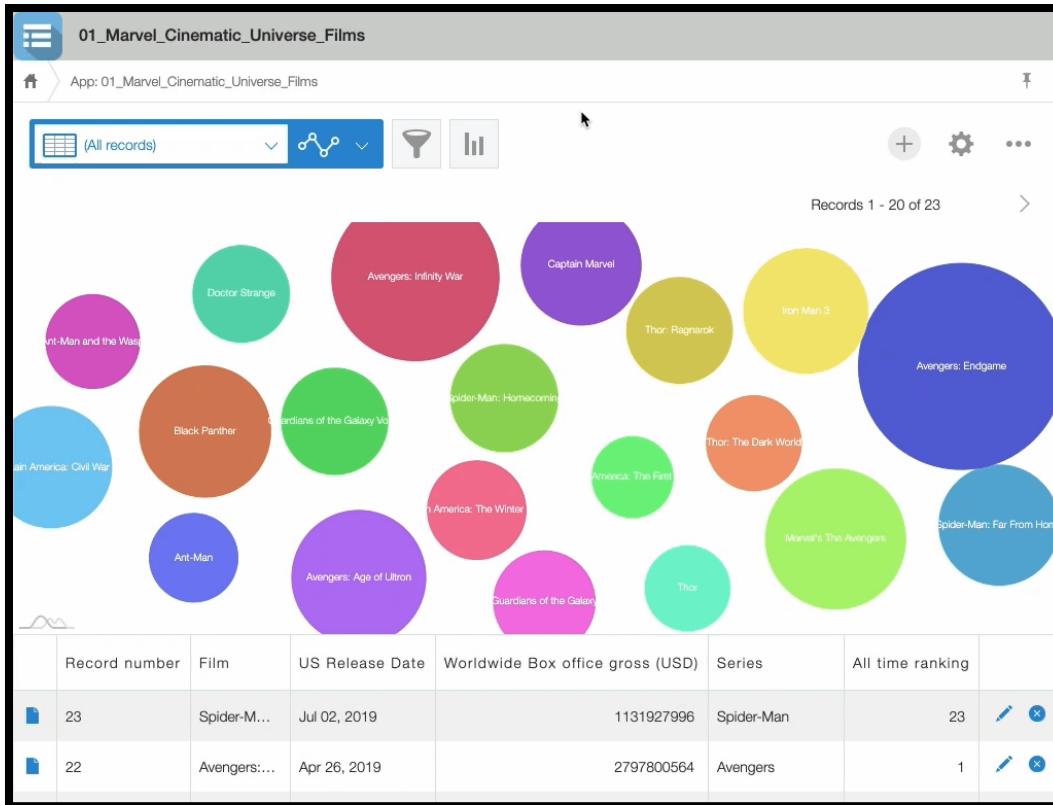
Tools Inside Kintone

- JavaScript APIs
- REST APIs
- API Tokens
- Webhook
- Plugins
- JavaScript Customizations
- CSS & HTML Customizations
- Precise Permission Controls



Create a Custom Look and Feel

Display data the way you want with HTML, JS, and CSS



Kintone For Self Learning



Keep learning new
JavaScript tricks!

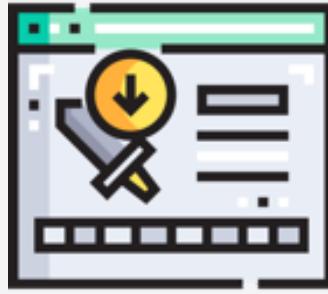


Contribute your
learnings to tech
blogs



Share your
projects with your
community!

Kintone For Creating Revenue



Create & sell
Kintone
extensions



Consult with firms
on achieving
business goals



Develop Kintone
customizations for
customers

How Is This Related to Building Projects With No Servers?

Kintone will:



become your server running your database



let you create your databases with GUI



allow you to concentrate on the front-end work

Today's Agenda

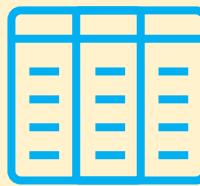
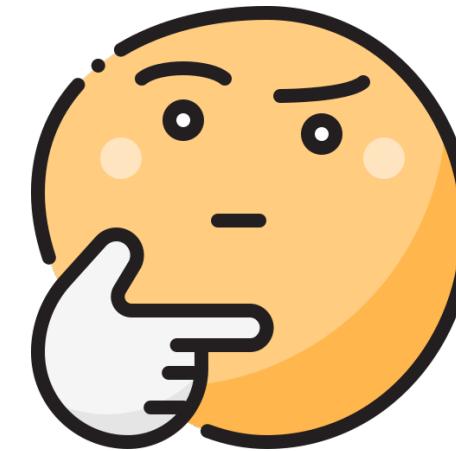
- 1 Get the Big Picture**
- 2 Create a Kintone App**
- 3 Display amCharts on Kintone**
- 4 Call REST APIs from Kintone**

\$25 Amazon Gift Card
Raffle at the end!

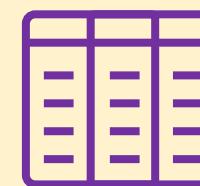


Let's Create a Kintone App! (A Database)

What sort of database shall we make?



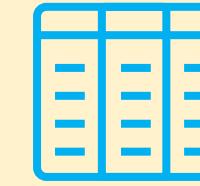
Employee List



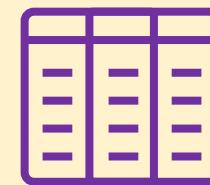
CRM



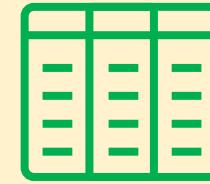
Expense Report



Company FAQ



Board Game DB



Lunch DB



Hands-On Walk-Through

- 1** First, let's go over the steps to build the app
- 2** Then, build the app as an exercise





Getting Your Kintone Environment

1

Sign up for a Kintone
Developer Account

bit.ly/KDP_signup



Do NOT use Safari



Accept Cookies First



Use Chrome & Firefox

2

Create a Kintone
Subdomain

bit.ly/K_DevLic



No Special Characters



Only use lowercase [a-z],
numbers [0-9], & hyphens [-] in
your subdomain



Check Your Email



Welcome to Kintone! One More Step To...

The screenshot shows a Gmail inbox with one email. The subject is "Welcome to Kintone! One More Step to Developer License". The sender is "Will Sayama akihiro-sayama@cybozu.com via bf06x.hubspotemail.net to me". The email body contains an orange banner with the kintone logo and the text "ONE MORE STEP FOR YOUR DEVELOPER LICENSE!". Below the banner, there is a message: "Howdy! Please click the button below to activate your developer license and complete the sign-up process." followed by a red "Activate Now" button. At the bottom, a note says: "Only valid for 24 hours. Please click [here](#) if an error is displayed after the expiration. Your subdomain name is devevents2."

YOUR_SUBDOMAIN.kintone.com

The screenshot shows a web browser window with the URL "https://your_subdomain.kintone.com/...". The page title is "Set Initial Password". It has two input fields: "New Password" and "Confirm New Password". Below the "New Password" field is a note: "Enter minimum 8 characters, including both letters and numbers." At the bottom is a blue "Set Password" button.

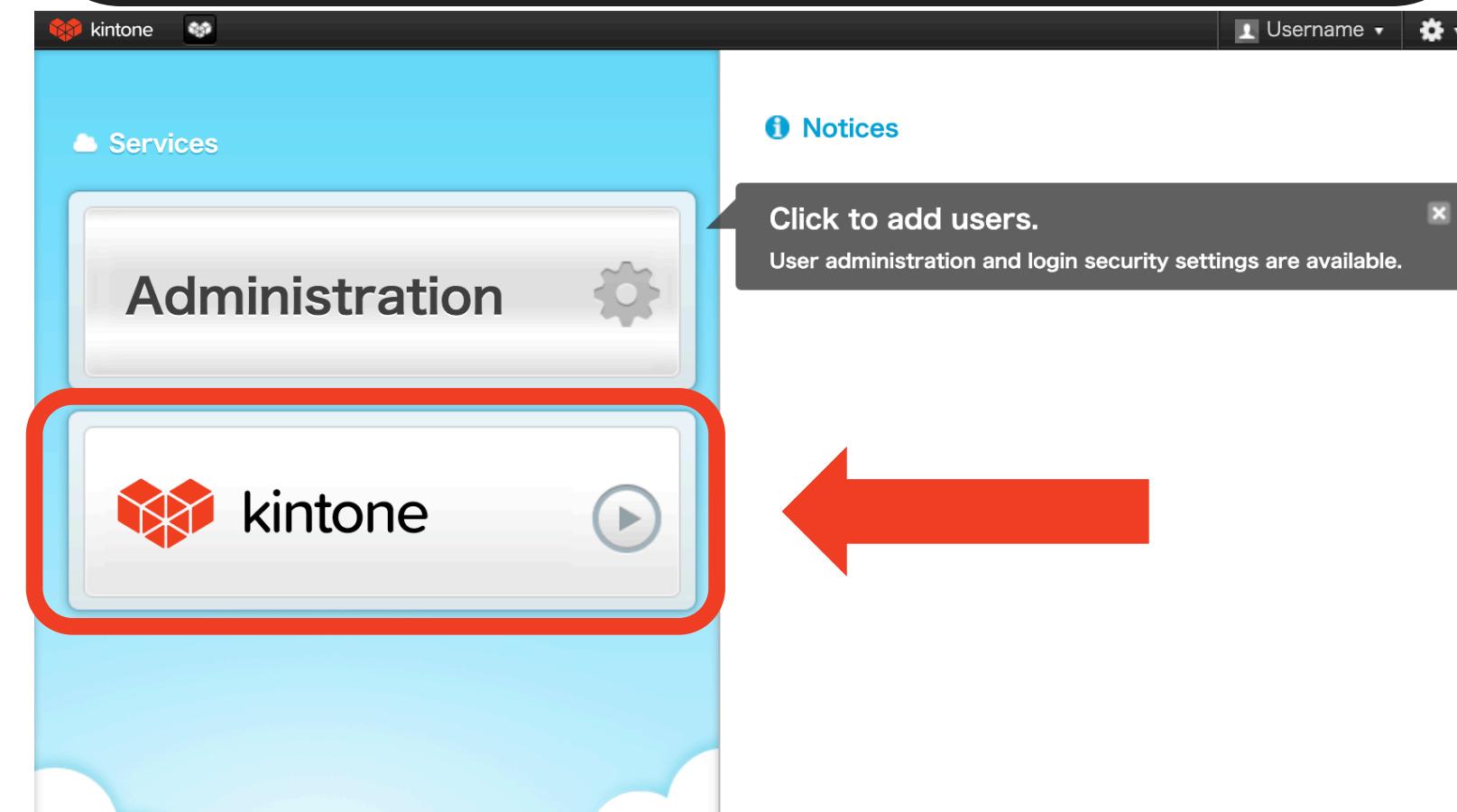


Let's Log into Kintone

Click on Kintone button
on the Left side

The email has the
initial registration link
& subdomain

[https://YOUR_SUBDOMAIN.kintone.com/...](https://YOUR_SUBDOMAIN.kintone.com/)





Create a Kintone App (Web Database)

On the Left side of the
Portal

- > Find the **Apps** section
- > Click on the [+] button on the left side

The screenshot shows the Kintone Portal interface. On the left, there is a sidebar with sections for 'Announcement', 'Spaces', and 'Apps'. A red arrow points from the text 'On the Left side of the Portal' to the 'Apps' section. A red box highlights the '+ Add New App' button in the 'Apps' section. The main content area displays the 'Welcome to Kintone!' dashboard, which includes sections for 'How to use Kintone', 'How to use the Announcements dashboard', and a timestamp of 'Aug 8, 2017 11:00 AM Administrator'. Below the main content are 'Notifications' and 'Read' status indicators.



Create a Kintone App (Web Database)

Under the Create New App section, select the **Create App from Scratch** button

The screenshot shows the Kintone Marketplace interface. At the top, there's a navigation bar with the Kintone logo, user profile, and search bar. Below it, the main title is "Kintone Marketplace". On the left, there's a sidebar titled "By Department" with categories like Sales, Customer Service, Human Resources, IT & Administration, Research & Development, Marketing, Legal & Finance, and Company-wide. In the center, there's a section titled "How to Find Apps?" with instructions: "Click the left category names to look for apps in the Kintone Marketplace, or enter a keyword in the search box." Below this, there's a "Create New App" section with two options: "Create App from Scratch" (which is highlighted with a red box and arrow) and "Create from Excel".



Title Your Kintone App

This is the App Builder!

Let's start by naming
the new App!

Title it by clicking on
"New App" and type
Board Game DB

The screenshot shows the Kintone App Builder interface. At the top, there is a navigation bar with the Kintone logo, a user icon labeled 'Username', and a search bar. Below the navigation bar, the breadcrumb path reads 'Kintone Marketplace > New App > Settings'. A large blue button in the center has the text 'Board Game DB' on it, with a red arrow pointing to the right side of the button. To the right of the button are two buttons: 'Discard' and 'Activate App'. Below the title button, there is a navigation bar with tabs: 'Form', 'Views', 'Graphs', and 'App Settings'. The 'Views' tab is currently selected. On the left side, there is a green button labeled 'Save Form'. Below it is a grid of field icons with labels: Label, Text, Rich text, Text area, Number, Calculated, Radio button, Check box, Multi-choice, Drop-down, Date, Time, Date and time, and Attachment. To the right of the field grid is a large grey arrow pointing downwards, with the text 'Drag and drop fields here.' below it.

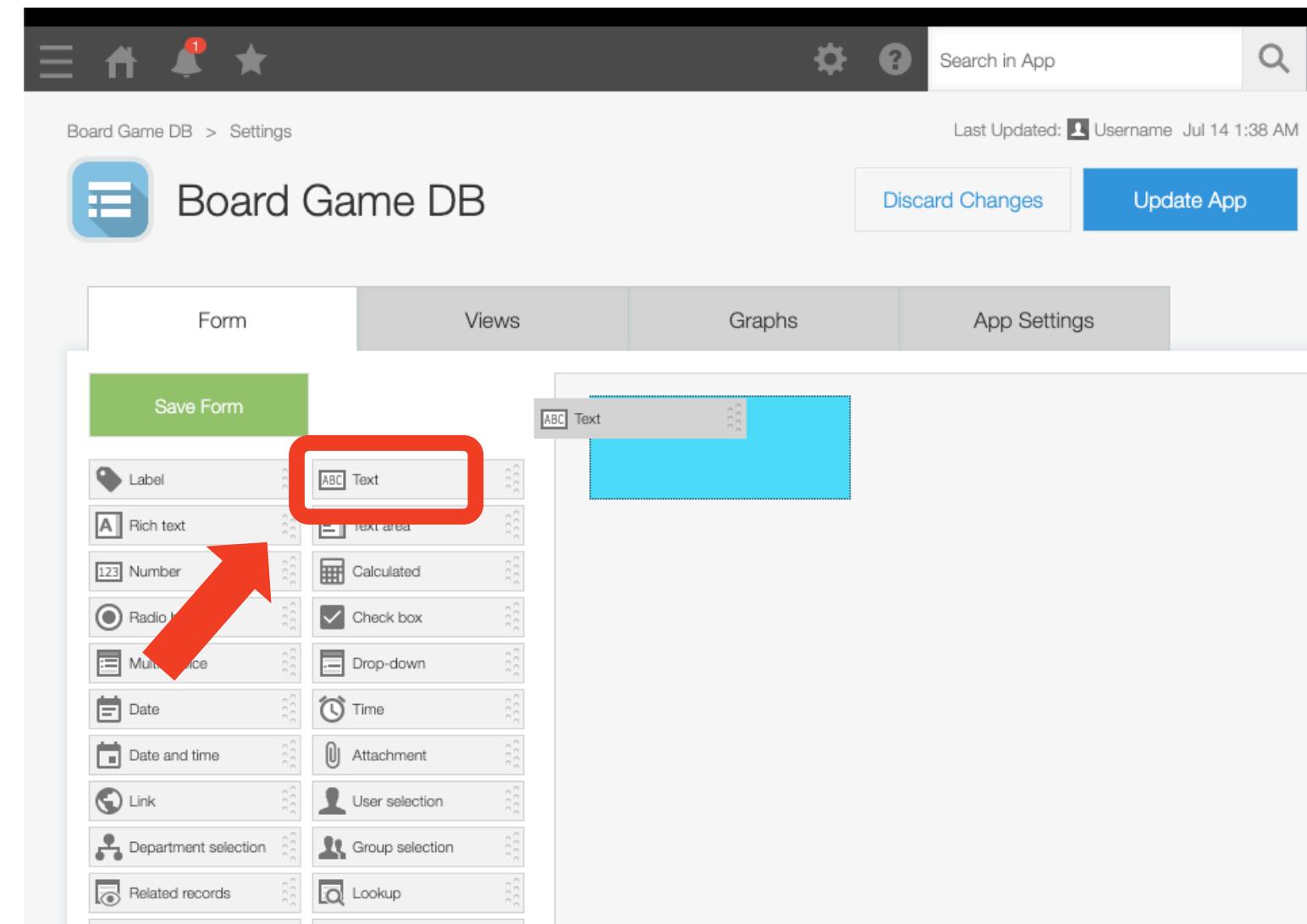


Drag and Drop the Text Field

Now let's add a **Text** field to the **Board Game DB** App!

On the Left side

- > Find the **[ABC] Text** field
- > Drag it to the middle





Configure the Text Field

Hover over the [ABC] Text field

- > Click on the Gear icon 
- > Replace Text with **Name**
- > Click on the **Save** button

Kintone Marketplace > Board Game DB > Settings

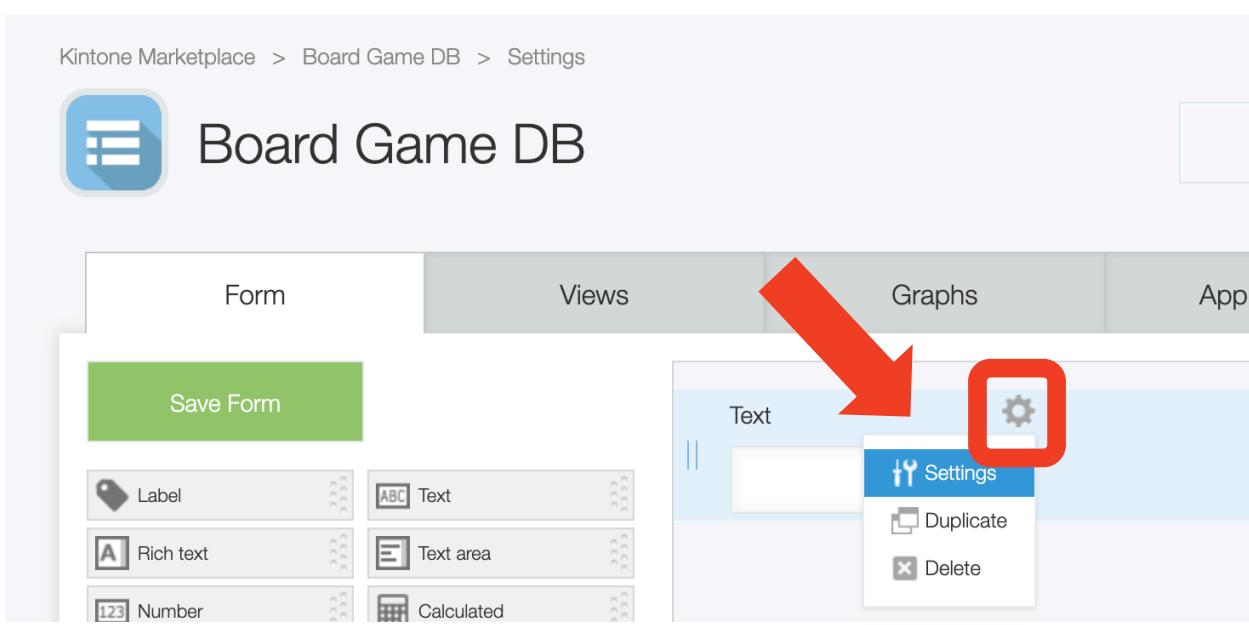
Board Game DB

Form Views Graphs App S

Save Form

Text 

Label Rich text Number Calculated



ABC Text Settings

Name * **Name** 

Hide field name

Calculate automatically 

Required field

Prohibit duplicate values

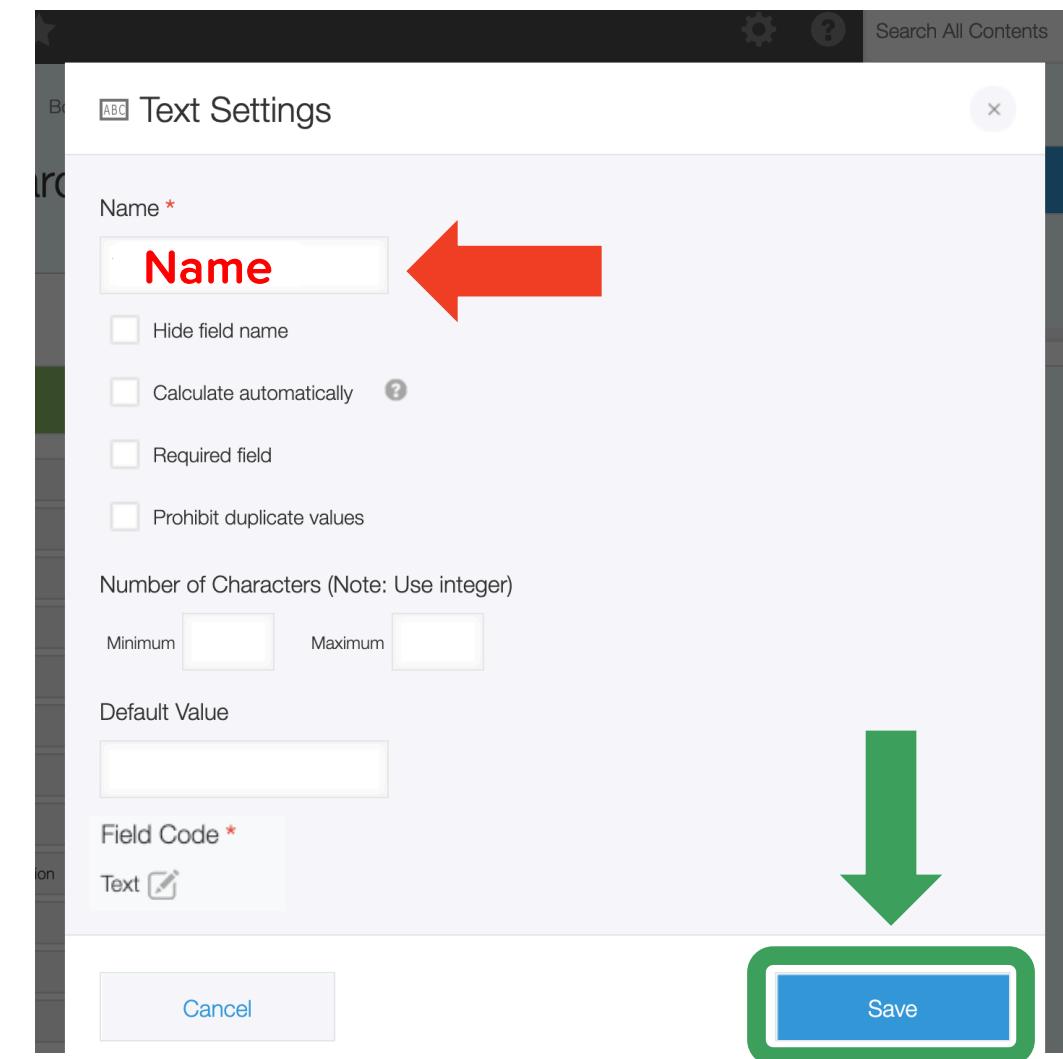
Number of Characters (Note: Use integer)

Minimum Maximum

Default Value

Field Code * 

Cancel  Save





Drag and Drop the Drop-down Field

let's add a **Drop-down** field
to the **Board Game DB**
App!

On the Left side

- > Find the **Drop-down** field
- > Drag it to the middle

The screenshot shows the 'Board Game DB' application interface. At the top, there is a navigation bar with icons for home, notifications (1), and search, followed by 'Search in App'. Below the notifications icon is a gear icon for settings. On the right, it says 'Last Updated: Username Jul 14 1:38'. There are two buttons: 'Discard Changes' and 'Update App'. The main area has tabs for 'Form', 'Views', 'Graphs', and 'App Settings', with 'Form' selected. A green 'Save Form' button is visible. To the right, there is a 'Name' input field. On the left, a list of field types is shown in a grid, with 'Drop-down' highlighted and surrounded by a blue dotted selection box. The list includes: Label, Text, Rich text, Text area, Number, Calculated, Drop-down, Radio button, Check box, Multi-choice, Drop-down, Date, Time, Date and time, Attachment, Link, User selection, Department selection, Group selection, and Person.



Configure the Drop-down field

Hover over the **Drop-down** field

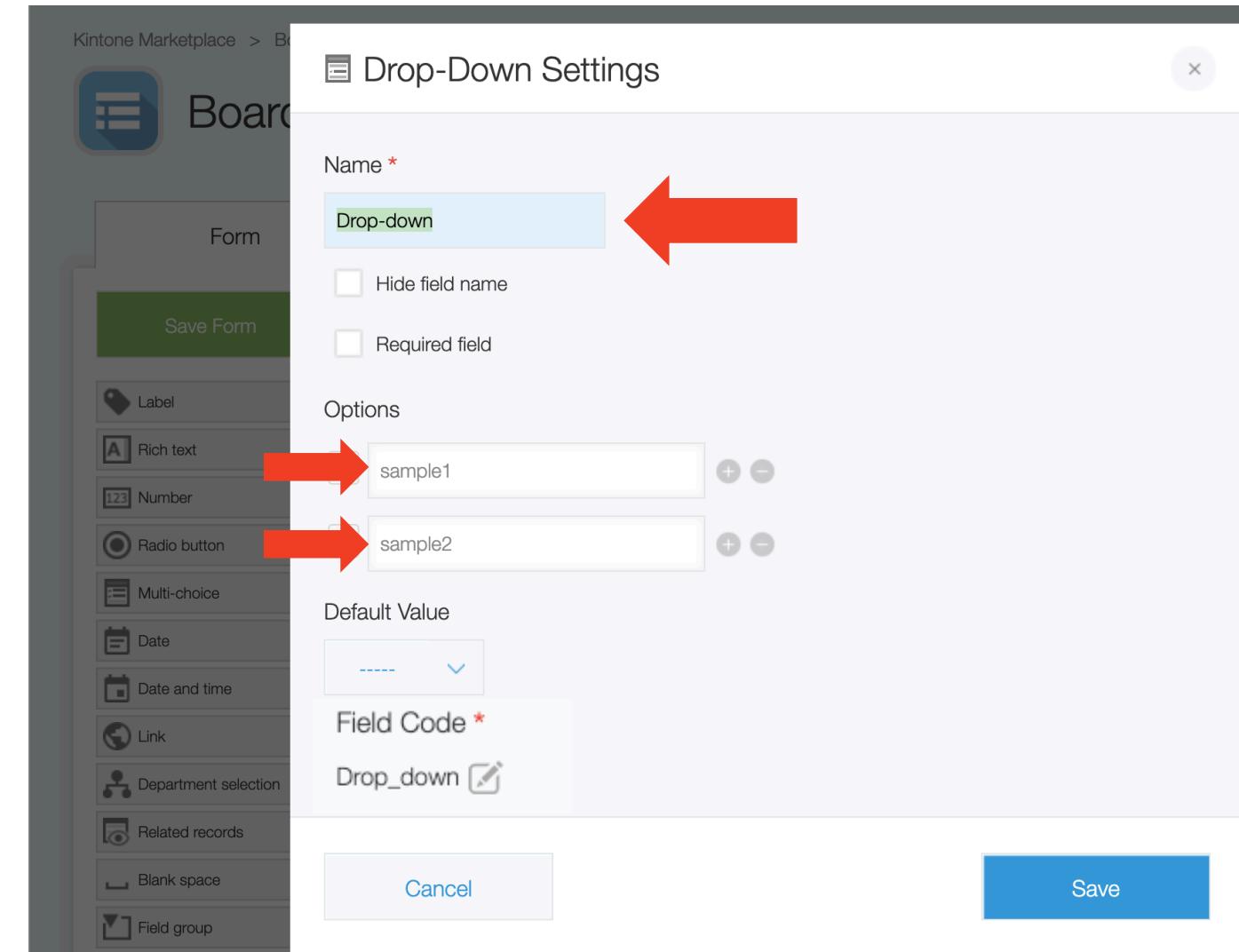
> Click on the Gear icon 

Replace the following text:

> "Drop-down" with **Type**

> "sample1" with **Abstract**

> "sample2" with **Area Control**

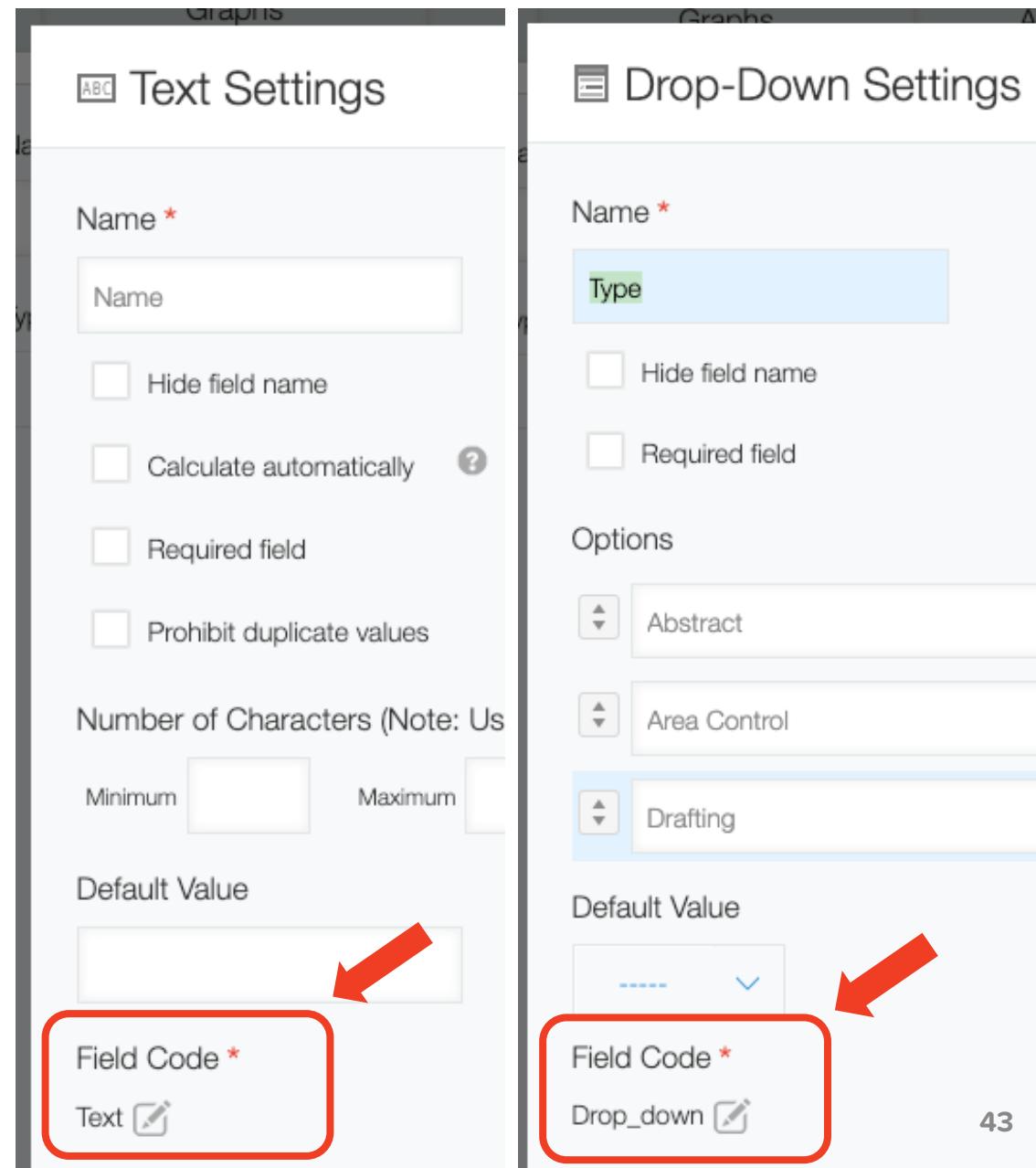


What are Field Codes?

The field code is the identifier for each field, represented as a string

- Name's field code = Text
- Type's field code = Drop_down

These are the default field code values for their respective fields





Save / Deploy the App!

Once you are finished setting up the fields, click **Activate App** to deploy it.

*Apps can always be updated later on

The screenshot shows the kintone application interface. At the top, there is a navigation bar with the kintone logo, a user icon labeled 'Username', and a search bar. Below the navigation bar, the breadcrumb path reads 'Kintone Marketplace > Board Game DB > Settings'. The main title 'Board Game DB' is displayed next to a blue icon. On the right side of the screen, there are two buttons: 'Discard' and a blue 'Activate App' button, which is highlighted with a red box and a red arrow pointing to it. Below these buttons, there is a tab bar with four tabs: 'Form', 'Views', 'Graphs', and 'App Settings'. The 'App Settings' tab is currently selected. In the center of the screen, there is a 'Save Form' button in a green box. To its right, there is a list of field types with small icons: Label, Text, Rich text, Text area, Number, Calculated, Radio button, Check box, Multi-choice, Drop-down, Date, Time, Date and time, and Attachment. On the far right, there is a form with fields for 'Name' and 'Type', with a dropdown menu open under 'Type'.



Save / Deploy the App!

The screenshot shows the Kintone application interface. At the top, there's a dark header bar with a gear icon, a question mark icon, and a code icon. To the right is a search bar labeled "Search in App" with a magnifying glass icon. Below the header is a red arrow pointing left from the word "Portal" towards a house icon in the portal bar. The portal bar also includes a bell icon and a gear icon. The main title "Board Game DB" is displayed above the list view. The list view itself has a blue header bar with a grid icon and the text "(All records)". It includes various filtering and sorting icons: a funnel, a line graph, and a bar chart. The main body of the list view shows columns for "Record number", "Name", and "Type". A message "(None)" is visible in the "Name" column. At the bottom of the list view, it says "Records 0 - 0 of 0".

Congrats!

You made your first
Kintone App!

Record View of the Board Game DB

This **Board Game DB** App is now accessible to any users in your Kintone environment

It is under the **Apps** section

The screenshot shows the Kintone portal interface. At the top, there's a dark header bar with icons for navigation, home, announcements, and favorites, along with a search bar labeled "Search All Contents". Below the header is a banner image of green leaves with water droplets. The main content area has a title "Portal" and a sub-section titled "Announcement" with a megaphone icon. A large red arrow points from the text "CLICK!" to the "Board Game DB" app entry in the "All Apps" list on the right side. The "Board Game DB" app entry is highlighted with a red border. To its left, the "Apps" section is visible, and above it, the "Spaces" section. The bottom of the screen shows the date and time "Aug 8, 2017 11:00 AM" and the user "Administrator".

Quick Overview of the App

The screenshot shows a Microsoft Power Apps application titled "Board game DB". The interface includes a navigation bar with a home icon and the app name, a search/filter bar with "All records" and other icons, and a table view of eight records. The table columns are "Record number", "Name", "Type", "Min Players", and "Max Players". Each row has edit and delete icons. A red box highlights the first two rows (records 7 and 8). A red line points from the text "Data you add to the App is listed here" to the table body. Another red line points from the text "Access the App's settings" to the gear icon in the top right corner of the table header. A red line also points from the text "Add new data" to the plus sign icon in the same corner.

Access the Details page of the row (record)

Data you add to the App is listed here

Add new data

Access the App's settings

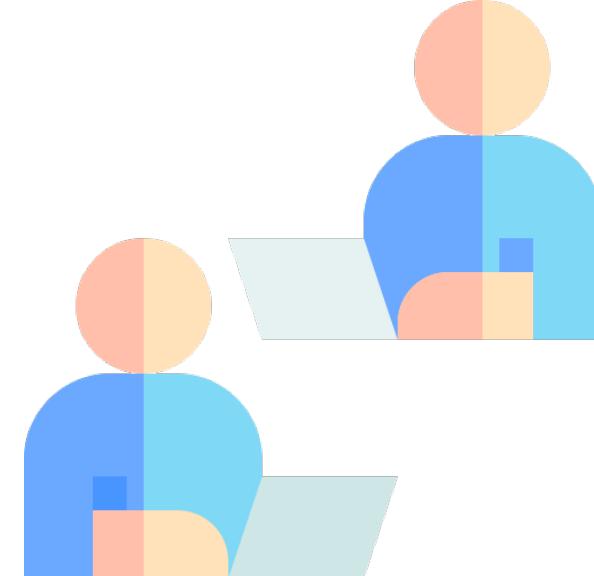
Record number	Name	Type	Min Players	Max Players	
8	Love Letter	Social Deduction	2	4	
7	Best Treehouse Ever	Drafting	2	4	
6	El Grande	Area Control	2	5	
5	Onitama	Abstract	2	2	
4	A Fake Artist Goes to New York	Social Deduction	5	10	
3	Ethnos	Area Control	2	6	
2	Treasure Hunter	Drafting	2	6	
1	Royal	Area Control	2	5	



Time To Get Started!

1. Go to the Kintone Portal page
2. Apps section > (+) Button
3. Create App from Scratch
4. Drag-&-Drop the **Text field**, name it **Name**
5. Drag-&-Drop the **Drop-down field**, name it **Type**
6. Add 3x options {Abstract, Area Control, & Drafting}
7. Hit the Blue **Activate App**
8. Raise Hand on Zoom when you are done

Want the Slides? Hit the
Download ZIP button at
bit.ly/KDP_Race



Want to Win a
\$25 Amazon
Gift Card?

Stay tuned till the
end & fill out our
quick survey



Short Break
10 min break

Today's Agenda

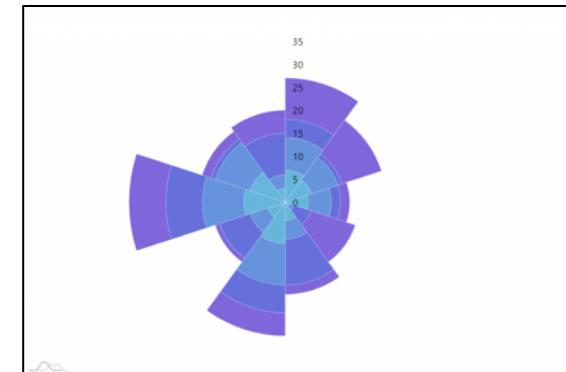
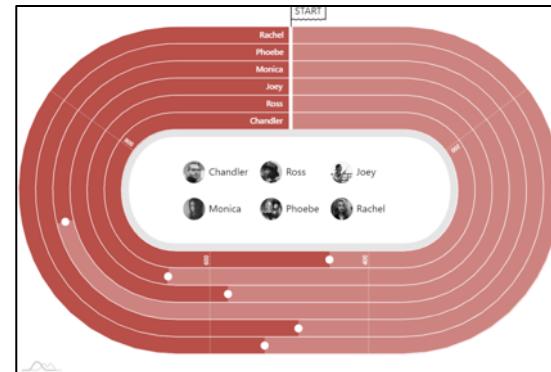
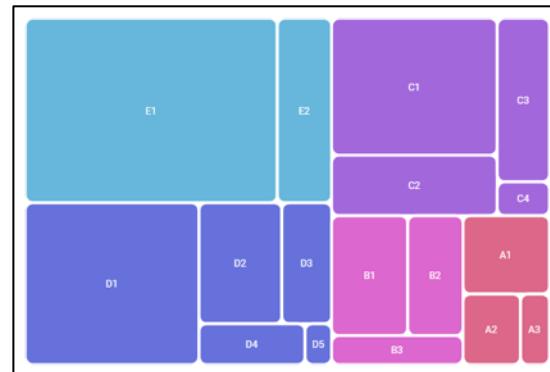
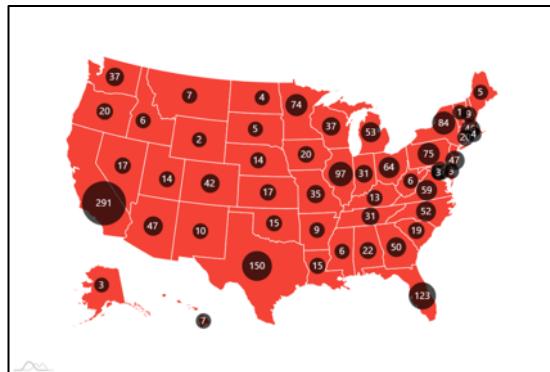
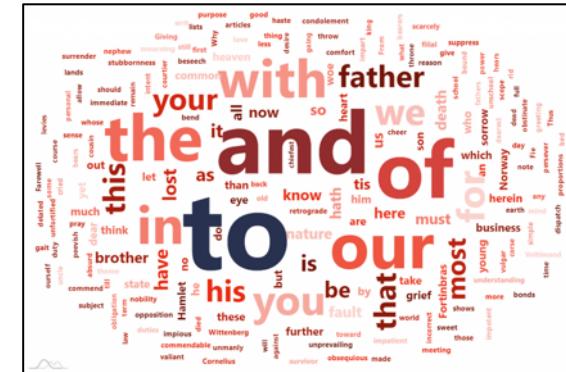
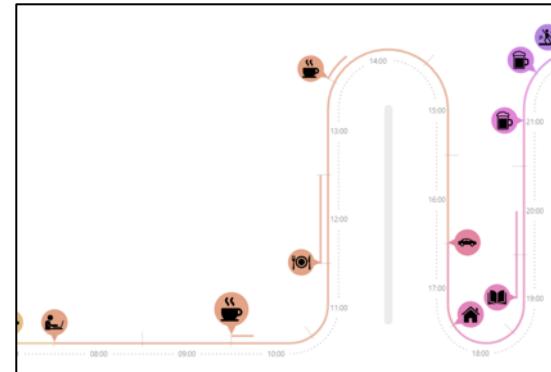
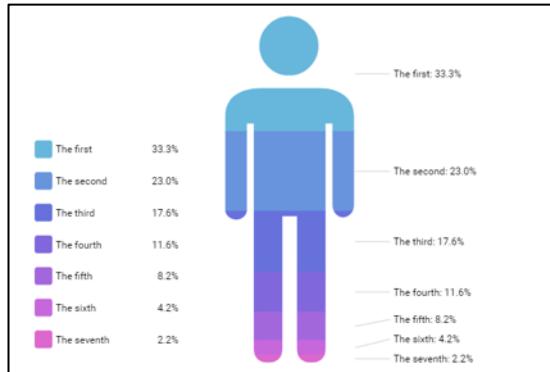
- 1 Get the Big Picture
- 2 Create a Kintone App
- 3 Display amCharts on Kintone
- 4 Call REST APIs from Kintone

What is amCharts?



www.amcharts.com

What Does amCharts Offer?



www.amcharts.com

How to Use amCharts (Front-End JavaScript)



Define website details

```
<html>
  <body>
    <h1>My Graph</h1>
    <div id="chartdiv"></div>
  </body>
</html>
```



Read libraries

```
<script src="https://www.amcharts.com/lib/4/core.js"></script>
<script src="https://www.amcharts.com/lib/4/charts.js"></script>
```

Define chart details

```
// Create chart instance
var chart = am4core.create("chartdiv", am4charts.PieChart);
// Add and configure Series
var pieSeries = chart.series.push(new am4charts.PieSeries());
pieSeries.dataFields.value = "litres";
pieSeries.dataFields.category = "country";
```

Define data

```
// Add data
chart.data = [ {
  "country": "Lithuania",
  "litres": 501.9
}, {
  "country": "Czechia",
  "litres": 301.9
}, {
  "country": "Ireland",
  "litres": 201.1
}
```

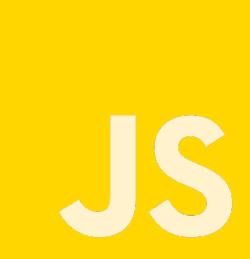
How to Use amCharts on Kintone?



Define website details

```
<html>
  <head>
    <title>My Graph</title>
  </head>
  <body>
    <div id="chartdiv"></div>
  </body>
</html>
```

We will use the Kintone platform's HTML



Read libraries

```
<script src="https://www.amcharts.com/lib/4/core.js"></script>
<script src="https://www.amcharts.com/lib/4/charts.js"></script>
```

We will set these links in the App's settings

Define chart details

```
// Create chart instance
var chart = am4core.create("chartdiv", am4charts.PieChart);
// Add and configure Series
var pieSeries = chart.series.push(new am4charts.PieSeries());
pieSeries.dataFields.value = "litres";
pieSeries.dataFields.category = "country";
```

Define data

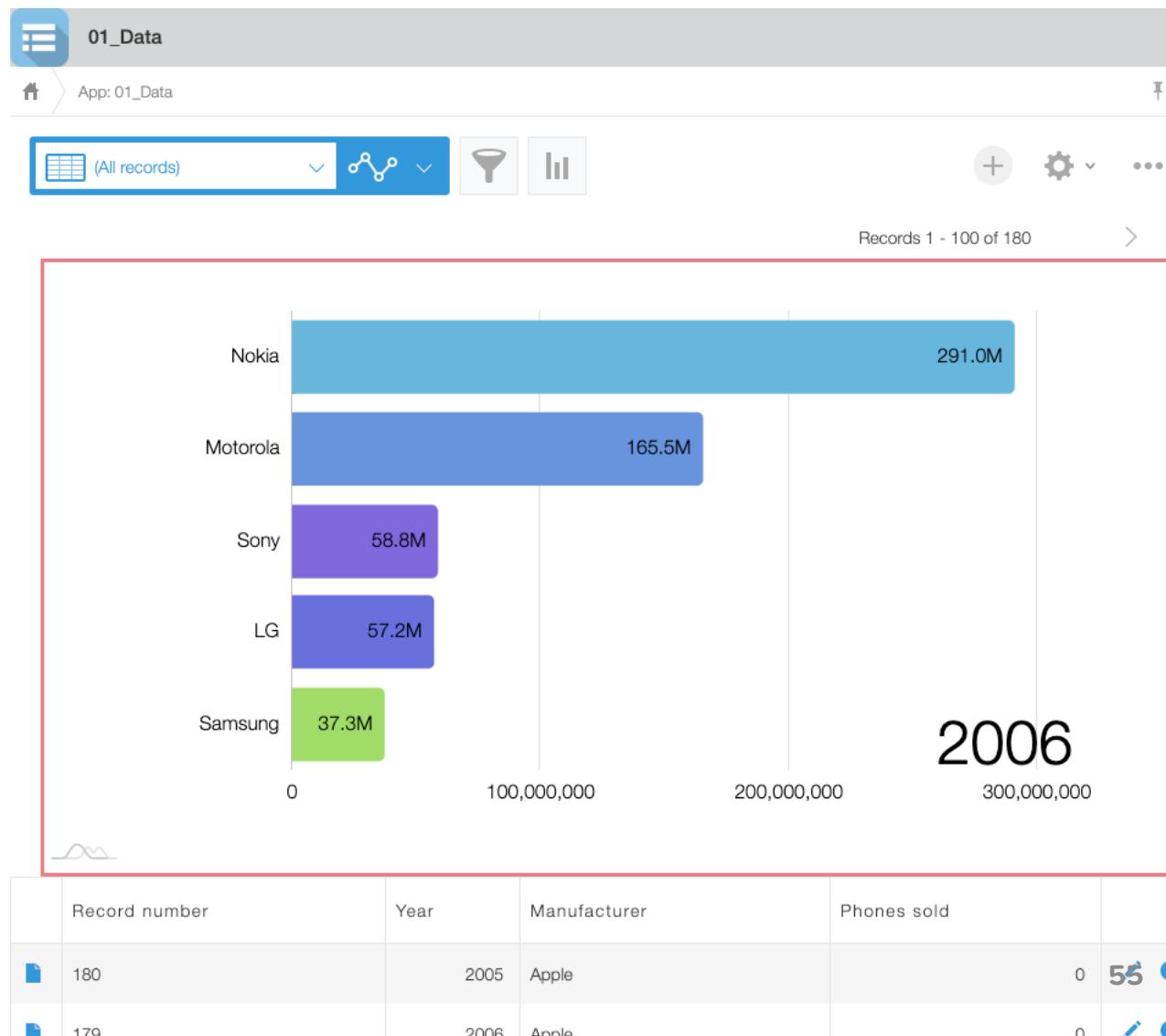
```
// Add data
chart.data = [
  {
    "country": "Ireland",
    "litres": 201.1
  },
  {
    "country": "Czechia",
    "litres": 301.9
  }
];
```

We will use the data that lies inside the Kintone Apps

Overview of amCharts on Kintone

In our next hands-on, we will create a new **App** from a **CSV** file.

We will then **add JavaScript** to the App that utilizes the **amCharts library**, so we can do some stylish data visualization.



Hands-On Walk-Through

- 1** First, let's go over the steps to build the app
- 2** Then, build the app as an exercise



amCharts Customization for Kintone

1. Create a new Kintone App from a CSV file
2. Add amCharts libraries to the App
3. Add a custom JavaScript file to the App
4. Redeploy the Kintone App

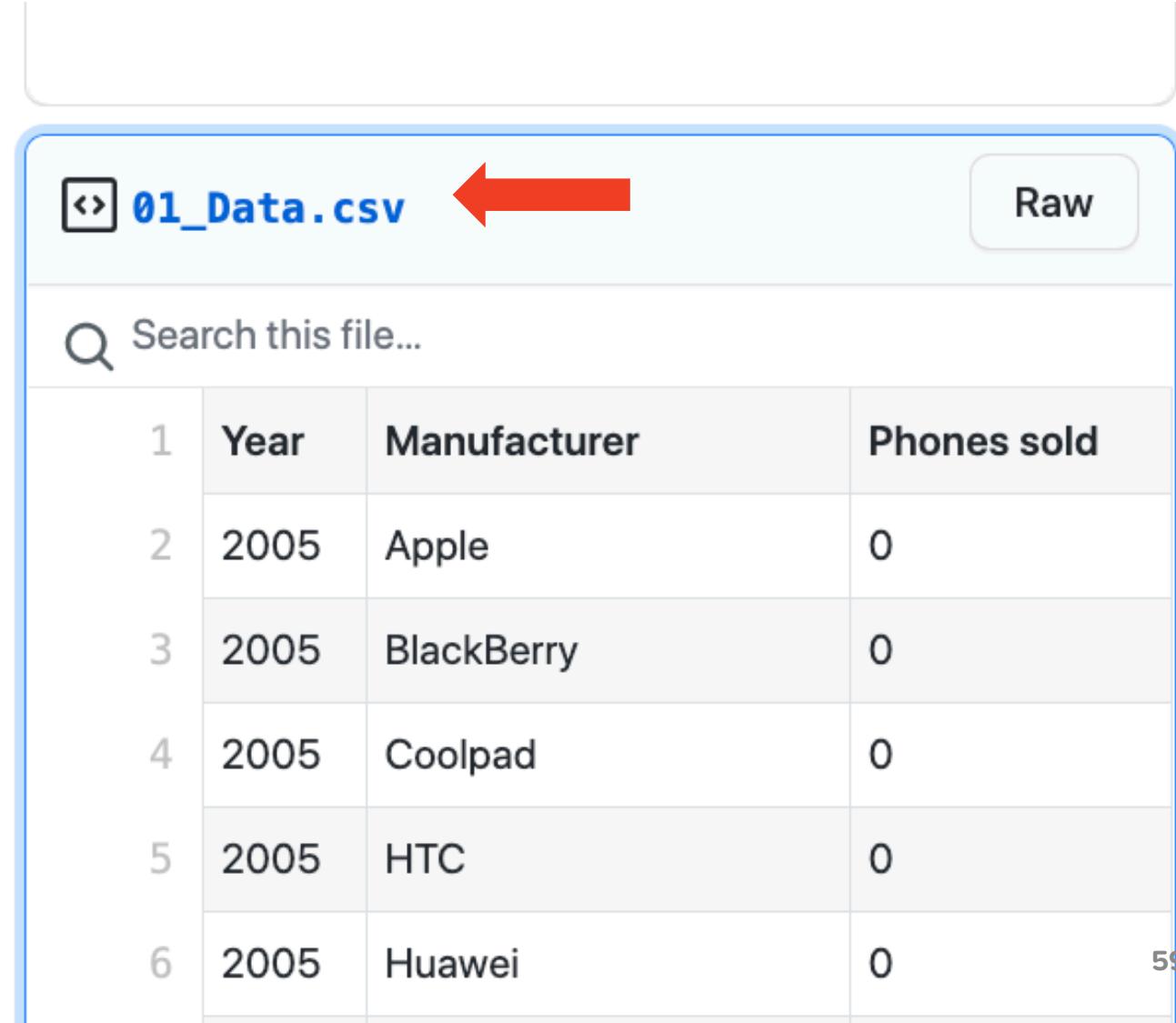
amCharts Customization for Kintone

- 1. Create a new Kintone App from a CSV file**
2. Add amCharts libraries to the App
3. Add a custom JavaScript file to the App
4. Redeploy the Kintone App



Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist: http://bit.ly/KDP_Race
2. Create a Kintone App:
Portal > [+] button
3. Select Create from CSV
4. Continue & Upload CSV...



The screenshot shows a CSV file titled "01_Data.csv" displayed in a browser window. The file contains data about phone sales in 2005, with columns for Year, Manufacturer, and Phones sold. The data is as follows:

	Year	Manufacturer	Phones sold
1	2005	Apple	0
2	2005	BlackBerry	0
3	2005	Coolpad	0
4	2005	HTC	0
5	2005	Huawei	0



Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist: http://bit.ly/KDP_Race
2. Create a Kintone App:
Portal > [+] button
3. Select Create from CSV

A screenshot of a file browser window. At the top, there's a toolbar with icons for back, forward, search, and file operations. Below the toolbar is a list of files. One file, '01_Data.csv', is circled in red with a large red arrow pointing to it from the left side of the image. The file list includes:

- MD
- 01_Data.csv
- TXT
- JS
- MD
- JS
- MD
- 06_References.md
- z_Slide.pdf

The '01_Data.csv' file is shown in its preview pane, displaying a table of data with columns: Year, Manufacturer, and Phones sold. The data includes entries for years 2005 through 2015, various manufacturers like Apple, BlackBerry, and HTC, and the number of phones sold.

01_Data.csv Preview:

Year	Manufacturer	Phones
2005	Apple	0
2005	BlackBerry	0
2005	Coolpad	0
2005	HTC	0
2005	Huawei	0
2005	Lenovo	0
2005	Lenovo Motorola	54924600
2005	LG	54924600
2005	Micromax	0
2005	Microsoft	1444924600
2005	Nokia	265614800
2005	Samsung	0
2005	Sony Ericsson	289500000
2005	Sony	0
2005	TCL Comm	0



Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist:
http://bit.ly/KDP_Race
2. Create a Kintone App:
Portal > [+] button
3. Select Create from CSV
4. Continue & Upload CSV...

The screenshot shows the Kintone Portal interface. At the top, there's a navigation bar with icons for Home, Bell, Star, Settings, and Help, followed by a search bar labeled "Search All Contents". Below the navigation bar is a banner with a green leafy background and the word "Portal". The main content area displays the "Announcement" dashboard, which includes a welcome message: "Welcome to Kintone! Kintone is your teamwork platform that gives you a visual application builder to build custom applications easily and empowers you, your teams, and your organization to effectively manage your data and workflows with better, more centralized collaboration." It also features a "How to use Kintone" section with a link to "How to use the Announcements dashboard". On the right side, there's a sidebar with sections for "Spaces" (listing "Joined Spaces" and "(None) All Spaces"), "Apps" (listing "All Apps" and "Board Game DB"), and a large red arrow pointing towards the "All Apps" button. The bottom of the screen shows the date and time: "Aug 8, 2017 11:00 AM" and "Administrator".



Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist:
http://bit.ly/KDP_Race
2. Create a Kintone App:
Portal > [+] button
3. Select Create from CSV
4. Continue & Upload CSV

Kintone Marketplace

Marketplace Search

Choose from the list of FREE business productivity apps or use our app builder to make your own app.

By Department

- Sales
- Customer Service
- Human Resources
- IT & Administration
- Research & Development
- Marketing
- Legal & Finance
- Company-wide

How to Find Apps?

Click the left category names to look for apps in the Kintone Marketplace, or enter a keyword in the search box.

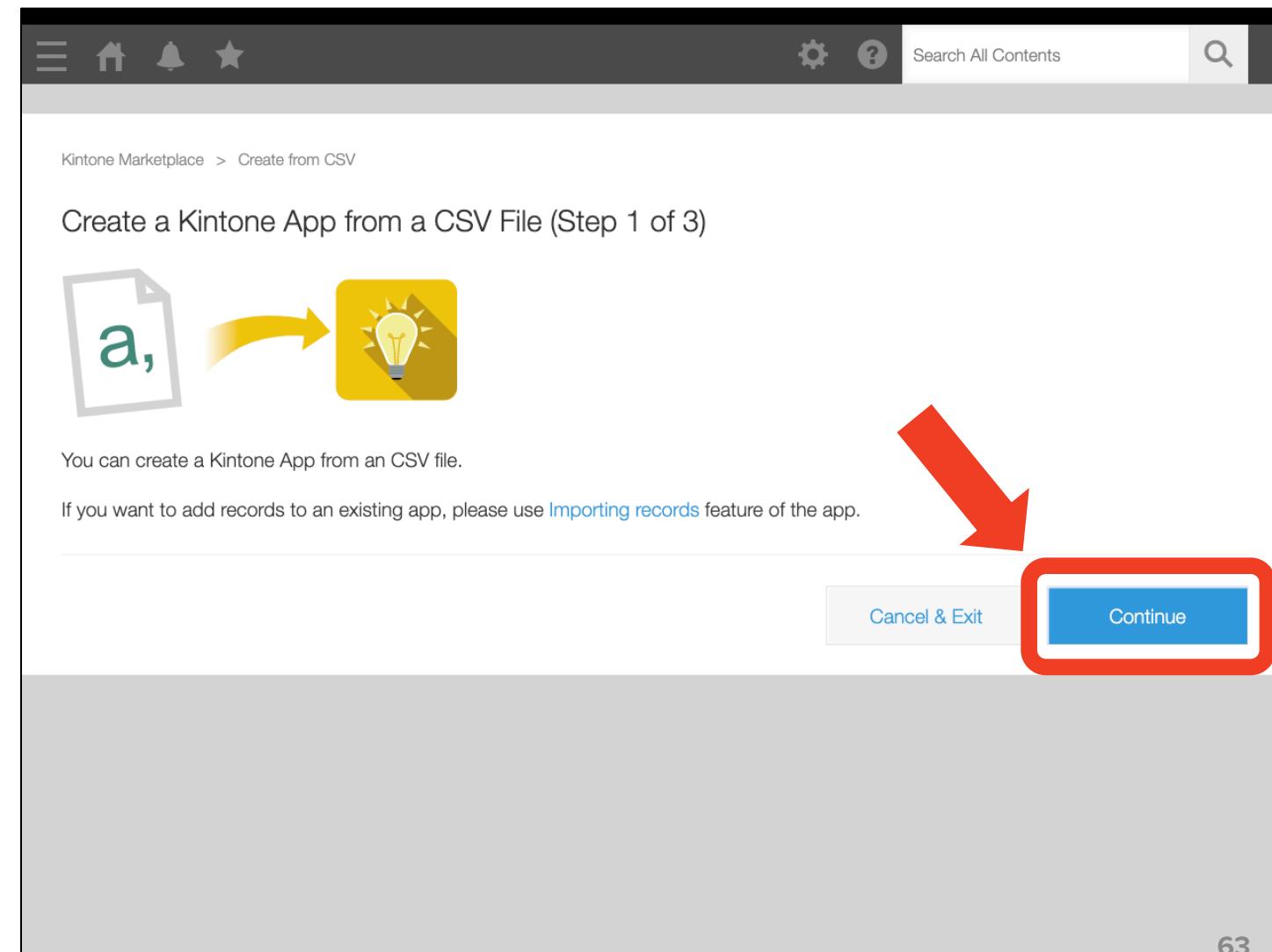
Create New App

- Create App from Scratch
- Create from Excel
- Create from CSV
- Create from Template File
- Create from Existing App



Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist
2. Create a Kintone App
3. Select Create from CSV
4. Continue & Upload CSV
 - Continue button
 - Check all button
 - Continue to the Upload button
 - Upload the CSV file
 - Scroll down to the Convert button





Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist
2. Create a Kintone App
3. Select Create from CSV

4. Continue & Upload CSV

- Continue button
- Check all button
- Continue to the Upload button
- Upload the CSV file
- Scroll down to the Convert button

Kintone Marketplace > Create from CSV

Prepare a CSV File (Step 2 of 3)

Open the CSV file and format the contents accordingly.

The first row contains the column names (at least one character, and no more than 128 characters). *

The number of columns (rows) must be 100 or less. *

The import file must contain no more than 100,000 rows. *

The file size must be 100 MB or smaller. *

[Check all](#)

Please refer to the [help](#) for details about how to prepare CSV files.

Cancel & Exit Back Continue to the Upload screen

	A	B	C	D
1	Contact Date	Department	Name	Age
2	12/01/17	Sales	Chris	35-44
3	12/01/17	Sales	Chris	35-44
4	12/01/17	Sales	Chris	35-44
5	12/01/17	Sales	Chris	35-44
6	12/01/17	Sales	Chris	35-44

Column name

Data (Maximum 100,000 rows)

Maximum 100 columns



Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist
2. Create a Kintone App
3. Select Create from CSV
4. Continue & Upload CSV

- Continue button
- Check all button
- Continue to the Upload button
- Upload the CSV file
- Scroll down to the Convert button

Kintone Marketplace > Create from CSV

Prepare a CSV File (Step 2 of 3)

Open the CSV file and format the contents accordingly.

The first row contains the column names (at least one character, and no more than 128 characters). *

The number of columns (items) must be 100 or less. *

The import file contains no more than 100,000 rows. *

The file size must be 100 MB or smaller. *

[Check all](#)

Please refer to the [help](#) for details about how to prepare CSV files.

Cancel & Exit Back **Continue to the Upload screen**

	A	B	C	D
1	Contact Date	Department	Name	Age
2	12/01/17	Sales	Chris	35-44
3	12/01/17	Sales	Chris	35-44
4	12/01/17	Sales	Chris	35-44
5	12/01/17	Sales	Chris	35-44
6	12/01/17	Sales	Chris	35-44

Column name

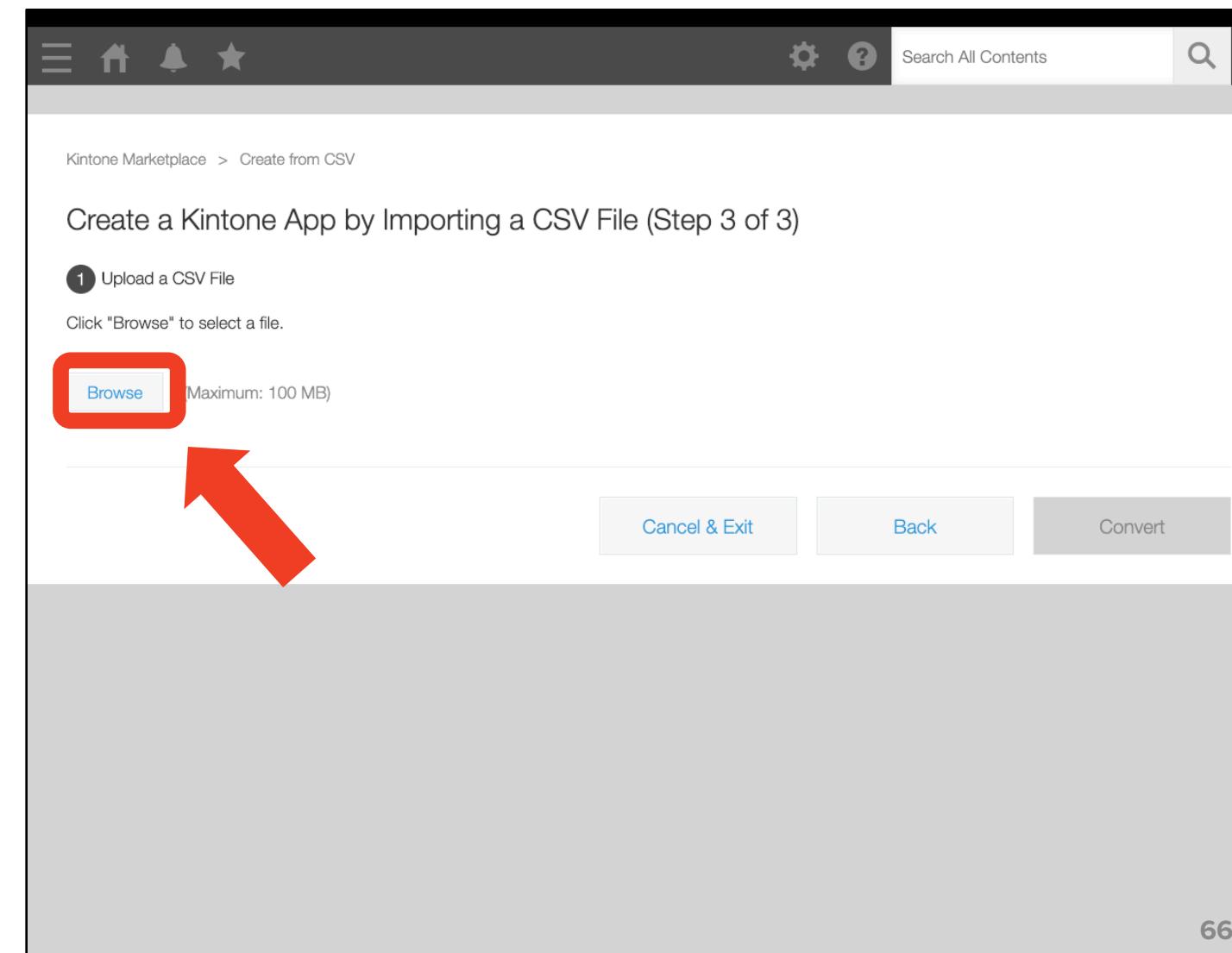
Data (Maximum 100,000 rows)

Maximum 100 columns



Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist
2. Create a Kintone App
3. Select Create from CSV
4. Continue & Upload CSV
 - Continue button
 - Check all button
 - Continue to the Upload button
 - Upload the CSV file
 - Scroll down to the Convert button





Create a new Kintone App from a CSV file

1. Get the CSV file from the Gist
2. Create a Kintone App
3. Select Create from CSV
4. Continue & Upload CSV
 - Continue button
 - Check all button
 - Continue to the Upload button
 - Upload the CSV file
 - Scroll down to the Convert button

Kintone Marketplace > Create from CSV

Create a Kintone App by Importing a CSV File (Step 3 of 3)

1 Upload a CSV File

Click "Browse" to select a file.

01_Data.csv 3 KB

Browse (Maximum: 100 MB)

2 Check the Preview

The table below shows the preview of the App with your data.
Ensure that the first row of the preview table (top-most row with white background) shows the column names. Partial sample data is shown in the second row and after.

Total Records: 180 Character Encoding: English (Latin1) Delimiter: Comma

Year	Manufacturer	Phones sold
2005	Apple	0
2005	BlackBerry	0
2005	Coolpad	0
2005	HTC	0

Scroll down



Create a new Kintone App from a CSV file

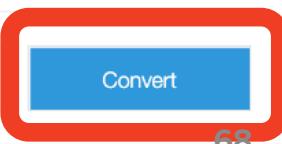
1. Get the CSV file from the Gist
2. Create a Kintone App
3. Select Create from CSV
4. Continue & Upload CSV
 - Continue button
 - Check all button
 - Continue to the Upload button
 - Upload the CSV file
 - Scroll down to the Convert button

③ Start Converting to an App

Set a field type for each column, then click "Convert" button at the bottom of the screen. However, field type settings are not mandatory, because Kintone has automatically selected recommended field types.

Field Name (Column Name)	Field Type
Year	Number
Manufacturer	Drop-down
Phones sold	Number

Cancel & Exit Back **Convert**



amCharts Customization for Kintone

1. Create a new Kintone App from a CSV file
- 2. Add amCharts libraries to the App**
3. Add a custom JavaScript file to the App
4. Redeploy the Kintone App



Add JavaScript Libraries to the App

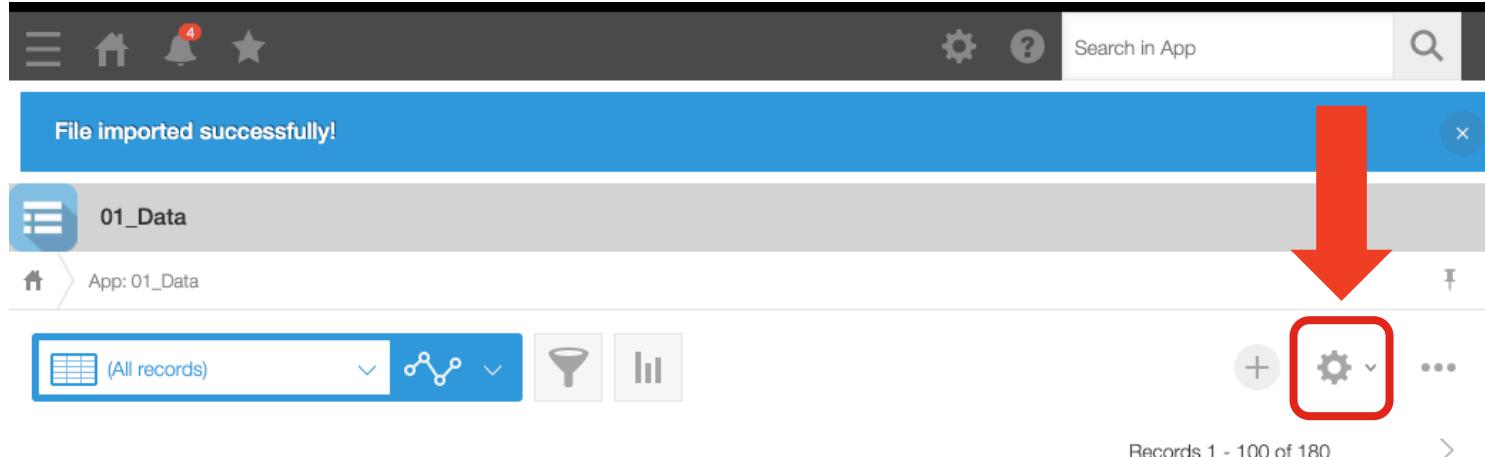
1. Find and click on the newly created app
2. Click on the Gear icon for the App's settings
3. Navigate to the App Settings tab
4. Find the JavaScript and CSS Customization option in the middle.

The screenshot shows the Kintone portal interface. At the top, there is a navigation bar with icons for Home, Bell, Star, Settings, and Help, followed by a search bar labeled "Search All Contents". Below the navigation bar, the title "Portal" is displayed over a green leaf background image. On the left side, there is an "Announcement" card with a megaphone icon, the text "Welcome to Kintone!", and a description of Kintone as a teamwork platform. A modal window titled "How to use Kintone" is open, showing a list item "How to use the Annou" and a message "App added!". To the right of the announcement card, there is a "Spaces" section with "Joined Spaces" and "All Spaces" options. Further down, there is an "Apps" section with a list of apps: "All Apps", "01_Data" (which has a red arrow pointing to it), and "Board Game DB". The bottom of the screen shows the date and time "Aug 8, 2017 11:00 AM" and the user "Administrator".



Add JavaScript Libraries to the App

1. Find and click on the newly created app
2. **Click on the Gear icon**  **for the App's settings**
3. Navigate to the App Settings tab
4. Find the JavaScript and CSS Customization option in the middle.



The screenshot shows the amCharts application interface. At the top, there is a navigation bar with icons for home, notifications (4), and search. Below the bar, a blue banner displays the message "File imported successfully!". The main area shows a data grid titled "01_Data" under "App: 01_Data". The grid has columns for Record number, Year, Manufacturer, and Phones sold. The first few rows of data are:

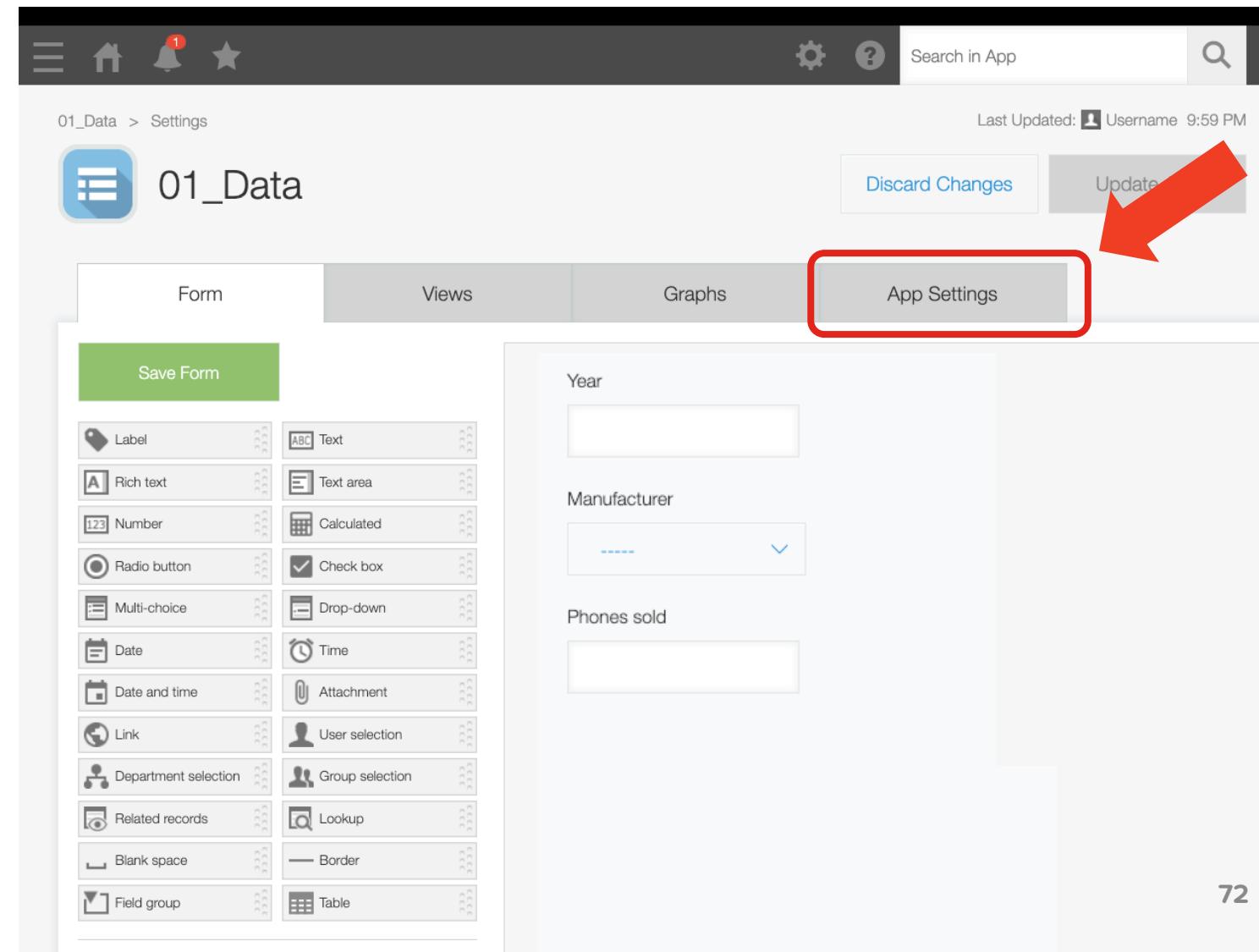
Record number	Year	Manufacturer	Phones sold
180	2014	ZTE	53910000
179	2014	Xiaomi	56529000
178	2014	TCL Communication	64026000
177	2014	Sony	37791000
176	2014	Siemens	0
175	2014	Samsung	392546000
174	2014	Nokia	0
173	2014	Motorola	0

A red arrow points to the gear icon in the top right corner of the grid header, which is highlighted with a red box. The bottom right corner of the grid shows the text "Records 1 - 100 of 180".



Add JavaScript Libraries to the App

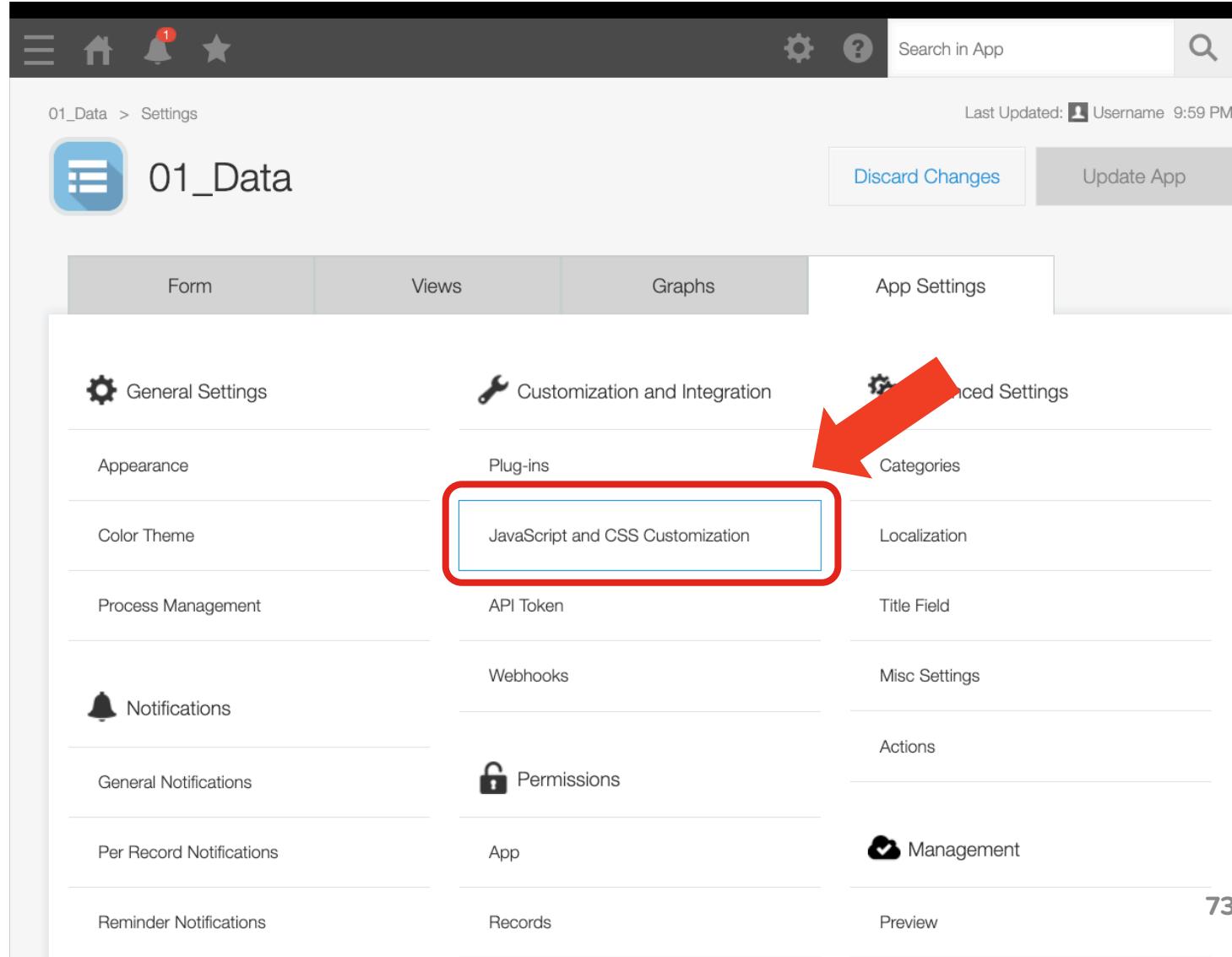
1. Find and click on the newly created app
2. Click on the Gear icon  for the App's settings
3. **Navigate to the App Settings tab**
4. Find the JavaScript and CSS Customization option in the middle.





Add JavaScript Libraries to the App

1. Find and click on the newly created app
2. Click on the Gear icon  for the App's settings
3. Navigate to the App Settings tab
- 4. Find the JavaScript and CSS Customization option in the middle.**



The screenshot shows the 'App Settings' tab selected in the navigation bar. The 'Plug-ins' section contains a sub-section titled 'JavaScript and CSS Customization', which is highlighted with a red box and a red arrow pointing to it. Other options in the 'Plug-ins' section include 'API Token', 'Webhooks', and 'Permissions'. The 'Categories' section includes 'General Settings', 'Customization and Integration', 'Localization', 'Title Field', 'Misc Settings', 'Actions', 'Management', and 'Preview'. The 'Notifications' section includes 'General Notifications', 'Per Record Notifications', and 'Reminder Notifications'.



Add JavaScript Libraries to the App

Under **Upload JavaScript for PC**, click on **Add Link** to add the following amCharts libraries in order:

<https://www.amcharts.com/lib/4/core.js>

<https://www.amcharts.com/lib/4/charts.js>

<https://www.amcharts.com/lib/4/themes/animated.js>

Don't click on the top blue
Save button yet!

The screenshot shows the amCharts app's configuration interface. At the top, there are navigation icons (three horizontal lines, home, bell with a '1', star) and a breadcrumb path: 01_Data > Settings > JavaScript and CSS Customization. Below this is a 'Save' button and a 'Cancel' button. The main area is titled 'JavaScript and CSS Customization'. It contains a descriptive text about customizing the app with JavaScript and CSS, and a link to 'JavaScript Coding Guidelines'. There are three radio buttons for 'Scope of Customization': 'Affect all users' (selected), 'Affect only app administrators', and 'Disable'. A red box highlights the 'Add Link' button under the 'Upload JavaScript for PC' section, with a red arrow pointing to it from the left. Another red box highlights the '(Maximum: 20 MB)' text next to the 'Add File' button. The 'Upload JavaScript File for Mobile Devices' section is also visible at the bottom.

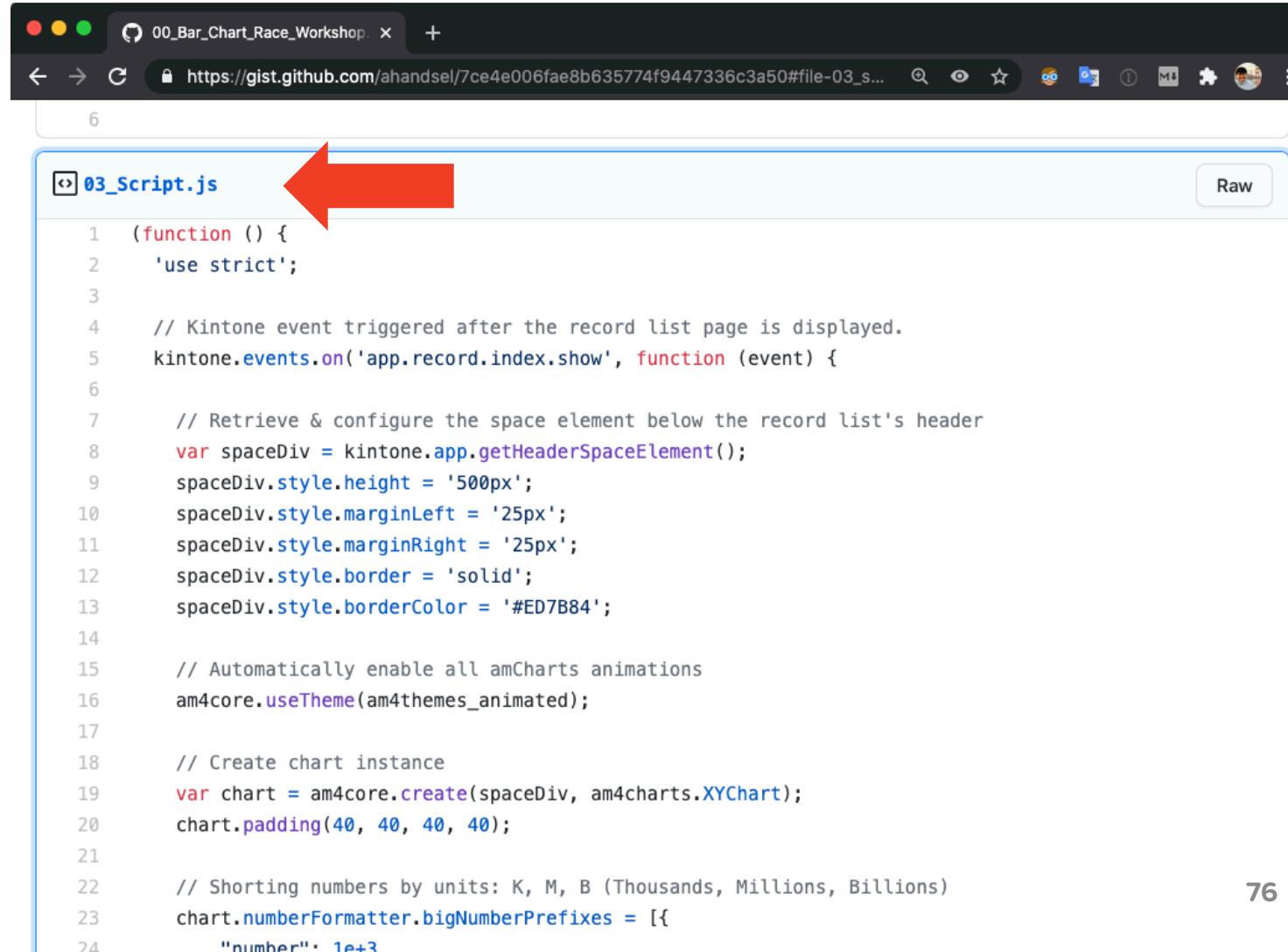
amCharts Customization for Kintone

1. Create a new Kintone App from a CSV file
2. Add amCharts libraries to the App
- 3. Add a custom JavaScript file to the App**
4. Redeploy the Kintone App



Add a Custom JavaScript File to the App

1. Get the JavaScript file:
03_Script.js
http://bit.ly/KDP_Race
2. Click on Add File button & upload the JS file
3. Click on Save button
4. Click on Update App button



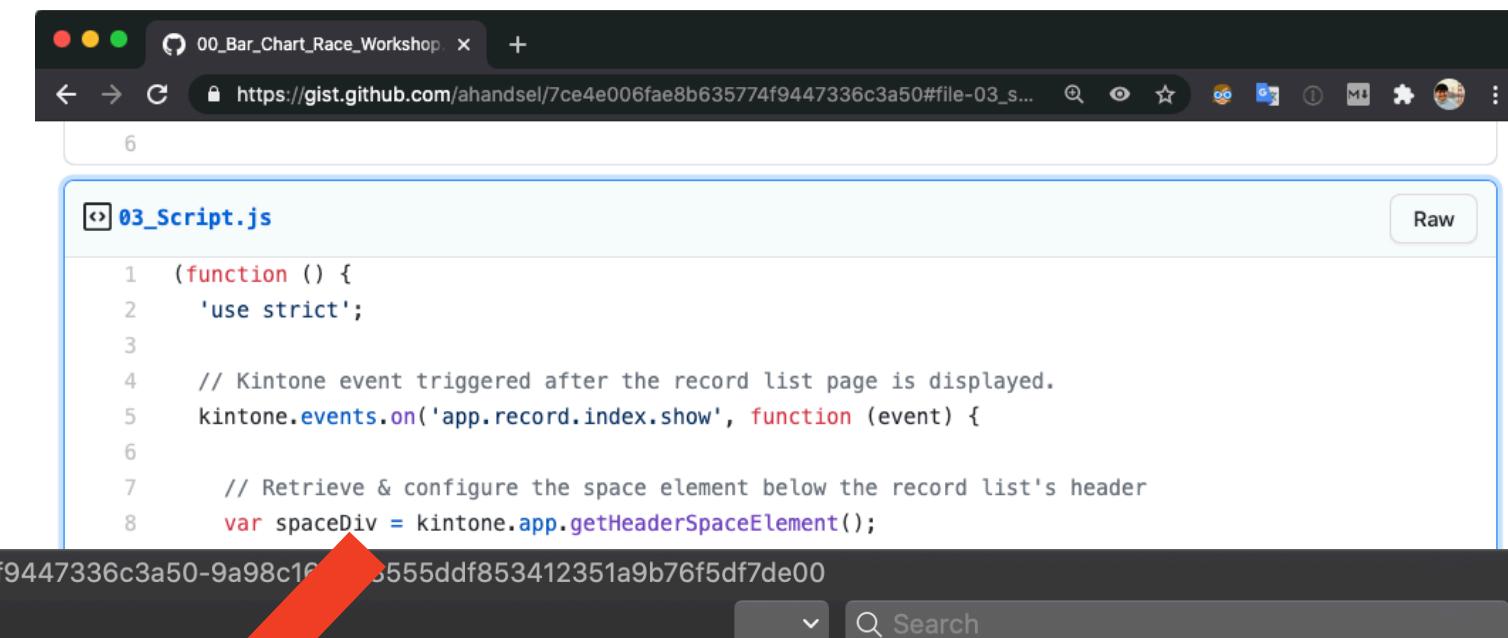
```
03_Script.js
1 (function () {
2   'use strict';
3
4   // Kintone event triggered after the record list page is displayed.
5   kintone.events.on('app.record.index.show', function (event) {
6
7     // Retrieve & configure the space element below the record list's header
8     var spaceDiv = kintone.app.getHeaderSpaceElement();
9     spaceDiv.style.height = '500px';
10    spaceDiv.style.marginLeft = '25px';
11    spaceDiv.style.marginRight = '25px';
12    spaceDiv.style.border = 'solid';
13    spaceDiv.style.borderColor = '#ED7B84';
14
15    // Automatically enable all amCharts animations
16    am4core.useTheme(am4themes_animated);
17
18    // Create chart instance
19    var chart = am4core.create(spaceDiv, am4charts.XYChart);
20    chart.padding(40, 40, 40, 40);
21
22    // Shorting numbers by units: K, M, B (Thousands, Millions, Billions)
23    chart.numberFormatter.bigNumberPrefixes = [
24      "number": 1e+3
25    ]
26
27    // Set chart's width and height
28    chart.width = 500;
29    chart.height = 500;
30
31    // Set chart's data
32    chart.data = [
33      {
34        "category": "Category A",
35        "value": 100
36      },
37      {
38        "category": "Category B",
39        "value": 200
40      },
41      {
42        "category": "Category C",
43        "value": 300
44      }
45    ];
46
47    // Set chart's categories
48    chart.categoryAxis.dataFields.category = "category";
49
50    // Set chart's values
51    chart.valueAxis.dataFields.value = "value";
52
53    // Set chart's labels
54    chart.valueAxis.labels.formatter = function (value) {
55      return value + "K";
56    };
57
58    // Set chart's grid
59    chart.gridX = 100;
60    chart.gridY = 100;
61
62    // Set chart's series
63    chart.addAreaSeries();
64  });
});
```



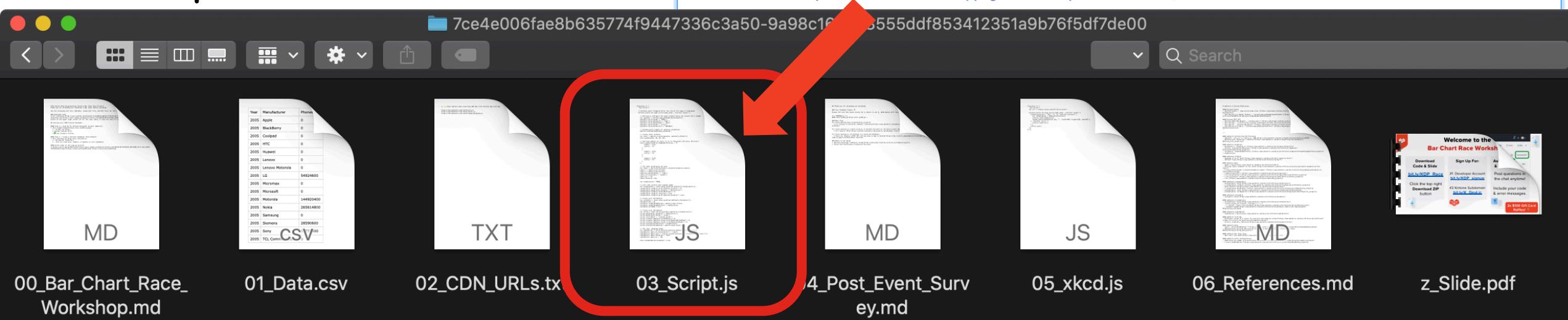
Add a Custom JavaScript File to the App

1. Get the JavaScript file:
03_Script.js
http://bit.ly/KDP_Race

2. Click on Add File button
& upload the JS file



```
1 (function () {
2   'use strict';
3
4   // Kintone event triggered after the record list page is displayed.
5   kintone.events.on('app.record.index.show', function (event) {
6
7     // Retrieve & configure the space element below the record list's header
8     var spaceDiv = kintone.app.getHeaderSpaceElement();
```



The screenshot shows a Kintone application interface with a file list. The files are:

- 00_Ba... .md
- 01_Data.csv
- 02_CDN_URLs.tx
- 03_Script.js (highlighted with a red rounded rectangle and a red arrow pointing to it)
- 04_Post_Event_Sur... .md
- 05_xkcd.js
- 06_References.md
- z_Slide.pdf



Add a Custom JavaScript File to the App

1. Get the JavaScript file:
03_Script.js
2. Click on Add File button
& upload the JS file
3. Click on Save button
4. Click on Update App
button

The screenshot shows the 'JavaScript and CSS Customization' page of the amCharts app. At the top, there are navigation icons (three horizontal bars, home, notification with 1, star), settings gear, and a search bar. Below the header, the breadcrumb navigation shows '01_Data > Settings > JavaScript and CSS Customization'. There are 'Save' and 'Cancel' buttons. The main content area has a title 'JavaScript and CSS Customization' and a descriptive paragraph about customizing the app with JavaScript and CSS, linking to 'JavaScript Coding Guidelines'. It includes a 'Scope of Customization' section with three radio buttons: 'Affect all users' (selected), 'Affect only app administrators', and 'Disable'. Below this is a 'Upload JavaScript for PC' section with four dropdown fields containing URLs for core.js, charts.js, themes/animated.js, and a placeholder 'Add Link'. A red box highlights the 'Add File' button, with a red arrow pointing to it from a callout bubble containing the text 'Add 03_Script.js file here'. At the bottom, there's a section for 'Upload JavaScript File for Mobile Devices'.



Add a Custom JavaScript File to the App

1. Get the JavaScript file:
03_Script.js
2. Click on Add File button &
upload the JS file
3. Click on Save button
4. Click on Update App
button

The screenshot shows the 'JavaScript and CSS Customization' page in Kintone. At the top, there are navigation icons (three horizontal bars, home, bell with 1 notification, star), a search bar, and settings. Below the header, the breadcrumb path is '01_Data > Settings > JavaScript and CSS Customization'. A red box highlights the 'Save' button in the top center. A red arrow points from the 'Save' button down to the 'Upload JavaScript for PC' section. The 'Upload JavaScript for PC' section contains four items: 'https://www.amcharts.com/lib/4/core.js' (highlighted with a yellow background), 'https://www.amcharts.com/lib/4/charts.js', 'https://cdn.amcharts.com/lib/4/themes/animated.js', and '03_Script.js'. At the bottom, there are 'Add Link' and 'Add File' buttons with the note '(Maximum: 20 MB)'. On the right side, there are sections for 'Customization samples' (link to 'Kintone Customization Gallery') and 'Community support' (link to 'Kintone Developers').

amCharts Customization for Kintone

1. Create a new Kintone App from a CSV file
2. Add amCharts libraries to the App
3. Add a custom JavaScript file to the App
- 4. Redeploy the Kintone App**



Redeploy the Kintone App

1. Get the JavaScript file:
03_Script.js
2. Click on Add File button
& upload the JS file
3. Click on Save button
4. Click on Update App
button

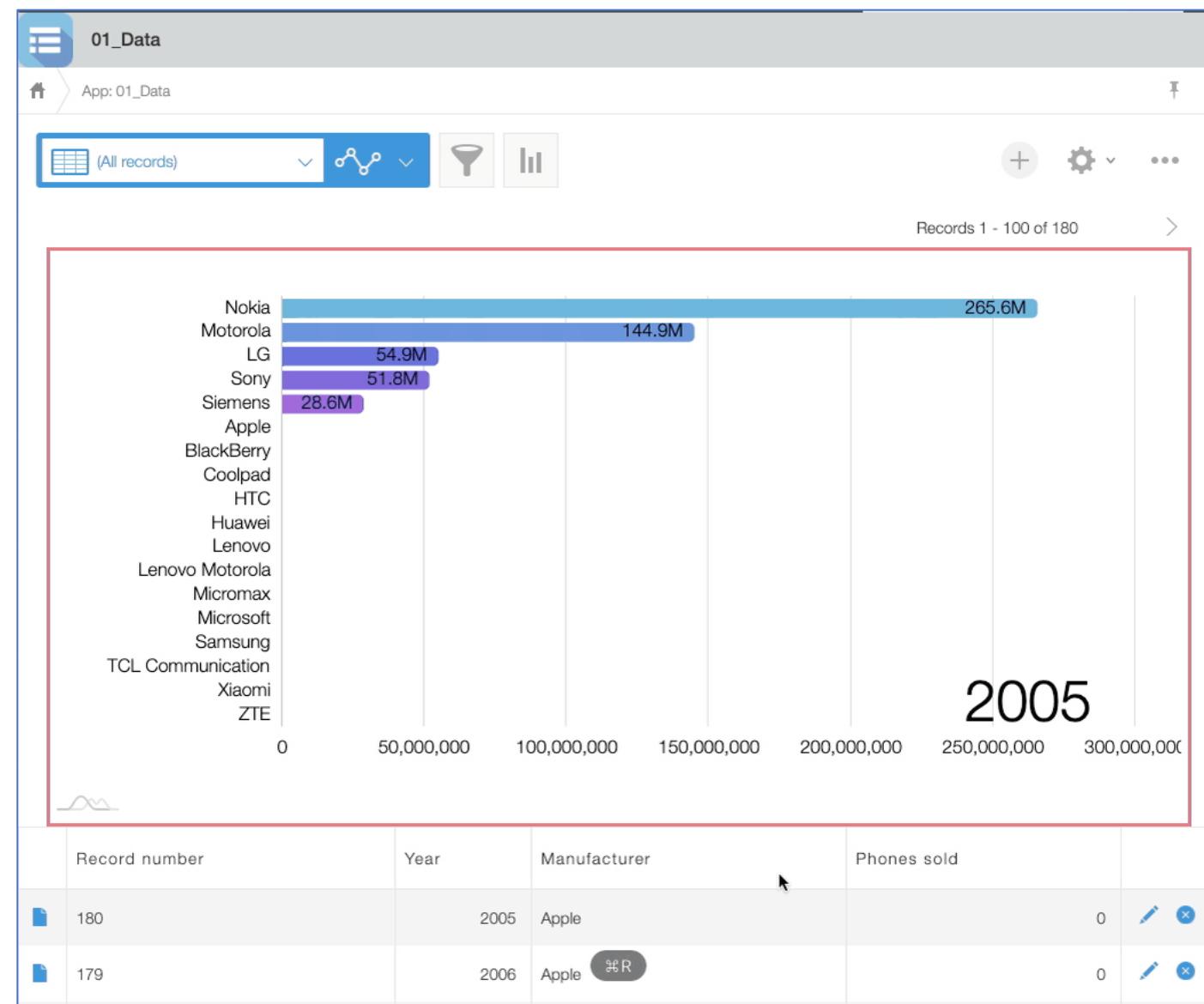
This will apply the changes made (adding libraries & JS file)

The screenshot shows the 'Settings' screen for the '01_Data' app. At the top right, there are buttons for 'Discard Changes' and 'Update App'. A red box highlights the 'Update App' button, and a red arrow points to it from below. The main area contains tabs for 'Form', 'Views', 'Graphs', and 'App Settings'. Under 'App Settings', there are sections for General Settings, Customization and Integration, Advanced Settings, Notifications, Permissions, and Management. Each section lists various configuration options.

General Settings	Customization and Integration	Advanced Settings
Appearance	Plug-ins	Categories
Color Theme	JavaScript and CSS Customization	Localization
Process Management	API Token	Title Field
	Webhooks	Misc Settings
	Permissions	Actions
	App	Management
		Preview



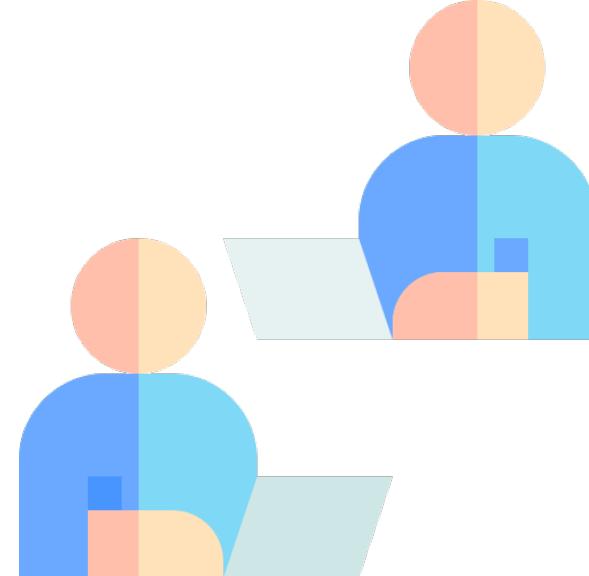
Results



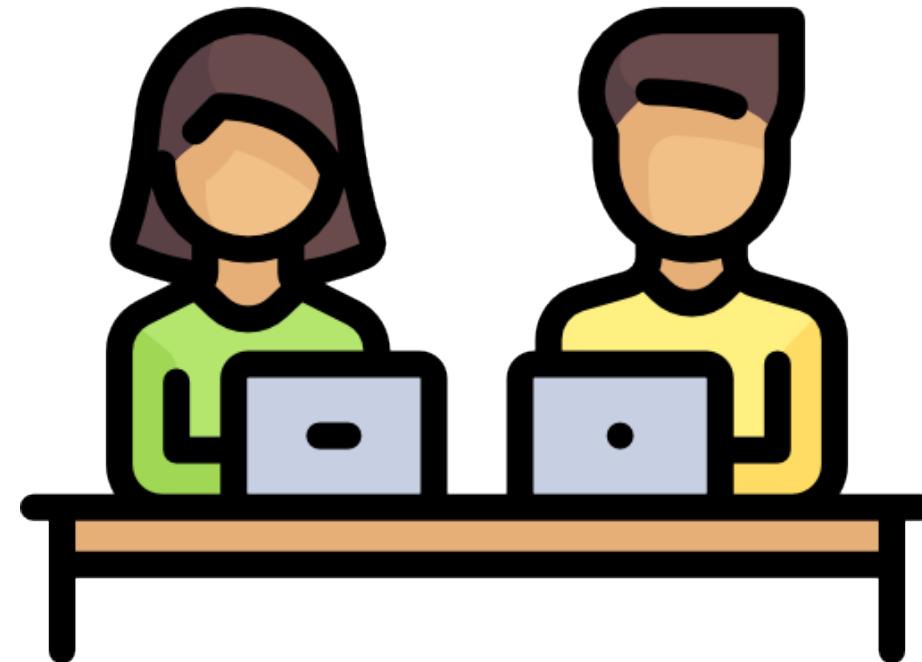
Time To Get Started!

1. Create a Kintone App from a CSV file
 - [Create from CSV](#) option
 - Import the CSV file
2. Add JavaScript libraries to the App
 - amCharts CDN links
3. Add a custom JavaScript file to the App
4. Redeploy the Kintone App
 - Click on [Update App](#)
5. Raise Hand on Zoom when you are done

Want the Slides? Hit the
Download ZIP button at
bit.ly/KDP_Race



Let's look through the code!



amCharts Libraries

Save Cancel

JavaScript and CSS Customization

You can customize this app with JavaScript and CSS. Please make sure you read through the [JavaScript Coding Guidelines](#) prior to the development.

Scope of Customization

Affect all users Affect only app administrators Disable

Upload JavaScript for PC

- <https://www.amcharts.com/lib/4/core.js>
- <https://www.amcharts.com/lib/4/charts.js>
- <https://cdn.amcharts.com/lib/4/themes/animated.js>

03_Script.js 12 ↴

Add Link Add File (Maximum: 20 MB)

Core library needed for all amCharts

amCharts library for creating charts

Library that contains the amCharts "Animated" theme which is automatically provides smooth transitions

Set Events and Retrieve HTML Elements

Kintone native event
that triggers when the
Record List page loads

Retrieve & configure the
space element below
the record list's header

Record number	Country	Continent	Country Code	Total Earned Prize Money (\$)	Number of Players
100	Albania	Europe	al	38621.6	22
99	Algeria	Africa	dz	73040.04	40
98	Argen...	South America	ar	3202331.29	579
97	Armenia	Asia	am	224960.72	26
96	Australia	Oceania	au	16706580.61	2109
95	Bahrain	Middle East	bw	100000.0	100
94	Barbados	Caribbean	bb	100000.0	100
93	Bangladesh	South Asia	bd	100000.0	100
92	Bhutan	South Asia	bt	100000.0	100
91	Bolivia	South America	bo	100000.0	100

```
(function () {
  'use strict';

  kintone.events.on('app.record.index.show', function (event) {
    var spaceDiv = kintone.app.getHeaderSpaceElement();
    spaceDiv.style.height = '500px';
    spaceDiv.style.marginLeft = '25px';
    spaceDiv.style.marginRight = '25px';
    spaceDiv.style.border = 'solid';
    spaceDiv.style.borderColor = '#ED7B84';
  });
})()
```

Create the Chart Instance

am4themes_animated is a theme that automatically animates many amCharts action. It is a system-wide setting.

```
am4core.useTheme(am4themes_animated);
```

```
var chart = am4core.create(spaceDiv, am4charts.XYChart);
```

```
chart.padding(40, 40, 40, 40);
```

Create a Chart instance. The first parameter is the target HTML element to create the chart in. The second parameter references an amCharts chart type class.

Set a padding around the chart

Input to Output

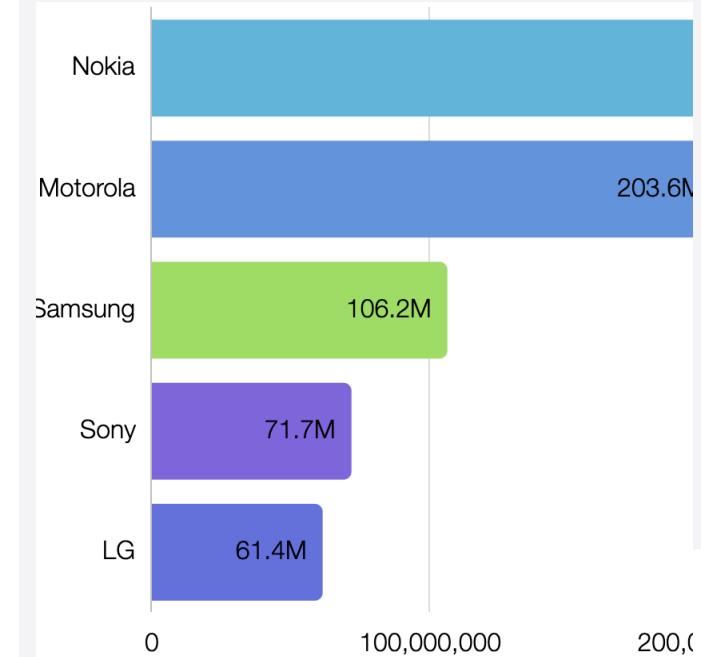
Kintone Records

	Record	Year	Manufacturer	Phone
180	180	2014	ZTE	5391
179	179	2014	Xiaomi	5652
178	178	2014	TCL Communication	6402
177	177	2014	Sony	3779
176	176	2014	Siemens	
175	175	2014	Samsung	39254

JSON Object

```
[  
...  
{  
  "Manufacturer": "LG",  
  "value": "191426000"  
},  
{  
  "Manufacturer": "HTC",  
  "value": "76096000"  
}  
...  
]
```

Bar Chart Race



Formatting Large Numbers

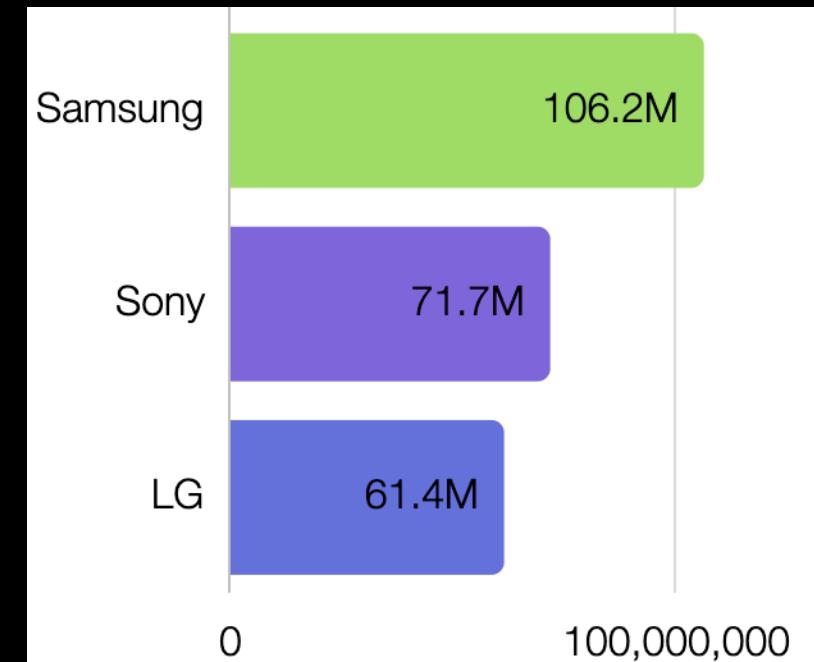
Shorten the numbers
with numerical units:

K for thousands

M for millions

B for billions

```
chart.numberFormatter.bigNumberPrefixes = [ {  
    'number': 1e+3,  
    'suffix': 'K'  
},  
{  
    'number': 1e+6,  
    'suffix': 'M'  
},  
{  
    'number': 1e+9,  
    'suffix': 'B'  
}  
];
```



Create the Label & Y-Axis {Manufacturer}

Creates the label in the bottom right corner displaying the year

Speed of the race (ms)

Create a category-based axis for the chart. This displays the Manufacturer on the left side of the chart

```
var label = chart.plotContainer.createChild(am4core.Label);
label.x = am4core.percent(97);
label.y = am4core.percent(95);
label.horizontalCenter = 'right';
label.verticalCenter = 'middle';
label.dx = -15;
label.fontSize = 50;
```

```
var stepDuration = 4000; // 4 seconds
```

```
var categoryAxis = chart.yAxes.push(new
am4charts.CategoryAxis());
categoryAxis.renderer.grid.template.location = 0;
categoryAxis.dataFields.category = 'Manufacturer';
categoryAxis.renderer.minGridDistance = 1;
categoryAxis.renderer.inversed = true;
categoryAxis.renderer.grid.template.disabled = true;
```

X-Axis {Sold Units} & Creating the Series

Create the numerical X-axis for the chart.

This displays the units at the bottom of the chart to indicate the phone units sold by each firm.

This snippet creates the 'bars' in the bar chart race.

```
var valueAxis = chart.xAxes.push(new am4charts.ValueAxis());
valueAxis.min = 0;
valueAxis.rangeChangeEasing = am4core.ease.linear;
valueAxis.rangeChangeDuration = stepDuration;
valueAxis.extraMax = 0.1;

var series = chart.series.push(new am4charts.ColumnSeries());
series.dataFields.categoryY = 'Manufacturer';
series.dataFields.valueX = 'value';
series.columns.template.column.cornerRadiusBottomRight = 5;
series.columns.template.column.cornerRadiusTopRight = 5;
series.interpolationEasing = am4core.ease.linear;
series.interpolationDuration = stepDuration;
series.columns.template.strokeOpacity = 0;
series.tooltipText = '{valueX.value}';
```

Creating the Label Bullet

Display the phone sold values on the right edge of the bars

Zoom out button is created when auto zoom function is enabled. This disables it.

```
var labelBullet = series.bullets.push(new  
am4charts.LabelBullet());  
  
labelBullet.label.horizontalCenter = 'right';  
  
labelBullet.label.text =  
'{values.valueX.workingValue.formatNumber(\'#.0as\')}';  
  
labelBullet.label.textAlign = 'end';  
  
labelBullet.label.dx = -10;  
  
  
chart.zoomOutButton.disabled = true;
```

Columns' Color & Starting Label

Color is configured to columns with chart.colors color set

The dataset's first year is 2005 so we set that as our label as default

The play() & stop() functions are used to manipulate the animation's flow

```
series.columns.template.adapter.add('fill', function (fill, target){ return chart.colors.getIndex(target.dataItem.index);});
```

```
var year = 2005;  
label.text = year.toString();
```

```
var interval;  
  
function play() {  
    interval = setInterval(function () { nextYear(); }, stepDuration);  
}  
  
function stop() {  
    if (interval) { clearInterval(interval); }  
}
```

nextYear() function - 1/2

nextYear() function is used to increment the year being displayed and update the data given to amCharts

2014 is the last year of our dataset

Filter to only display manufacturers with phones sold that year

```
function nextYear() {  
    year++;  
  
    if (year > 2014) {  
        stop();  
        return;  
    }  
  
    var newData = allData[year];  
    var itemsWithNonZero = 0;  
    for (var i = 0; i < chart.data.length; i++) {  
        chart.data[i].value = newData[i].value;  
        if (chart.data[i].value > 0) {  
            itemsWithNonZero++;  
        }  
    }  
    ...  
}
```

nextYear() function - 2/2

Animation settings (in milliseconds) time values. They govern the animation for bars shorten/lengthen & for zooming in/out.

Redraw the bars with the new values but without re-parsing the dataset

Shrink bar width as more manufacturers enter the field

Resort the series based on new data in descending order

```
...  
series.interpolationDuration = stepDuration;  
valueAxis.rangeChangeDuration = stepDuration;  
  
chart.invalidateRawData();  
label.text = year.toString();  
  
categoryAxis.zoom({  
    start: 0,  
    end: itemsWithNonZero / categoryAxis.dataItems.length  
});  
  
categoryAxis.sortBySeries = series;
```

Kintone REST API Request - 1/3

The body of the Kintone API request needs the App ID and Query Condition

Make a GET request for the Kintone Records

Run the play() function when Invoked when the Sprite is initialized using the series.events.on() method

```
var body = {  
    'app': kintone.app.getId(),  
    'query': kintone.app.getQueryCondition() + 'limit 500'  
};  
  
var allData = {};  
  
kintone.api(kintone.api.url('/k/v1/records', true), 'GET', body,  
    function (resp) { ... },  
    function (error) {  
        console.log(error);  
    } );  
  
series.events.on('initied', function () { play(); });  
});()  
});()
```

Kintone REST API Request - 2/3

When the GET REST API is successfully called, allData object is created that contains the Manufacturer & the units of phones they have sold broken down by the year.

allData is passed onto amCharts & the zoom is set to match the dataset size

```
function (resp) { // Successful API Call
  var records = resp.records;
  records.forEach(function (record) {
    if (allData.hasOwnProperty(record.Number.value)) {
      allData[record.Number.value].push({
        Manufacturer: record.Drop_down.value,
        value: record.Number_0.value
      });
      return;
    }
    allData[record.Number.value] = [
      {
        Manufacturer: record.Drop_down.value,
        value: record.Number_0.value
      }];
  });
  chart.data = JSON.parse(JSON.stringify(allData[year]));
  categoryAxis.zoom({
    start: 0,
    end: 1 / chart.data.length
  });
}
```

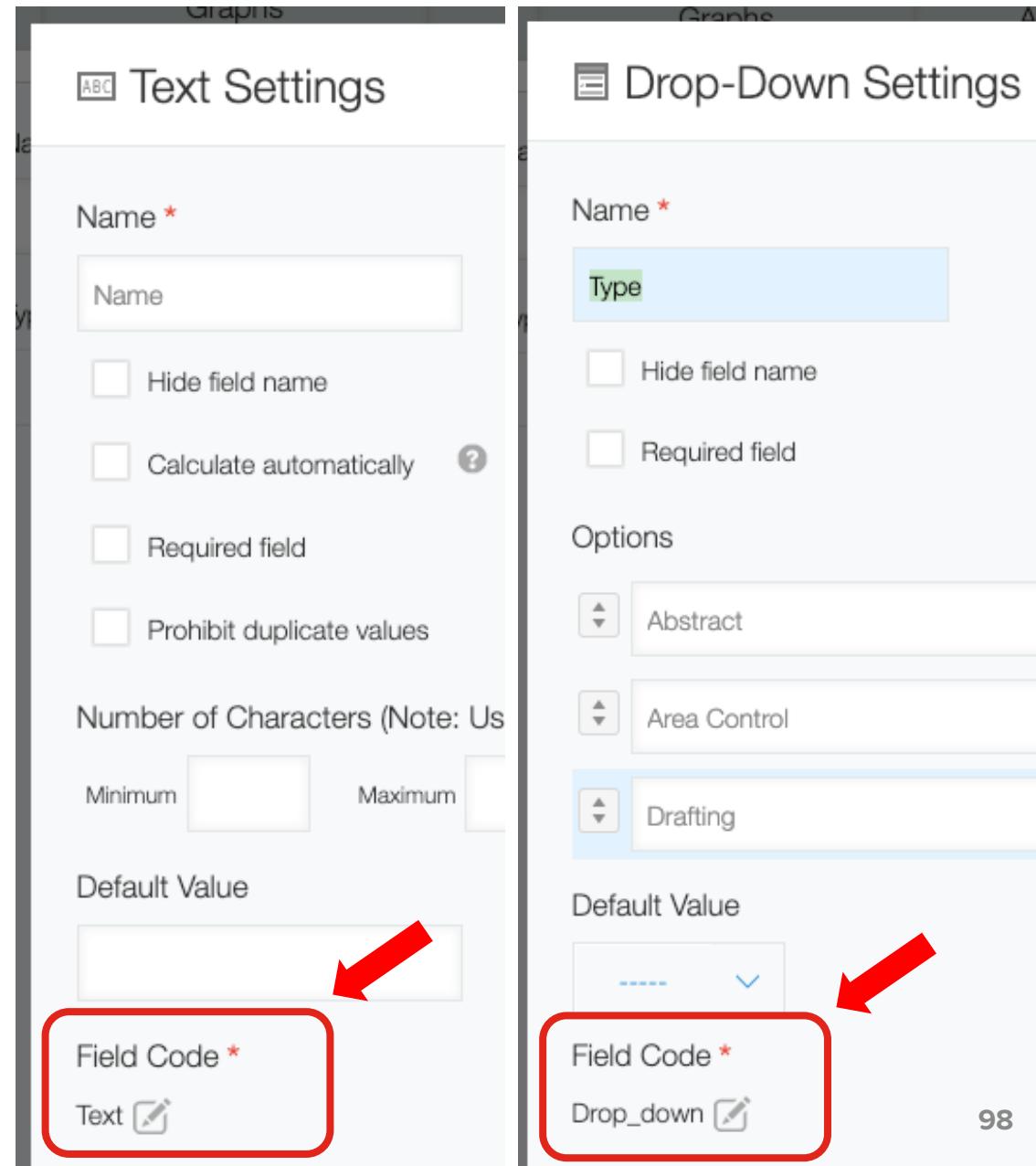
What are these?

Do You Remember?

The field code is the identifier for each field, represented as a string

- Name's field code = Text
- Type's field code = Drop_down

These are the default field code values for their respective fields



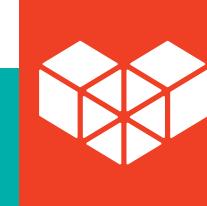
Kintone REST API Request - 3/3

allData for amCharts

```
{  
    "2005": [{"  
        "Manufacturer": "ZTE",  
        "value": "0"  
    }, ...  
],  
    "2006": [{"  
        "Manufacturer": "ZTE",  
        "value": "0"  
    }, ...  
], ...  
    "2014": [{"  
        "Manufacturer": "ZTE",  
        "value": "53910000"  
    }, ...  
    {  
        "Manufacturer": "Apple",  
        "value": "191426000"  
    }  
]  
}
```

GET Record Response - resp

```
{  
    "records": [  
        {  
            "Updated_datetime": { ...  
            },  
            "Created_datetime": { ...  
            },  
            "Number_0": { ... // Phones Units  
            },  
            "Number": { ... // Year  
            },  
            "Record_number": { ... // e.g. 180  
            },  
            "Created_by": { ...  
            },  
            "$revision": { ...  
            },  
            "Drop_down": { ... // Manufacturer  
            },  
            "Updated_by": { ...  
            },  
            "$id": { ... // e.g. 180  
            }  
        },  
        {  
            "totalCount": null  
        }  
    ]  
}
```



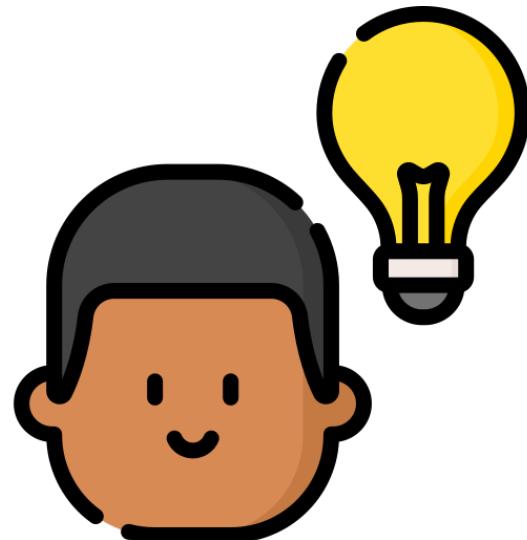
Any
Questions?

developer.kintone.io

Today's Agenda

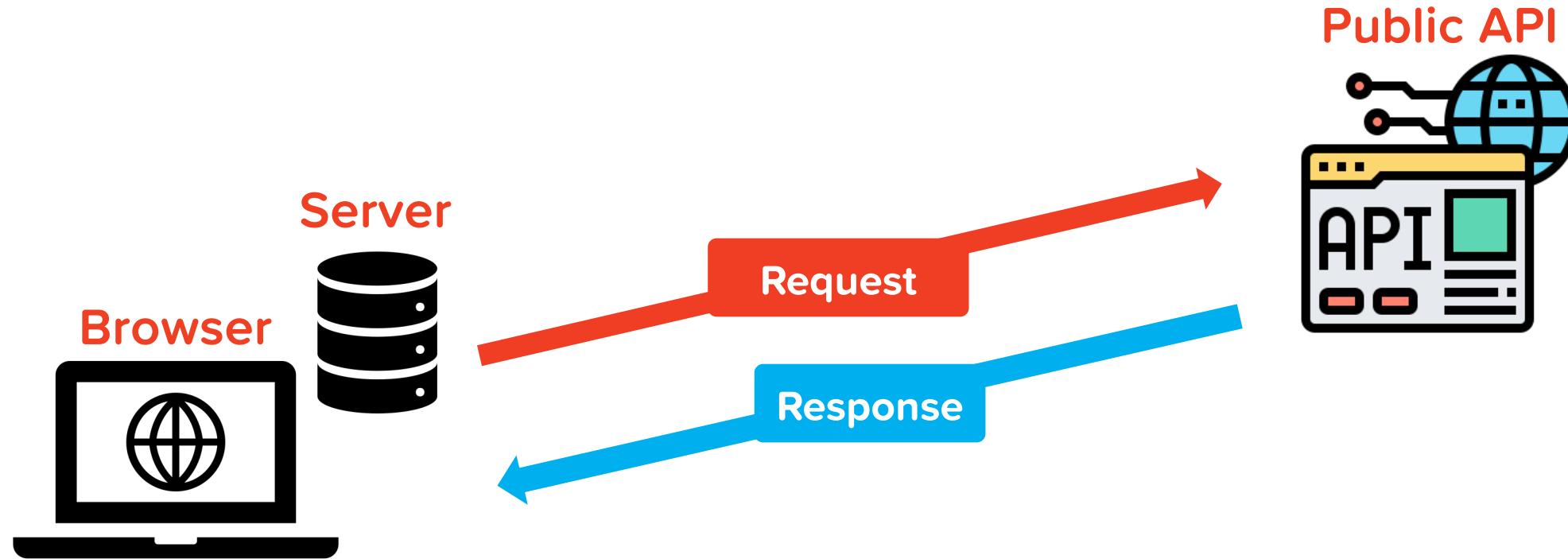
- 1 Get the Big Picture
- 2 Create a Kintone App
- 3 Display amCharts on Kintone
- 4 Call REST APIs from Kintone

Since We Are Talking About Data



Wouldn't it be great, if we could get data from public APIs?

REST API Calls From the Server



REST API calls are usually called through a server

REST API Calls From the Browser

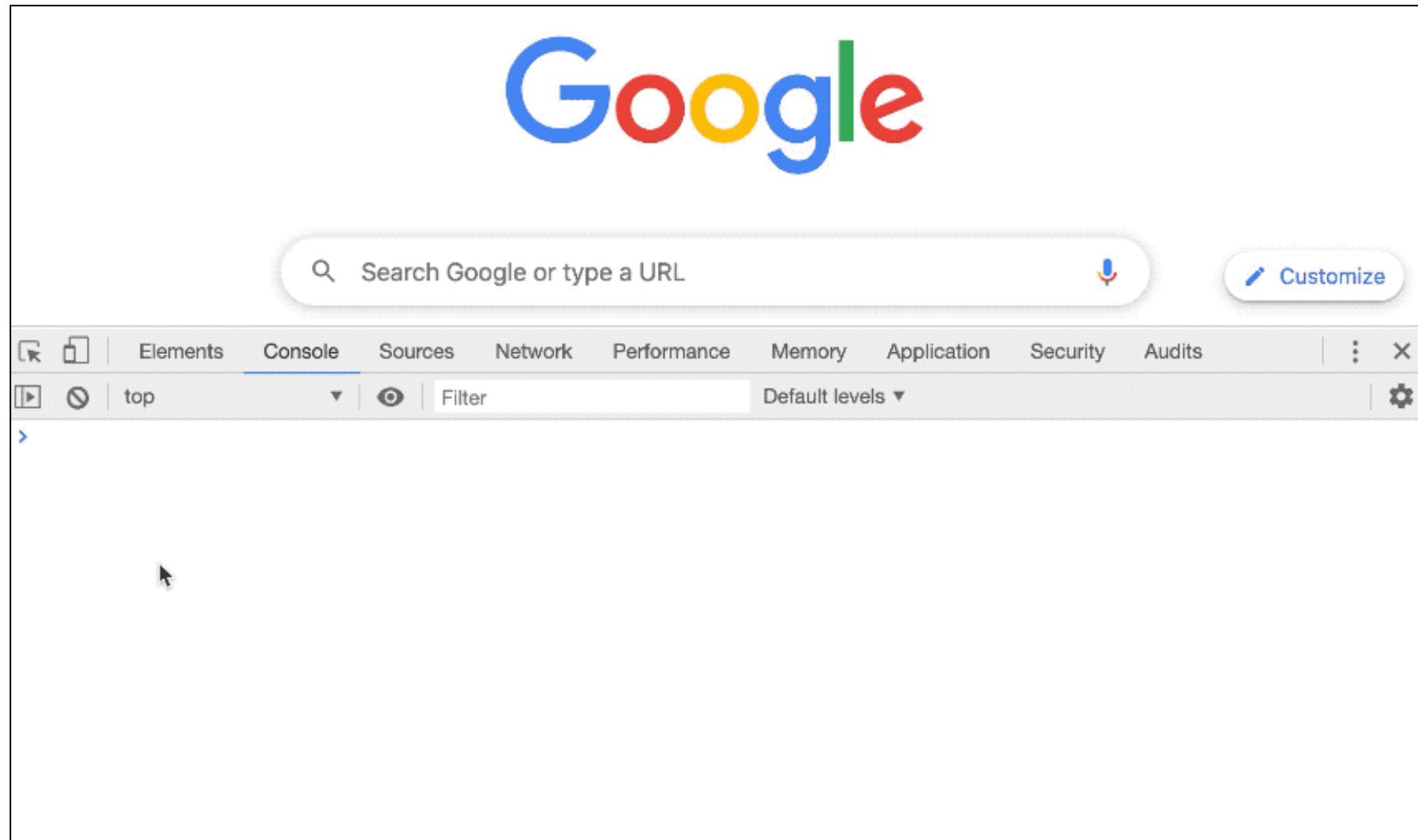


Calling REST APIs directly from the browser can often result in CORS errors

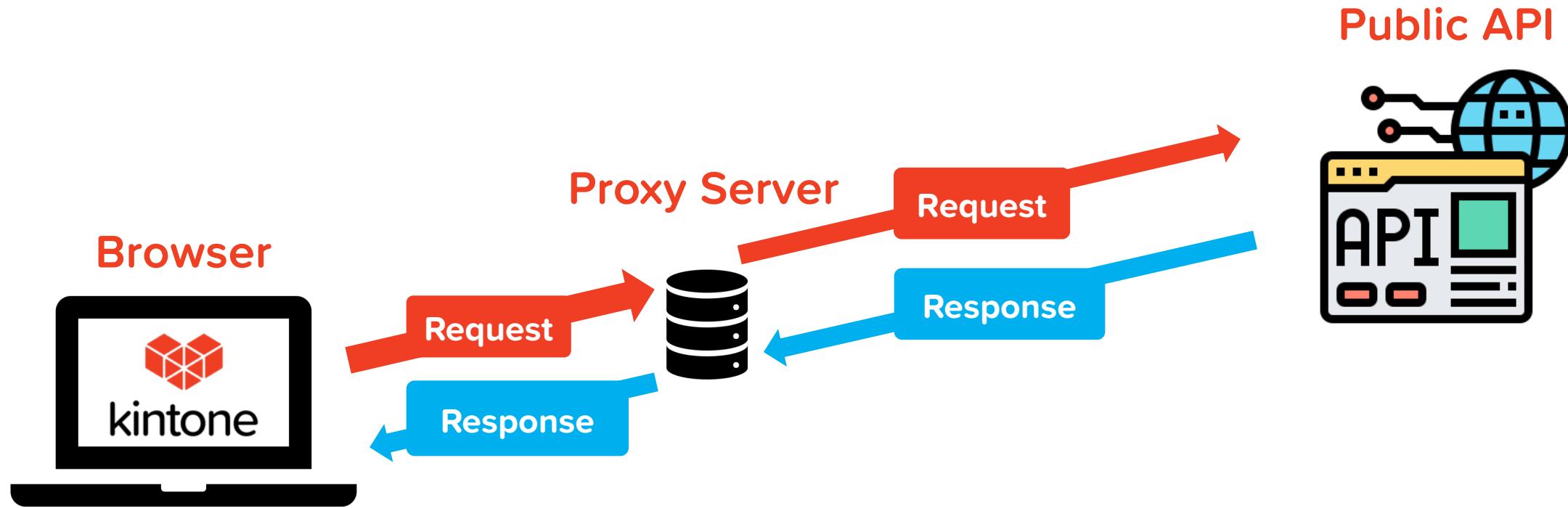
CORS Error Example



Yes, xkcd has an API for retrieving comic images.



REST API Calls from Kintone



The JavaScript codes on Kintone can call REST APIs by passing the call through a proxy server

The REST API Initiator

Kintone has a method called **kintone.proxy()** that calls REST APIs from the client-side JavaScript without running into any CORS errors.

the API endpoint

the HTTP method

```
kintone.proxy(url, method, headers, data, callback, errback)
```

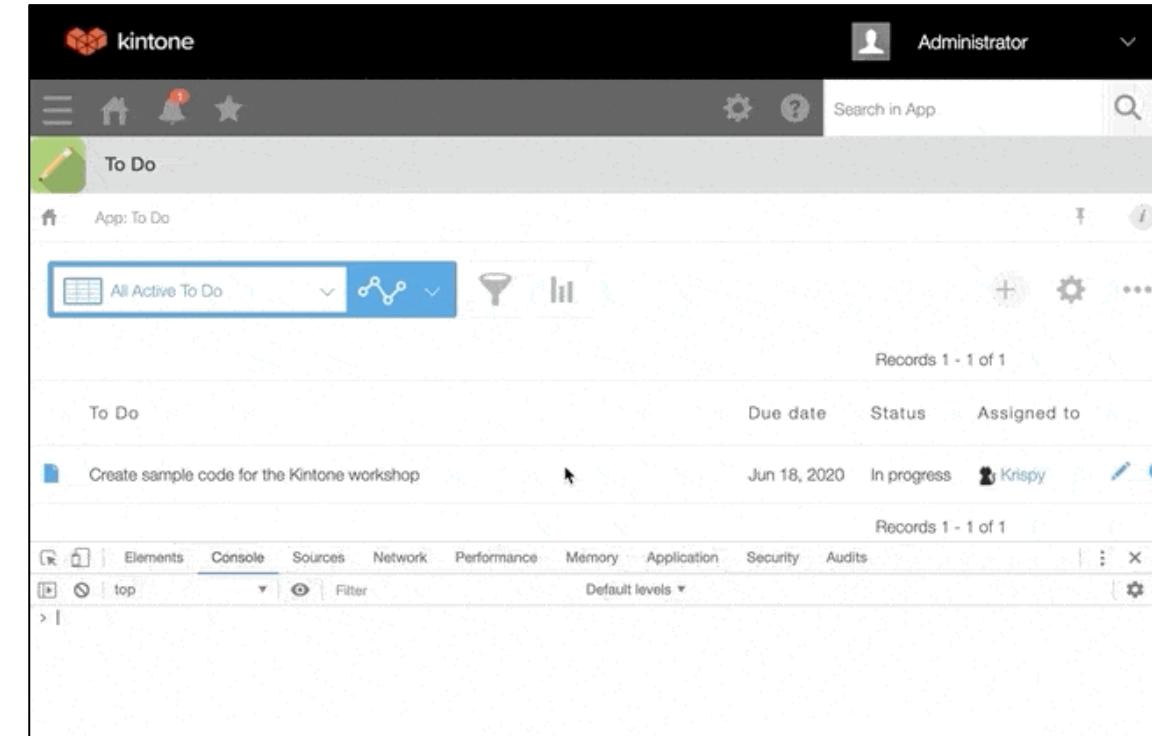
the request header

the request body

Callback functions – ignoring this will return a Promise object

Example Call Result

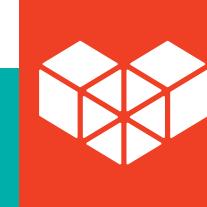
```
1 (function () {
2   'use strict';
3   var url = "https://xkcd.com/327/info.0.json";
4
5   kintone.events.on('app.record.index.show', function (event) {
6     kintone.proxy(url, 'GET', {}, {}, function (success) {
7       var jsonResponse = JSON.parse(success);
8       console.log(jsonResponse);
9       window.open(jsonResponse.img,"","width=800,height=200");
10    }, function(error) {
11      console.log(error);
12    });
13    return event;
14  });
15 })();
```



kintone.proxy(url, method, headers, data, callback, errback)

Benefits of the REST API Initiator

- Similar to how the fetch method works, **kintone.proxy returns a promise** object
- **kintone.proxy** can be used on all browsers that Kintone is compatible with, **including IE**
- **REST API calls can be made from the browser without being blocked by CORS errors**



Any
Questions?

developer.kintone.io

Wrap Up

1 Get the Big Picture

- Kintone is a **no-code/low code** cloud platform
- You can use your **free Kintone Developer License** for your projects

2 Create a Kintone App

- **Databases** can be created with **no coding**
- **Customize** any Kintone App with **JavaScript**

3 Display amCharts on Kintone

- Kintone Apps can **run JavaScript** files
- JavaScript files can **interact with data** stored in Kintone Apps

4 Call REST APIs from Kintone

- Front-end JavaScript can make **REST API calls**
- REST API calls from Kintone can **bypass CORS errors**

Benefits of Using Kintone for Your Projects

-  There is no need to set up or maintain a server
-  Databases can be created easily with GUI
-  Front-end JavaScript can utilize the Database data
-  REST APIs can be called from Front-end JavaScript and avoid CORS errors

Projects to Work On Next!

For Developers who want to try out more visualization projects on Kintone

Fancy Data-Viz

- Chart Types
- Column & Bar
- Line & Area
- Pie & Donut
- XY & Bubble
- Maps
- Candlestick & OHLC
- Stock
- TimeLine
- Pictorial
- Gauges
- Radar & Polar

Fancy Data-Viz

COVID-19 Spread Data

Coronavirus animated dashboard

IN 2019 I CYCLED 3300 km, SWIMMED 1000 m, AND SPENT 100 HOURS IN THE outdoors.

Chart design inspired by Brian Gracis

Radar Chart visualizing yearly activities

COVID-19 U.S. Spread Data

United States (Total), Apr 03, 2020

Northwest 200K | Deaths 10,000

100% of the world's population lives in 10% of the world's land area.

Chart design inspired by Brian Gracis

There are many more charts you can use on the amCharts website:

<https://www.amcharts.com/demos/>

Try linking to different libraries & reuse the code we used in the workshop!

Projects to Work On Next!

For Developers who want to create projects on Kintone,
and want to retrieve and store data from public APIs

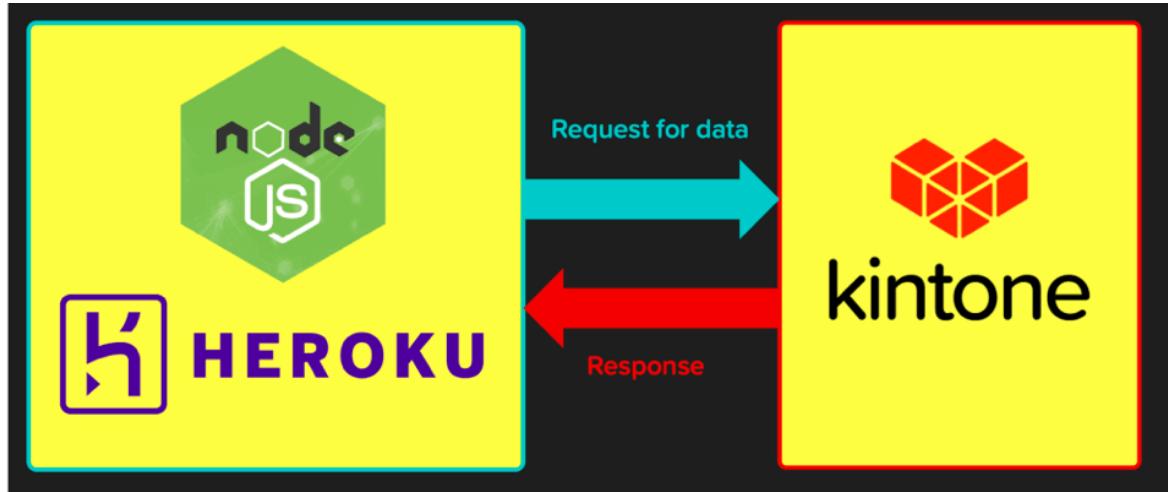
Health					
API	Description	Auth	HTTPS	CORS	
BetterDoctor	Detailed information about doctors in your area	apiKey	Yes	Unknown	
Covid-19	Covid 19 spread, infection and recovery	No	Yes	Yes	
Diabetes	Logging and retrieving diabetes information	No	No	Unknown	
Flutrack	Influenza-like symptoms with geotracking	No	No	Unknown	
Healthcare.gov	Educational content about the US Health Insurance Marketplace	No	Yes	Unknown	
Lexigram	NLP that extracts mentions of clinical concepts from text, gives access to clinical ontology	apiKey	Yes	Unknown	
Makeup	Makeup Information	No	No	Unknown	
Medicare	Access to the data from the CMS - medicare.gov	No	Yes	Unknown	
NPPES	National Plan & Provider Enumeration System, info on healthcare providers registered in US	No	Yes	Unknown	
Nutritionix	Worlds largest verified nutrition database	apiKey	Yes	Unknown	
openFDA	Public FDA data about drugs, devices and foods	No	Yes	Unknown	
USDA Nutrients	National Nutrient Database for Standard Reference	apiKey	Yes	Unknown	

You can find a list of APIs
to call from the link below:

<https://github.com/public-apis/public-apis#index>

Projects to Work On Next!

For Developers who want to use Kintone as a back-end database, and retrieve data via Kintone's REST API



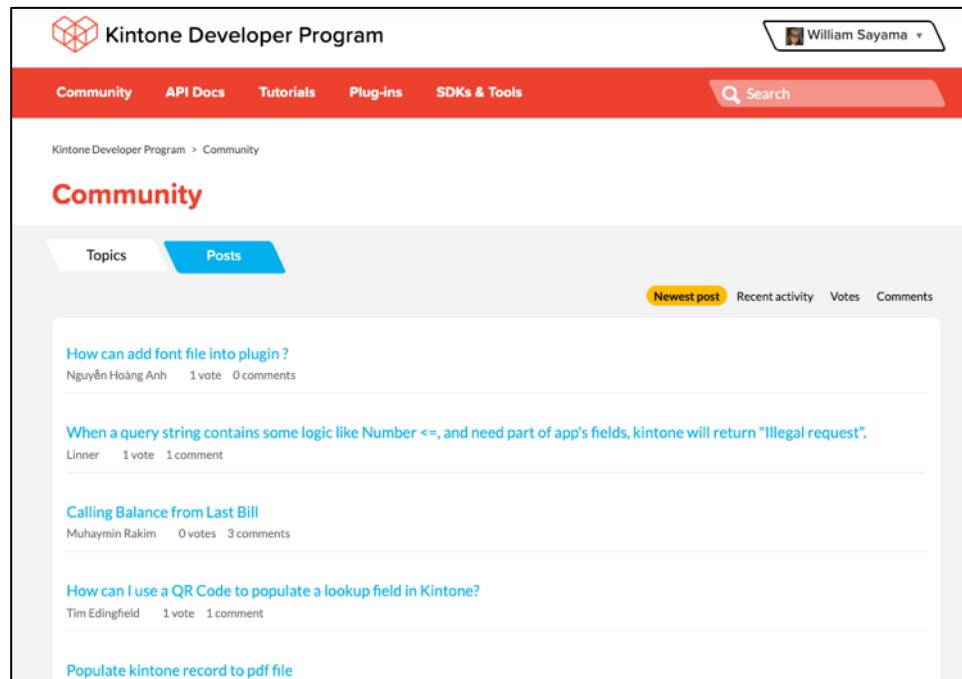
You can follow a tutorial where Node.js is used to call Kintone's REST APIs from the link below:

https://dev.to/will_yama/deploy-a-rest-api-calling-node-js-app-to-heroku-2mia

Finally

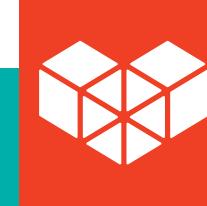
Where Can I Get Help?

If you're stuck, share your code on the Kintone Developer Community forum or on Stack Overflow!



The screenshot shows the Kintone Developer Program Community forum. The top navigation bar includes links for Community, API Docs, Tutorials, Plug-ins, and SDKs & Tools, along with a search bar and a user profile for William Sayama. The main content area is titled "Community" and shows a list of posts. The first post is titled "How can add font file into plugin?", made by Nguyễn Hoàng Anh, with 1 vote and 0 comments. The second post is titled "When a query string contains some logic like Number <=, and need part of app's fields, kintone will return "Illegal request".", made by Liner, with 1 vote and 1 comment. The third post is titled "Calling Balance from Last Bill", made by Muhammin Rakim, with 0 votes and 3 comments. The fourth post is titled "How can I use a QR Code to populate a lookup field in Kintone?", made by Tim Edingfield, with 1 vote and 1 comment. The fifth post is titled "Populate kintone record to pdf file.", which is currently visible at the bottom of the list.





Any
Questions?

developer.kintone.io

Thank You to Our Community Partners!



HackBuddy by JavaScriptLA



Flatiron School

Join Our Future Workshops!



We are working on new content for
January and **February** workshops!



Join our Meetup to not miss out!

bit.ly/KDP_Events



Workshop Recording on YouTube

This workshop's recording will be posted on
our YouTube Channel!

Our past workshops are posted as well:

Charts: Bubble Cloud, Word Cloud

Introductions: REST API, JS Promise



bit.ly/KDP_Video

Thank You for Your Participation!

**Fill out our quick survey for a
chance to win a
\$25 Amazon gift card!**



bit.ly/KDP_Q

