

プログラミング概論

第8回 2024年11月13日

App Inventorによる
Androidアプリ開発の実践
(2) 楽器アプリの基本

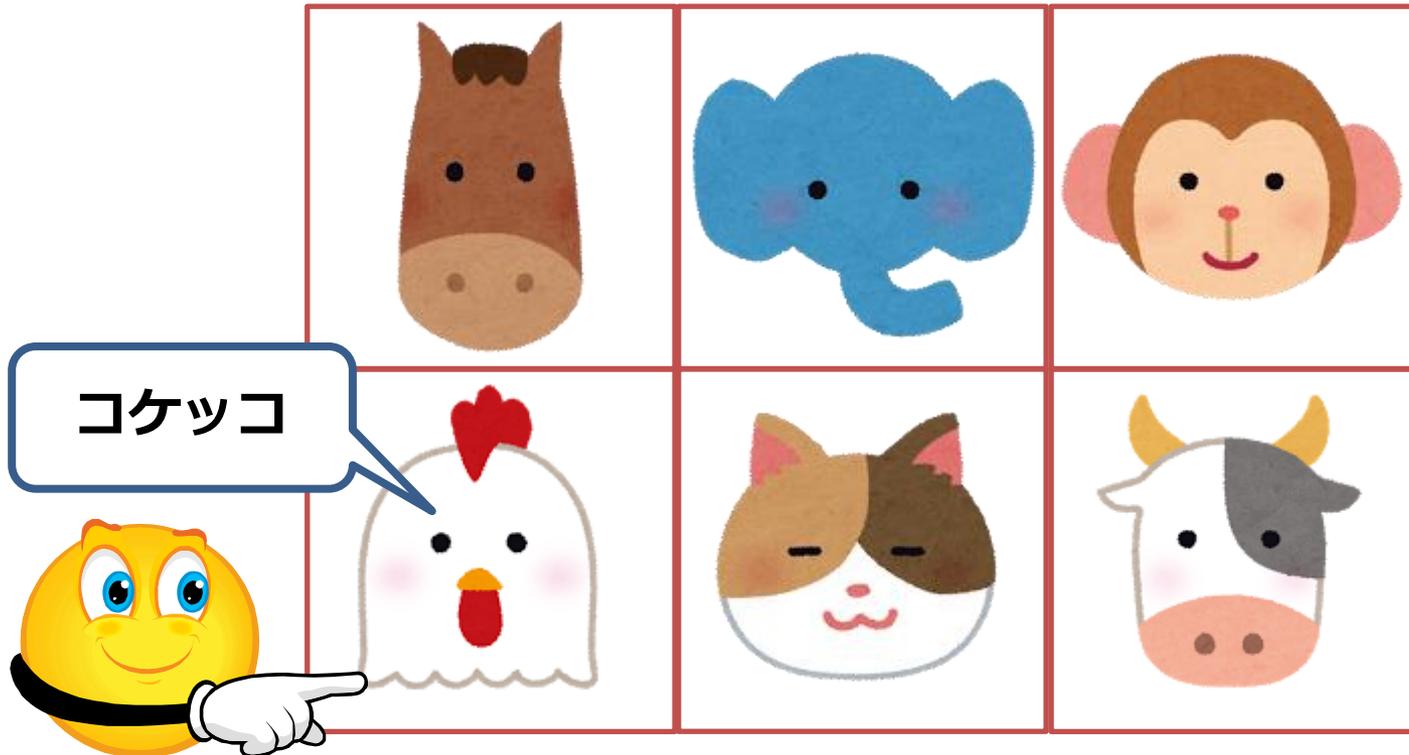
今回の授業内容

- 楽器アプリの仕組み
- 素材を用意する
- 楽器アプリを作る

楽器アプリの仕組み

楽器アプリの仕組み

- タップした場所によって異なる音が鳴るアプリを作成する



楽器アプリの仕組み

(0,0)

(100,0)

(200,0)

(0,100)



```
if y < 100
```

```
  if x < 100
```

```
  then ヒヒーン
```

```
  else if x < 200
```

```
  then パオーン
```

```
  else ウッキー
```

```
else
```

```
  if x < 100
```

```
  then コケッコ
```

```
  else if x < 200
```

```
  then ニヤーン
```

```
  else モーウ
```

素材を用意する

画像・音をダウンロードする

ブラウザのアドレスバーには「保護されていない通信 daisy.fwex.tohoku-gakuin.ac.jp/progintro.html」が表示されています。

ページのタイトルは「ピアノ」です。

画面には4つのピアノ鍵盤の図が並んでいます。上段の右側の鍵盤には「ドレミファソラシ」という文字が鍵盤の下に記されています。下段の左側の鍵盤にも「ドレミファソラシ」という文字が記されています。

右側のメニュー「最近のダウンロード履歴」には以下の項目があります：

- piano.zip (安全でないダウンロードがブロックされました)
- piano1.png (3.3 KB • 完了)

すべてのダウンロード履歴

① 4つの鍵盤から1つ選び、右クリックして保存

② こちらは普通にクリックすればよい (とりあえずピアノだけ)

③ クリック

画像・音をダウンロードする

保護されていない通信 daisy.fwex.tohoku-gakuin.ac.jp/progintro.html

• ピアノ



最新のダウンロード履歴

- piano.zip
226 KB • 完了
- piano1.png
3.3 KB • 4 分前

すべてのダウンロード履歴

クリック

• [ドレミファソラシ \(ピアノ\)](#)

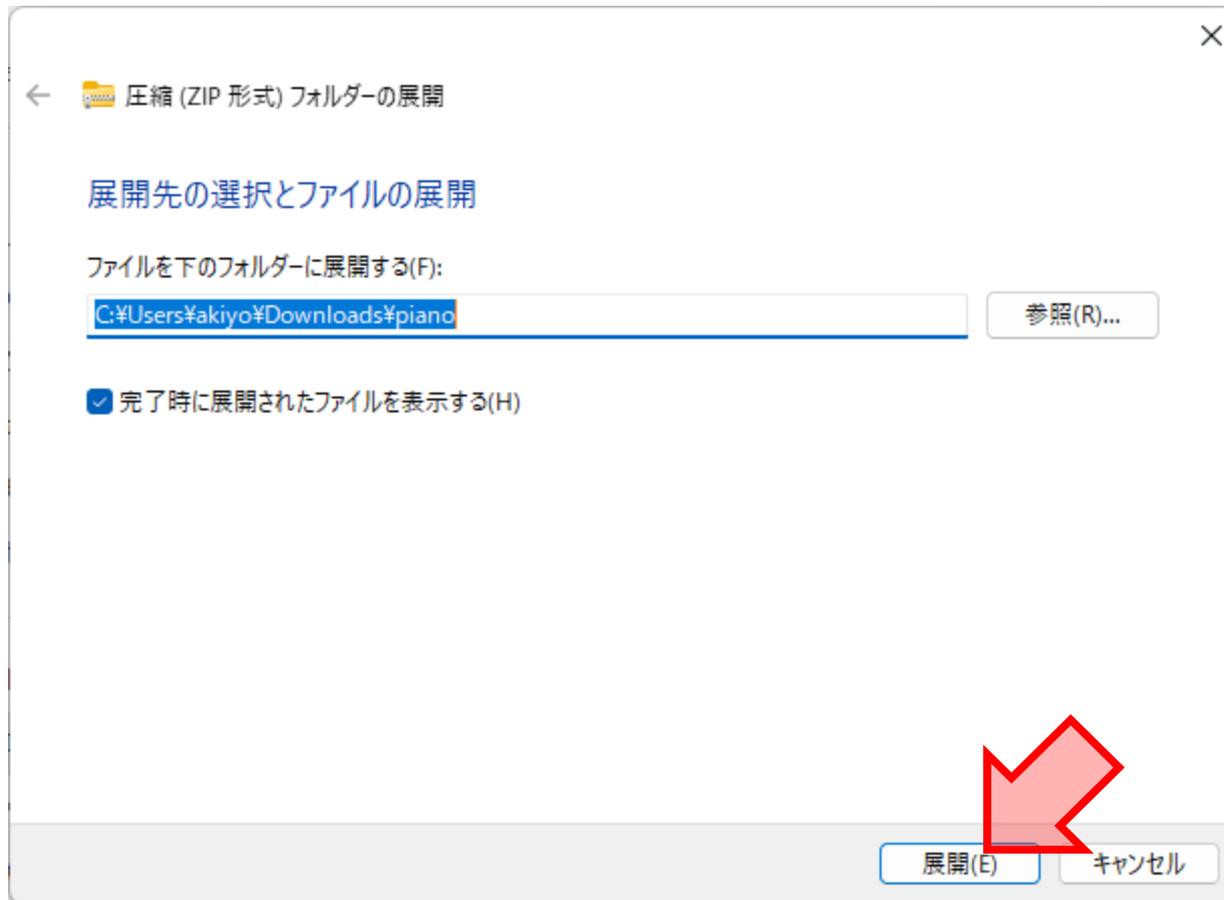
圧縮されているので展開する

The screenshot shows the Windows File Explorer interface. The address bar indicates the current location is 'Downloads'. The ribbon contains various actions, with 'すべて展開' (Expand all) highlighted by a red arrow. The main pane displays a list of files:

名前	更新日時	種類	サイズ
piano	2024/11/09 23:27	圧縮 (zip 形式) フォ...	227 KB
piano	2024/11/09 23:23	PNG ファイル	4 KB
Kazuate	2024/11/03 22:20	BlueStacks Androi...	3,711 KB

At the bottom left, the status bar shows '3 個の項目 | 1 個の項目を選択 226 KB'. At the bottom right, there are icons for the ribbon and a window icon.

圧縮されているので展開する



楽器アプリを作る

新しいプロジェクトをつくる

ai2.appinventor.mit.edu/#5785722125615104



Projects

Connect

Build

Settings

Help

My Projects

View Trash

Guide

Report an Issue

English

akiyolab6@gmail.com

Projects

New project

New Folder

Move...

Move To Trash

View Trash

Login to Gallery

Publish to Gallery

Projects

Name

Date Created

Date Modified

Kazuate

Nov 3, 2024, 9:52:39 PM

Nov 3, 2024, 10:27:20 PM

Omikuji

Oct 29, 2024, 11:18:34 PM

Nov 3, 2024, 9:45:28 PM

Create new App Inventor project

Project name:

Gakki

今回は「Gakki」

Toolkit:

Default

Theme:

Classic

Classic

Cancel

OK

[Privacy Policy and Terms of Use](#)

Accessibility: [accessibility.mit.edu](#)

アプリのタイトルを変える

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "アプリのタイトルを変える". Below it is the browser address bar with the URL "ai2.appinventor.mit.edu/#6031035893612544". The main interface includes a top navigation bar with options like "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab6@gmail.com". On the left is a component palette with categories like "Layout", "Media", "Drawing and Animation", and "Maps". The central canvas displays a mobile app preview with a "Rename" and "Delete" button. Below the preview is a "Media" section with an "Upload File ..." button. On the right is a properties panel with various settings. The "Title" property is highlighted with a red box and contains the text "キーボード". A blue dashed arrow points from the text "「キーボード」" to the "Title" input field. At the bottom, there are links for "Privacy Policy and Terms of Use" and "Accessibility: accessibility.mit.edu".

ai2.appinventor.mit.edu/#6031035893612544

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab6@gmail.com

Label LinearProgress ListPicker ListView Notifier PasswordTextBox Slider Spinner Switch TextBox TimePicker WebViewer

Layout Media Drawing and Animation Maps

BackgroundColor Default BackgroundImage None... BigDefaultText CloseScreenAnimation Default HighContrast OpenScreenAnimation Default ScreenOrientation Unspecified Scrollable ShowStatusBar

Media Upload File ...

Rename Delete

「キーボード」

Title キーボード TitleVisible

Privacy Policy and Terms of Use Accessibility: accessibility.mit.edu

キャンバスを配置する

ai2.appinventor.mit.edu/#6031035893612544

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab6@gmail.com

Search Components...

User Interface

Layout

Media

Drawing and Animation

Ball

Canvas

ImageSprite

Maps

Charts

Data Science

Sensors

Social

Storage

Connectivity

LEGO® MINDSTORMS®

Experimental

Display hidden components in Viewer

Phone size (320 x 505)

Screen1

Canvas1

Canvas1 (Canvas)

Appearance

BackgroundColor

Default

BackgroundImage

None...

FontSize

14.0

Height

Automatic...

Width

Automatic...

LineWidth

2.0

PaintColor

Default

TextAlignment

center : 1

Visible

Behavior

Rename Delete

Media

Privacy Policy and Terms of Use Accessibility: accessibility.mit.edu

画像をアップロードする

ai2.appinventor.mit.edu/#6031035893612544

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab6@gmail.com

Media

Drawing and Animation

- Ball
- Canvas
- ImageSprite

Maps

Charts

Data Science

Sensors

Social

Storage

Connectivity

LEGO® MINDSTORMS®

Experimental

Extension

キーボード

9:48

BackgroundImage

None...

FontSize

14.0

Height

Automatic...

Width

Automatic...

LineWidth

2.0

PaintColor

Default

TextAlignment

center : 1

Visible

Behavior

ExtendMovesOutsideCanvas

TapThreshold

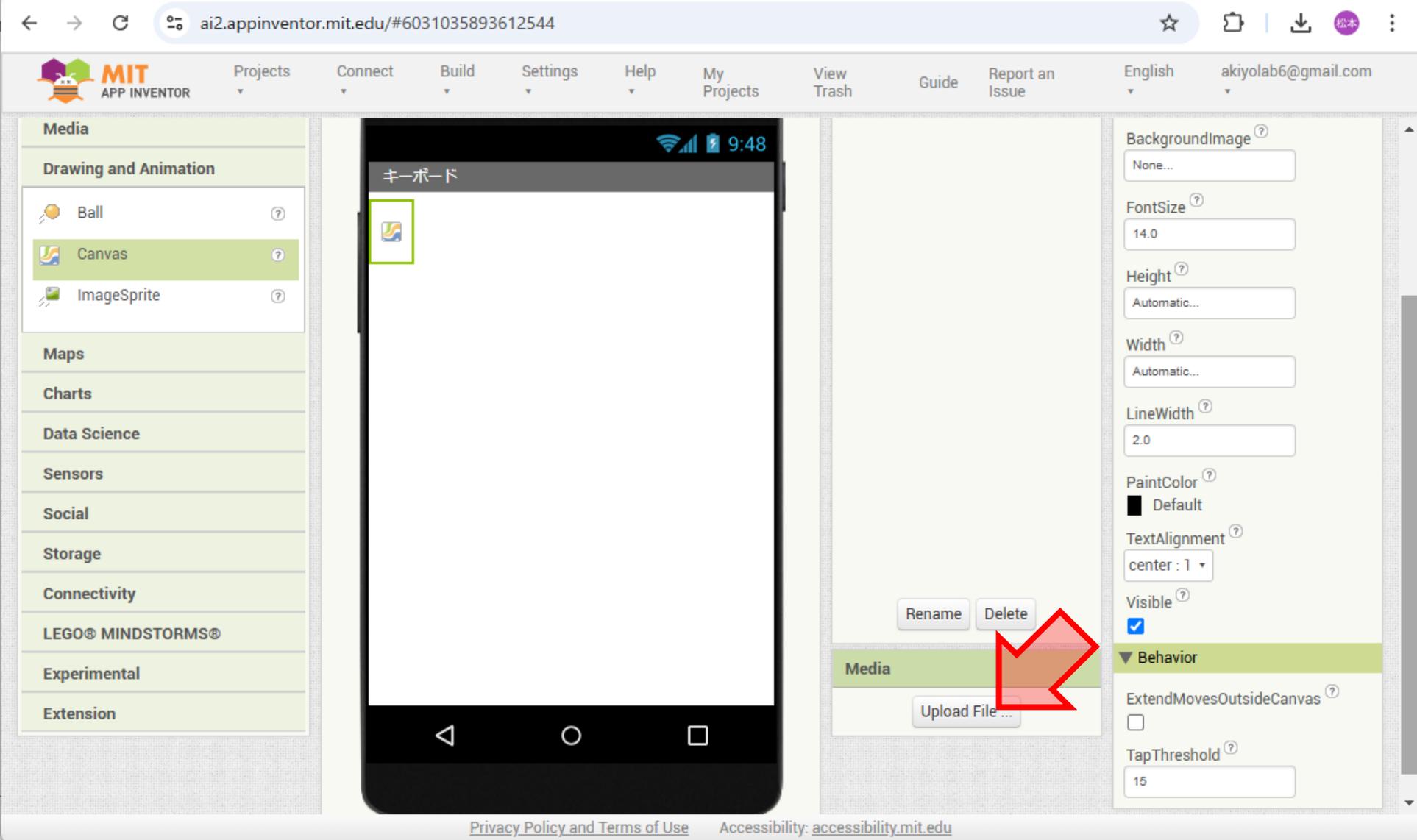
15

Rename Delete

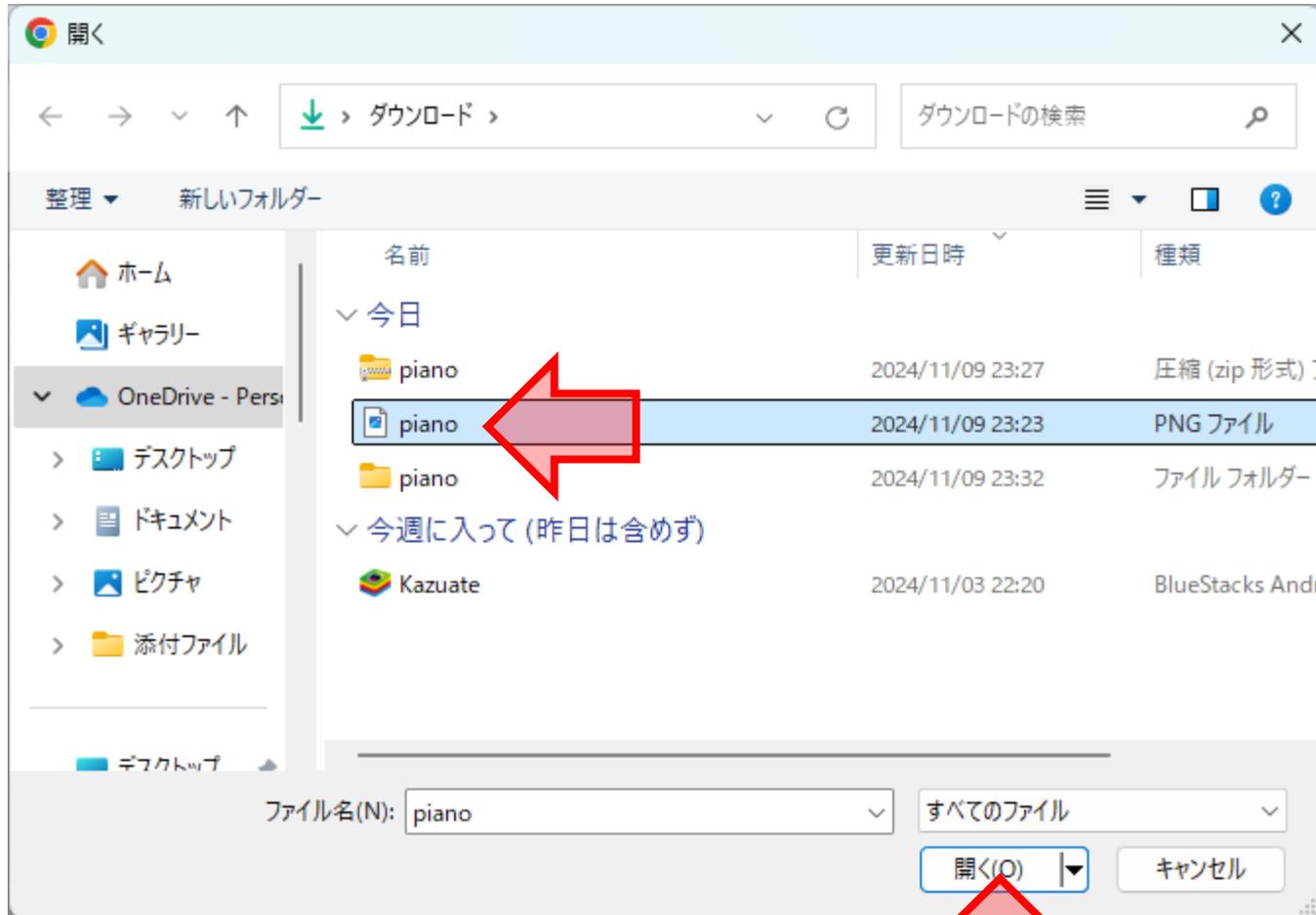
Media

Upload File ...

Privacy Policy and Terms of Use Accessibility: accessibility.mit.edu



画像をアップロードする



キャンバスに画像をセットする

ai2.appinventor.mit.edu/#6031035893612544

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab6@gmail.com

Gakki Screen1 Add Screen ... Remove Screen Project Properties Publish to Gallery Designer Blocks

Palette

Search Components...

User Interface

Layout

Media

Drawing and Animation

- Ball
- Canvas
- ImageSprite

Maps

Charts

Data Science

Sensors

Social

Storage

Viewer

Display hidden components in Viewer

Phone size (320 x 505)

キーボード

All Components

- Screen1
 - Canvas1

Properties

Canvas1 (Canvas)

Appearance

BackgroundColor

Default

BackgroundImage

None

piano.png

Upload File ...

Cancel OK

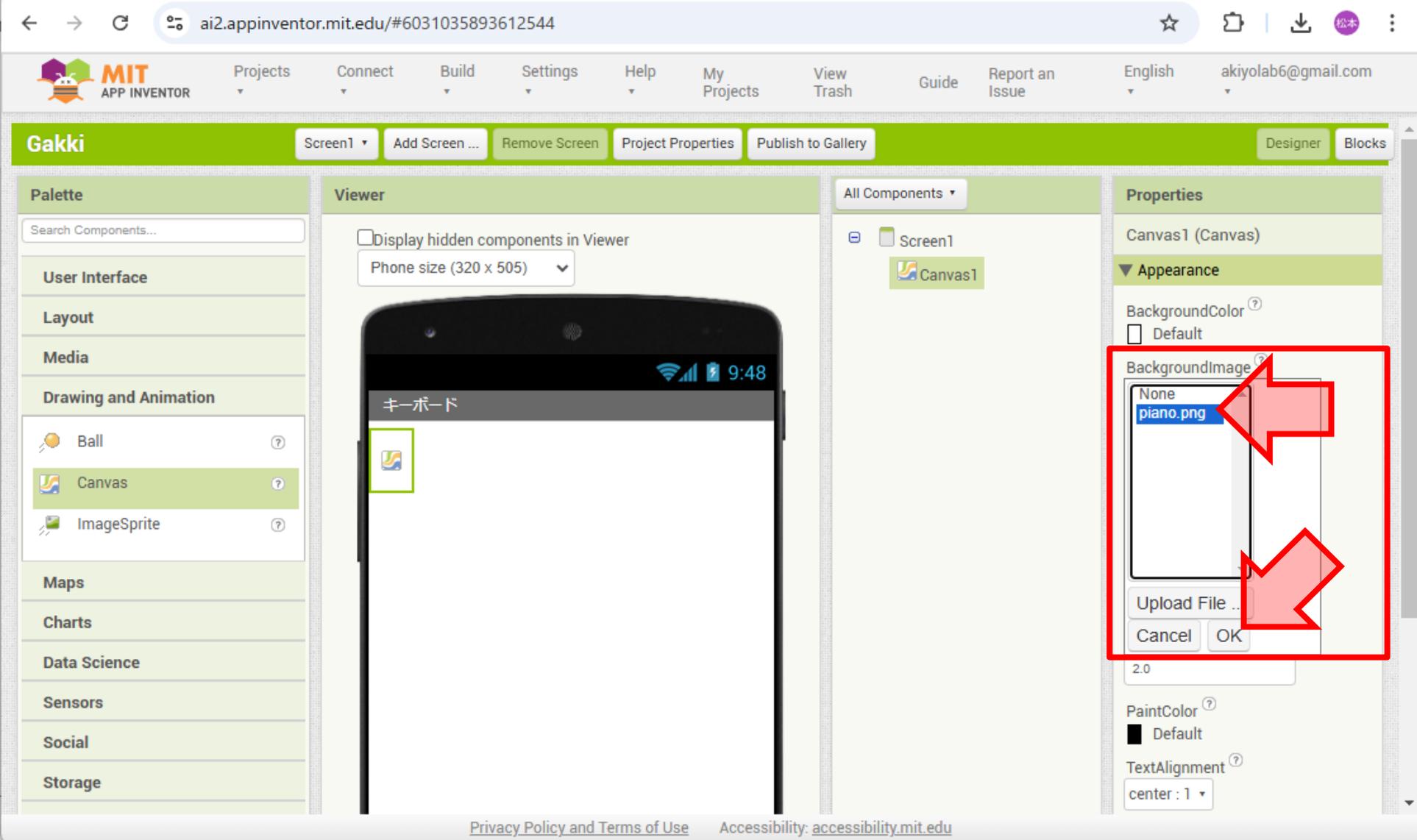
PaintColor

Default

TextAlignment

center : 1

Privacy Policy and Terms of Use Accessibility: accessibility.mit.edu



画像の幅を画面の幅いっぱいにする

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "画像の幅を画面の幅いっぱいにする". Below it is a browser address bar with the URL "ai2.appinventor.mit.edu/#6031035893612544". The main interface is divided into several panels:

- PaLETTE:** Contains a search bar and categories like "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", "Sensors", "Social", and "Storage". The "Canvas" component is highlighted.
- Viewer:** Shows a mobile phone screen with a piano keyboard image. The screen title is "キーボード". A dropdown menu shows "Phone size (320 x 505)".
- All Components:** Shows a tree view with "Screen1" and "Canvas1".
- Properties:** Shows the properties for "Canvas1 (Canvas)". The "Appearance" section is expanded, showing "Width" set to "Fill parent...". A red box highlights the "Width" property, and a blue dashed arrow points to it from the word "Fill".

At the bottom of the interface, there are links for "Privacy Policy and Terms of Use" and "Accessibility: accessibility.mit.edu".

音を追加する

The screenshot shows the MIT App Inventor interface. At the top, a blue banner contains the text "音を追加する". Below it, the browser address bar shows "ai2.appinventor.mit.edu/#6031035893612544". The interface includes a navigation bar with "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab6@gmail.com".

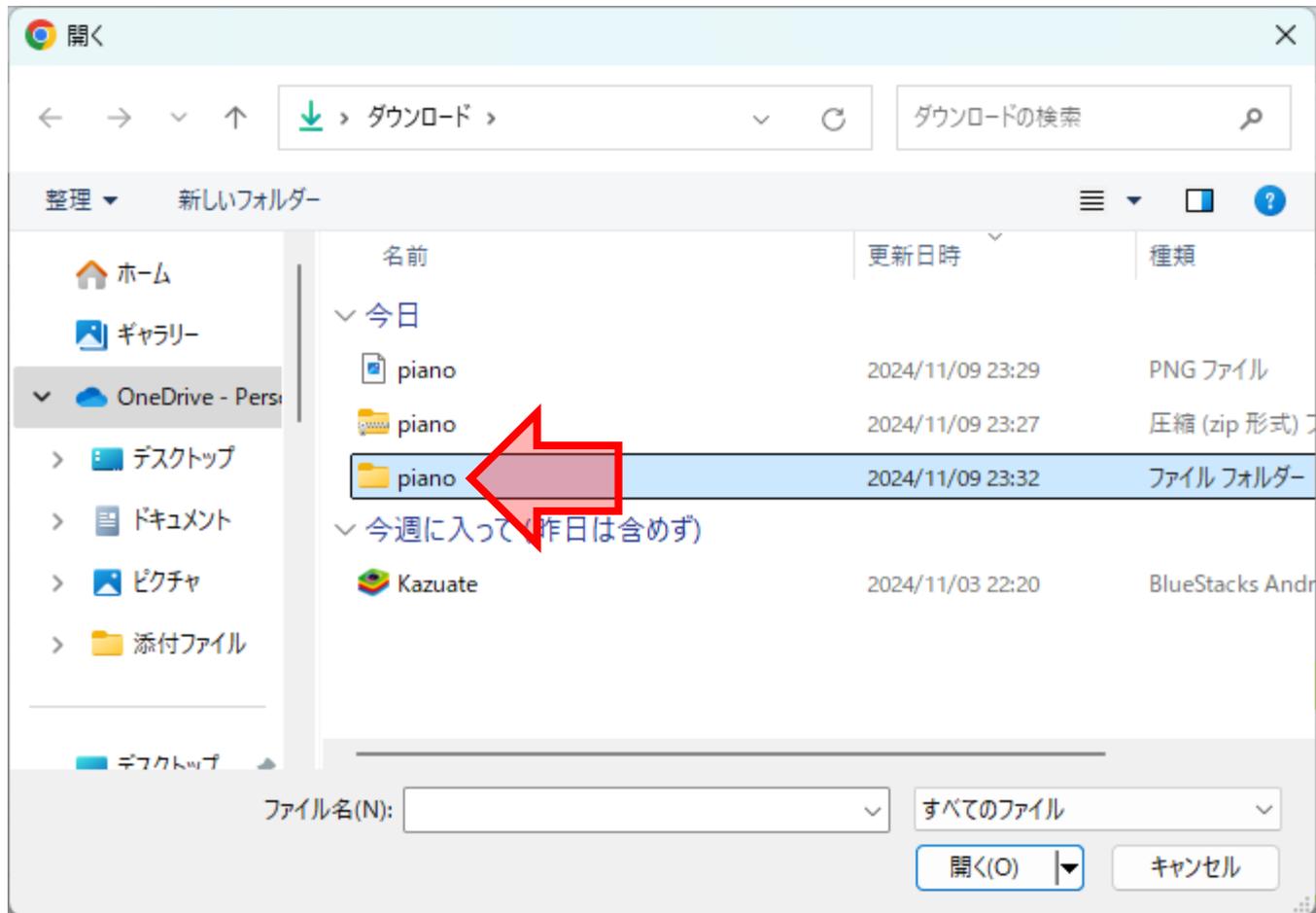
The left sidebar contains a "Media" section with the following items: Camcorder, Camera, FilePicker, ImagePicker, Player, Sound (highlighted), SoundRecorder, SpeechRecognizer, TextToSpeech, Translator, and VideoPlayer. A red arrow points to the "Sound" item. Below this are sections for "Drawing and Animation", "Maps", "Charts", and "Data Science".

The central area shows a mobile device preview of an app titled "キーボード" (Keyboard). The app displays a piano keyboard. A red dot is placed on the "Sound" item in the Media palette, and several red arrows point from this dot to the piano keyboard on the mobile device.

The right sidebar shows the "Properties" panel for the selected component. It includes sections for "Default", "Media", and "Behavior". The "Media" section shows "piano.png" and an "Upload File" button. A red arrow points to the "Upload File" button. The "Behavior" section includes "ExtendMovesOutsideCanvas" and "TapThreshold" (set to 15).

At the bottom of the interface, there are links for "Privacy Policy and Terms of Use" and "Accessibility: accessibility.mit.edu".

音のファイルをアップロードする



音のファイルをアップロードする

The screenshot shows the MIT App Inventor web interface. The browser address bar displays `ai2.appinventor.mit.edu/#6031035893612544`. The top navigation bar includes options like Projects, Connect, Build, Settings, Help, My Projects, View Trash, Guide, Report an Issue, English, and a user email `akiyolab6@gmail.com`. On the left, a component palette lists various widgets, with 'Sound' highlighted. The central workspace shows a piano application with a keyboard and a 'Non-visible components' section containing seven 'Sound' components, with 'Sound7' selected. On the right, the 'Media' panel lists files: `piano.png` and a series of audio files: `p_C3.mp3`, `p_D3.mp3`, `p_E3.mp3`, `p_F3.mp3`, `p_G3.mp3`, `p_A3.mp3`, and `p_B3.mp3`. A red box highlights these audio files, and a blue dashed arrow points from the list to the right. To the right of the audio list, the following file names are listed in blue text: `p_C3.mp3`, `p_D3.mp3`, `p_E3.mp3`, `p_F3.mp3`, `p_G3.mp3`, `p_A3.mp3`, and `p_B3.mp3`. The bottom of the page contains links for 'Privacy Policy and Terms of Use' and 'Accessibility: accessibility.mit.edu'.

音のファイルをセットする×7回

The screenshot displays the MIT App Inventor web interface for a project named "Gakki". The browser address bar shows the URL `ai2.appinventor.mit.edu/#6031035893612544`. The top navigation bar includes options like "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab6@gmail.com".

The main workspace is divided into several panels:

- PaLETTE:** Lists various components under "User Interface", "Layout", and "Media". The "Sound" component is currently selected.
- Viewer:** Shows a mobile phone screen with a piano keyboard interface. The screen title is "キーボード". A dropdown menu indicates "Phone size (320 x 505)".
- All Components:** A tree view showing the project structure. Under "Screen1", there is a "Canvas1" and seven "Sound" components (Sound1 through Sound7). Dashed blue arrows point from each "Sound" component to a list of audio files.
- Properties:** Shows the configuration for the selected "Sound1" component. Under the "Behavior" section, the "Source" property is highlighted with a red box and contains the value `p_C3.mp3...`. Below this, a list of audio files is shown: `p_C3.mp3`, `p_D3.mp3`, `p_E3.mp3`, `p_F3.mp3`, `p_G3.mp3`, `p_A3.mp3`, and `p_B3.mp3`.

At the bottom of the interface, there are links for "Privacy Policy and Terms of Use" and "Accessibility: accessibility.mit.edu".

座標を表示するところをつくる

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "座標を表示するところをつくる". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#6031035893612544". The interface includes a navigation bar with "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab6@gmail.com".

The main workspace is divided into three panels:

- User Interface:** A list of components on the left. "Label" is highlighted in green. A red arrow points from this "Label" to the "Text for Label2" property in the central canvas.
- Canvas:** A central area showing a mobile phone screen with a piano keyboard. The text "キーボード" is at the top. Below the keyboard, there are two text labels: "Text for Label1" and "Text for Label2". The "Text for Label2" is highlighted with a green box. A red arrow points from the "Label" component in the UI panel to this label.
- Properties:** A panel on the right showing the "Appearance" properties for the selected "Label2". The "Text" property is set to "Text for Label2".

At the bottom of the interface, there are links for "Privacy Policy and Terms of Use" and "Accessibility: accessibility.mit.edu".

Icon(ピアノ.png)を設定する

ai2.appinventor.mit.edu/#6031035893612544

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab6@gmail.com

Gakki

Screen1 Add Screen ... Remove Screen Project Properties Publish to Gallery Designer Blocks

Palette

Search Components...

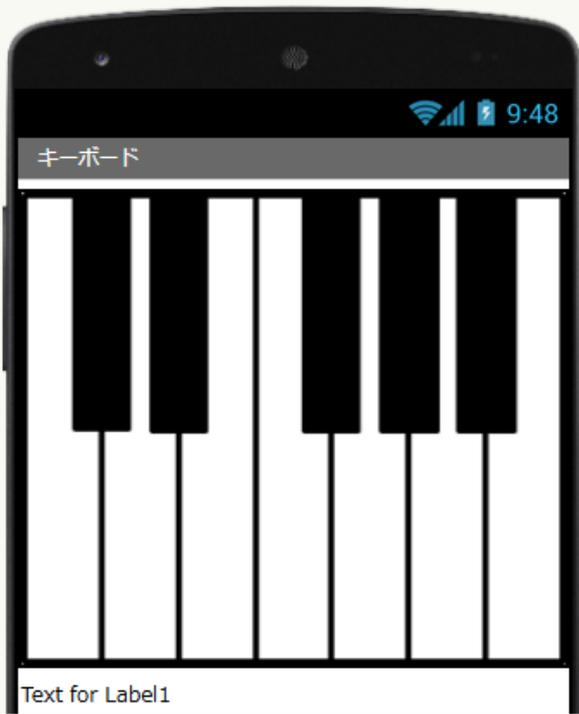
User Interface

- Button
- CheckBox
- CircularProgress
- DatePicker
- Image
- Label
- LinearProgress
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider

Viewer

Display hidden components in Viewer

Phone size (320 x 505)



Text for Label1

All Components

- Screen1
 - Canvas1
 - Label1
 - Label2
 - Sound1
 - Sound2
 - Sound3
 - Sound4
 - Sound5
 - Sound6
 - Sound7

Properties

Label2 (Label)

Appearance

BackgroundColor None

FontBold

FontItalic

FontSize 14.0

FontTypeface default...

HTMLFormat

HasMargins

Height Automatic...

Width

Privacy Policy and Terms of Use Accessibility: accessibility.mit.edu

Icon(ピアノ.png)を設定する

The screenshot shows the MIT App Inventor interface with the Project Properties dialog open. The dialog has a green header and a sidebar on the left with tabs for General, Theming, and Publishing. The main content area is divided into sections: DefaultFileScope, Icon, and ShowListsAsJson. The Icon section is highlighted with a red border, and the text input field below it contains "piano.png...". A blue dashed arrow points from the text "piano.png" to the input field. The background shows the MIT App Inventor logo and navigation menu.

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab6@gmail.com

Project Properties

General

Theming

Publishing

DefaultFileScope

Specifies the default scope used when components access files. Note that the [File](#) component has its own property for controlling file scopes.

App ▾

Icon

The image used for your App's display icon should be a square png or jpeg image with dimensions up to 1024x1024 pixels. Larger images may cause compiling or installing the app to fail. The build server will generate images of standard dimensions for Android devices.

piano.png...

ShowListsAsJson

If false, lists will be converted to strings using Lisp notation, i.e., as symbols separated by spaces, e.g., (a 1 b2 (c d)). If true, lists will appear as in Json or Python, e.g. ["a", 1, "b", 2, ["c", "d"]]. This property appears only in Screen 1, and the value for Screen 1 determines the behavior for all screens. The property defaults to "true" meaning that the App Inventor

CLOSE

Text for Label1

Width ?

Privacy Policy and Terms of Use Accessibility: [accessibility.mit.edu](#)

キャンバスがタッチされたら

ai2.appinventor.mit.edu/#5096456220180480

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab5@gmail.com

Gakki Publish to Gallery Screen1 Add Screen ... Remove Screen Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - Canvas1
 - Label1
 - Label2
 - Sound1
 - Sound2
 - Sound3

Viewer

```
when Canvas1 .Dragged
  startX startY prevX prevY currentX currentY draggedAnySprite
do

when Canvas1 .Flung
  x y speed heading xvel yvel flungSprite
do

when Canvas1 .TouchDown
  x y
do

when Canvas1 .TouchUp
  x y
do

when Canvas1 .Touched
```



ドを鳴らす

ai2.appinventor.mit.edu/#5096456220180480

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab5@gmail.com

Gakki Publish to Gallery Screen1 Add Screen ... Remove Screen Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - Canvas1
 - Label1
 - Label2
 - Sound1
 - Sound2
 - Sound3

Viewer

```
when Sound1 .SoundError
  message
do

call Sound1 .Pause

call Sound1 .Play

call Sound1 .Resume

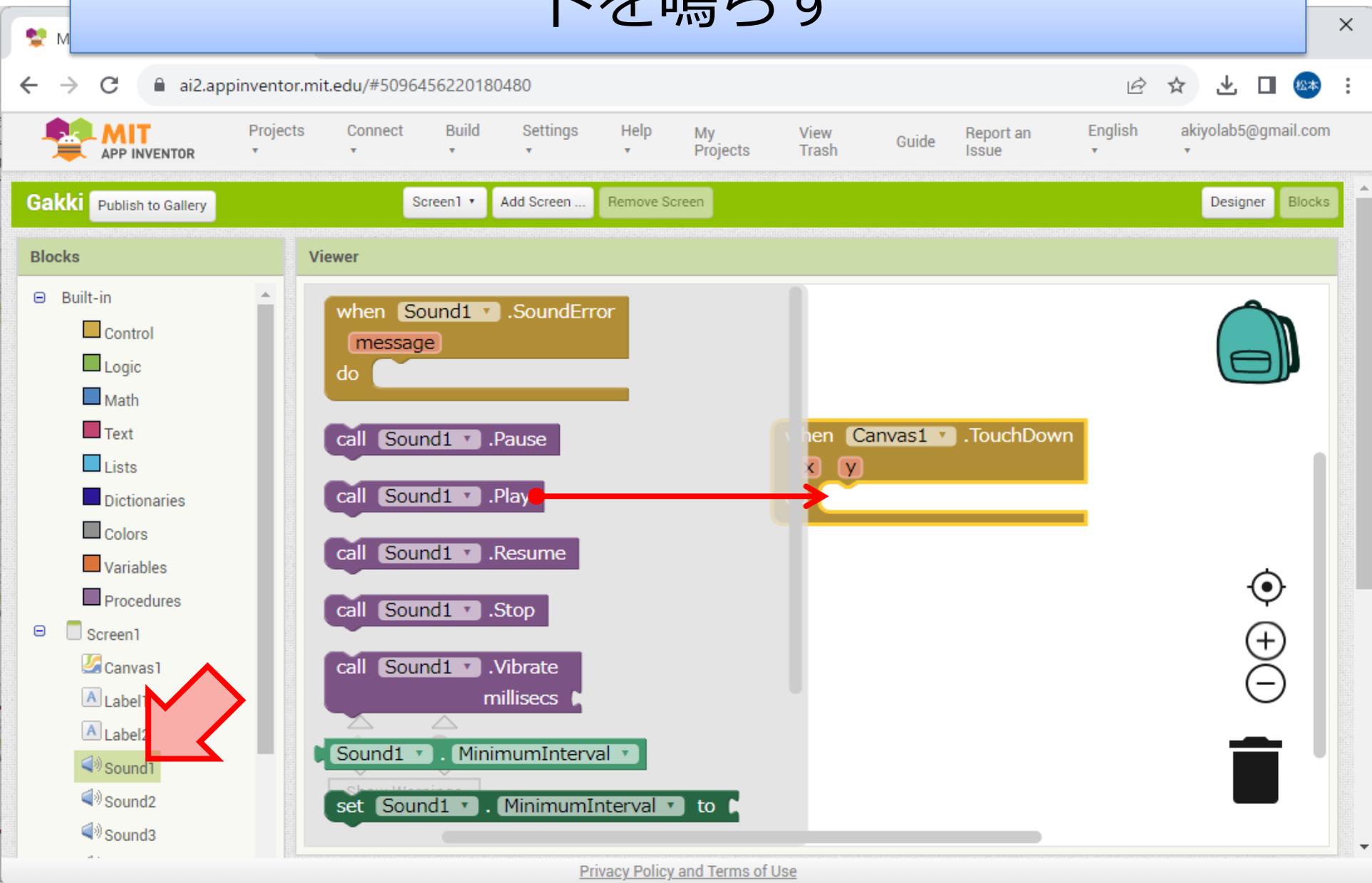
call Sound1 .Stop

call Sound1 .Vibrate
  millisecs

Sound1 . MinimumInterval

set Sound1 . MinimumInterval to
```

when Canvas1 .TouchDown
 x y



座標を表示する処理をつくる

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "座標を表示する処理をつくる". Below it is the browser address bar with the URL "ai2.appinventor.mit.edu/#5096456220180480". The MIT App Inventor logo and navigation menu are visible. The main workspace is divided into a "Blocks" panel on the left and a "Viewer" panel on the right. The "Blocks" panel shows a list of built-in components, with "Canvas1" and "Label1" highlighted. A red arrow points from "Label1" in the blocks list to the "Label1" component in the viewer. The "Viewer" panel displays a sequence of code blocks for "Label1": "FontSize", "set FontSize to", "HTMLContent", "HasMargins", "set HasMargins to", "Height", "set Height to", "set HeightPercent to", "Text", and "set Text to". A "when Canvas1 TouchDown" event block is also present, containing a "do" block with a "call Sound1 .Play" block. A red arrow points from the "call Sound1 .Play" block back to the "set Text to" block. The interface includes a "Gakki" logo, "Publish to Gallery" button, and various utility icons like a backpack, zoom controls, and a trash can.

座標を表示する処理をつくる

ai2.appinventor.mit.edu/#5096456220180480

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English akiyolab5@gmail.com

Gakki Publish to Gallery Screen1 Add Screen ... Remove Screen Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - Canvas1
 - Label1
 - Label2
 - Sound1
 - Sound2
 - Sound3

Viewer

```
Label2 . FontSize
set Label2 . FontSize to
Label2 . HTMLContent
Label2 . HasMargins
set Label2 . HasMargins to
Label2 . Height
set Label2 . Height to
set Label2 . HeightPercent to
Label2 . Text
set Label2 . Text to
```

```
when Canvas1 . TouchDown
do
  call Sound1 . Play
  set Label1 . Text to
```

Privacy Policy and Terms of Use

座標を表示するところに

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the text "座標を表示するところに". Below the banner is the browser address bar with the URL "ai2.appinventor.mit.edu/#5096456220180480". The interface includes a navigation menu with options like "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab5@gmail.com". The main workspace is divided into "Blocks" and "Viewer" sections. The "Blocks" section on the left lists various categories: Built-in (Control, Logic, Math, Text, Lists, Dictionaries, Colors, Variables, Procedures), Screen1, Canvas1, Label1, Label2, Sound1, Sound2, and Sound3. The "Viewer" section on the right shows a canvas with a teal backpack icon. A code block is attached to the canvas, starting with "when Canvas1 .TouchDown" and containing a "do" block with three actions: "call Sound1 .Play", "set Label1 .Text to", and "set Label2 .Text to". At the bottom of the viewer, there are warning indicators: a yellow triangle with "0" and a red circle with "2", and a "Show Warnings" button. The bottom of the interface features a "Privacy Policy and Terms of Use" link.

x座標・y座標をセットする

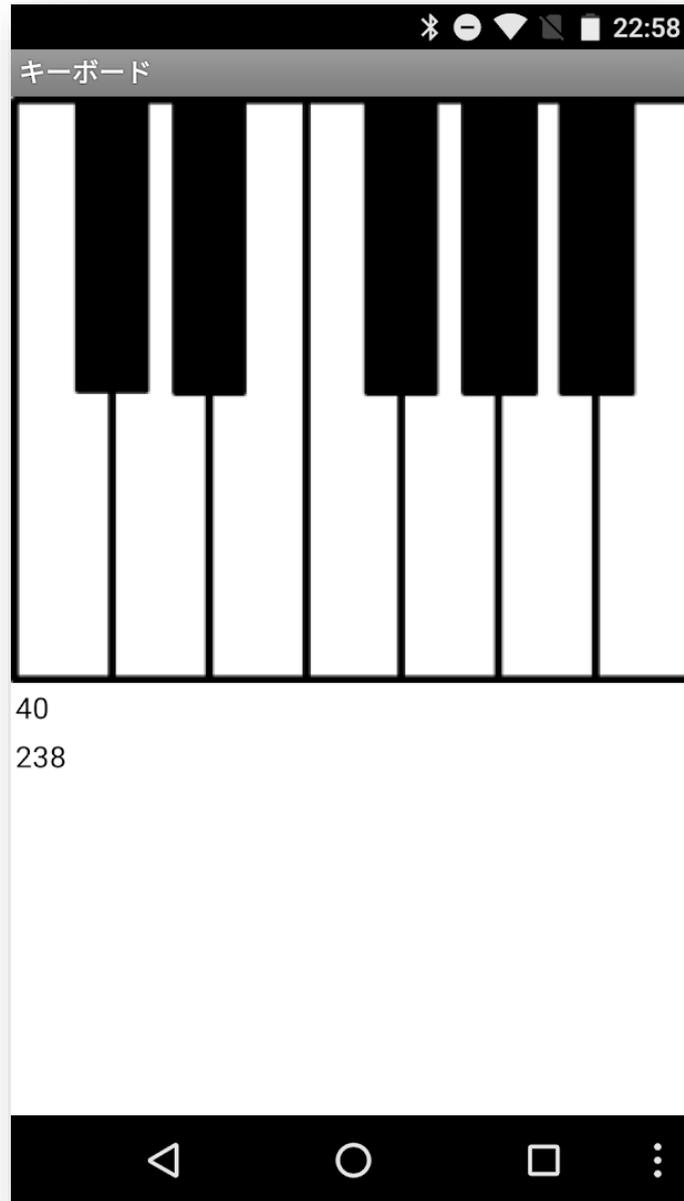
The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "x座標・y座標をセットする". Below it is the browser address bar with the URL "ai2.appinventor.mit.edu/#5096456220180480". The interface includes a navigation bar with "Gakki", "Publish to Gallery", "Screen1", "Add Screen...", "Remove Screen", "Designer", and "Blocks".

The "Blocks" panel on the left lists various categories: Built-in (Control, Logic, Math, Text, Lists, Dictionaries, Colors, Variables, Procedures), Screen1, Canvas1, Label1, Label2, Sound1, Sound2, and Sound3. The "Viewer" panel on the right shows a canvas with a blue backpack icon. A code block is attached to the canvas, starting with "when Canvas1 .TouchDown". The code block contains the following logic:

```
when Canvas1 .TouchDown
do
  call Sound1 .Play
  set Label1 . Text to get x
  set Label2 . Text to get y
```

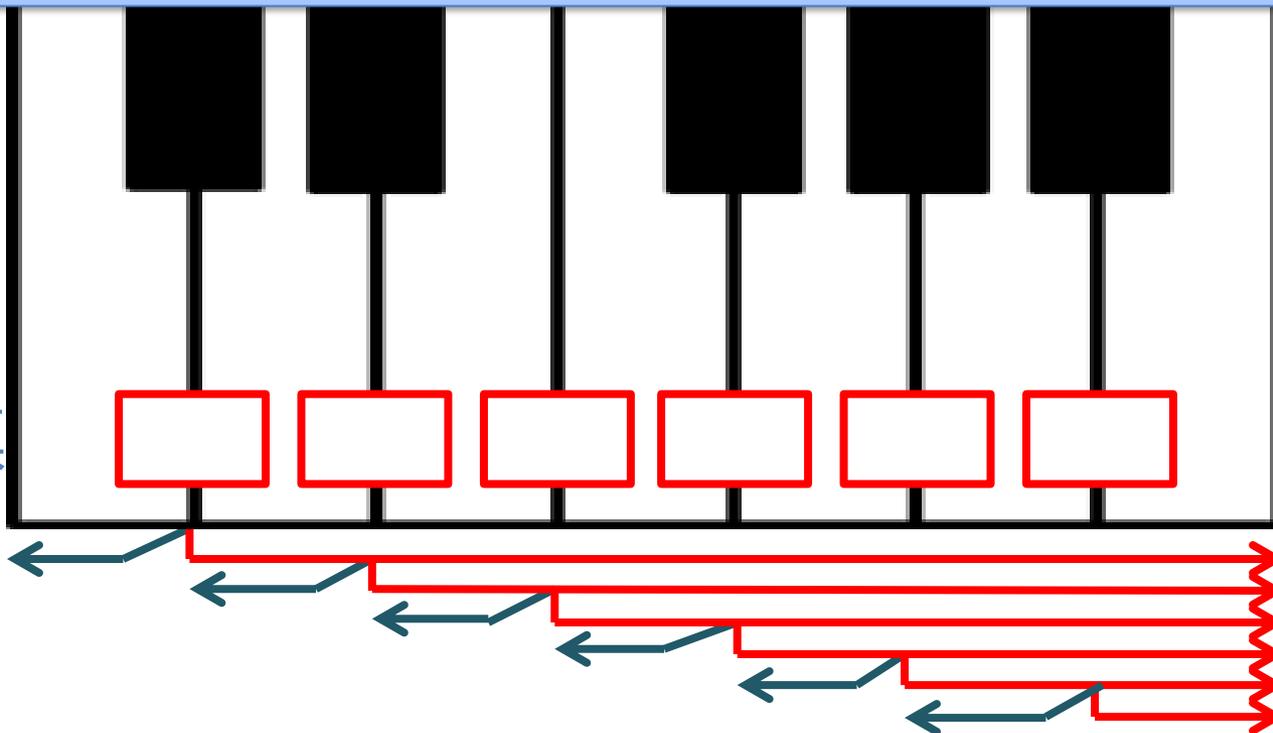
Red arrows point from the "x" and "y" variables in the code block to the "get x" and "get y" blocks respectively. At the bottom of the viewer, there are navigation controls (up, down, left, right arrows), a "Show Warnings" button, and a trash icon.

実行してタップした場所の座標を調査する



音の境界の座標を調査する

x座標



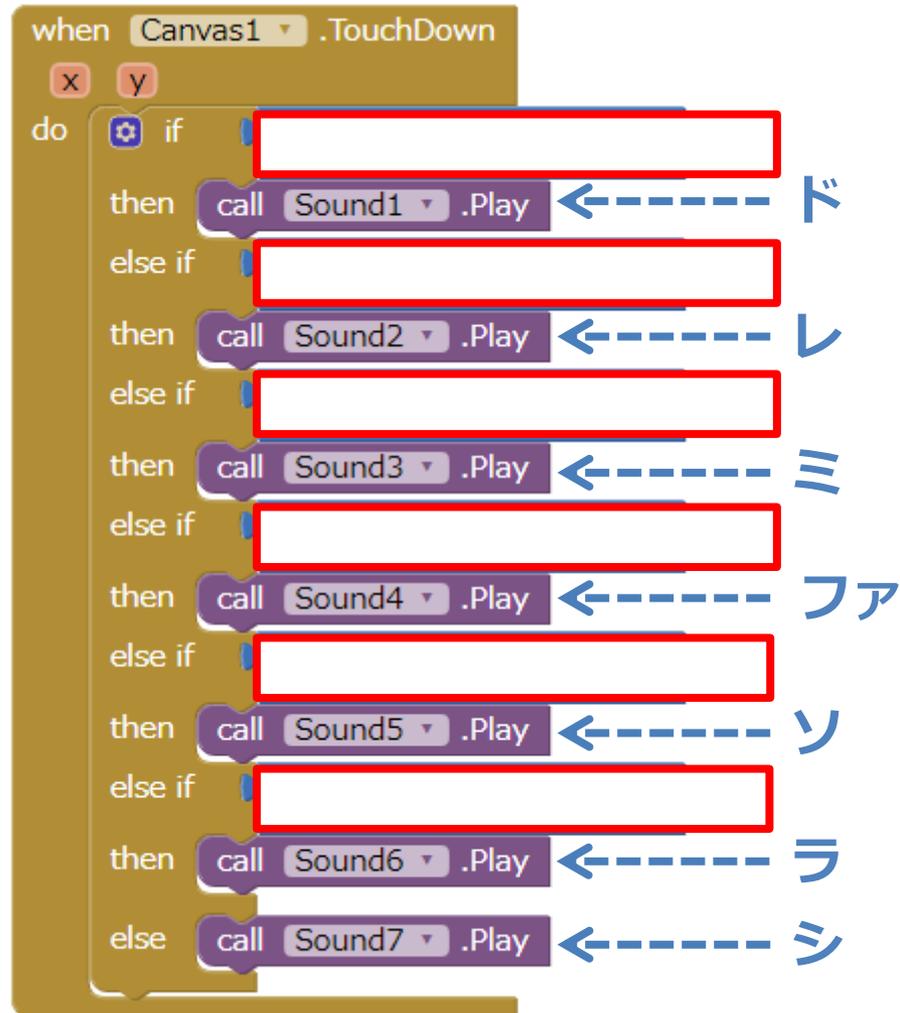
もしxが より小さかったら
ドを鳴らす
そうでなくて
もしxが より小さかったら
レを鳴らす
そうでなくて
もしxが より小さかったら
...

空欄を埋めてみましょう

```
when Canvas1 .TouchDown
do
  if [ ]
  then call Sound1 .Play ← ド
  else
    if [ ]
    then call Sound2 .Play ← レ
    else
      if [ ]
      then call Sound3 .Play ← ミ
      else
        if [ ]
        then call Sound4 .Play ← ファ
        else
          if [ ]
          then call Sound5 .Play ← ソ
          else
            if [ ]
            then call Sound6 .Play ← ラ
            else
              call Sound7 .Play ← シ
```

The image shows a Scratch script for the event `when Canvas1 .TouchDown`. The script is a series of nested `if-then-else` blocks. Each `if` block has an empty condition field (highlighted with a red box). The `then` clause of each `if` block is a `call` block that plays a specific sound: `Sound1 .Play` (labeled `ド`), `Sound2 .Play` (labeled `レ`), `Sound3 .Play` (labeled `ミ`), `Sound4 .Play` (labeled `ファ`), `Sound5 .Play` (labeled `ソ`), `Sound6 .Play` (labeled `ラ`), and `Sound7 .Play` (labeled `シ`). Dashed blue arrows point from the empty condition fields to the corresponding sound objects. The script also includes `x` and `y` coordinate variables at the top.

これでもOK



調査後，不要になったラベルは削除する

ai2.appinventor.mit.edu/#6031035893612544

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Search Components...

User Interface

- Button
- CheckBox
- CircularProgress
- DatePicker
- Image
- Label**
- LinearProgress
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox

Display hidden components in Viewer

Phone size (320 x 505)

キーボード

Text for Label1

Text for Label2

Screen1

- Canvas1
- Label1**
- Label2
- Sound1
- Sound2
- Sound3
- Sound4
- Sound5
- Sound6
- Sound7

Label1 (Label)

Appearance

BackgroundColor

FontBold

FontItalic

FontSize

FontTypeface

HTMLFormat

HasMargins

Height

Width

Text

Rename Delete

Media

応用する

- 黒鍵の音が鳴るようにする
 - y座標の判定処理を加える
- 楽器を選択できるようにする
 - Spinnerを利用する
- 画像や音を自由に変えてみる



応用する前に
「Save project as...」
でバックアップ！

振り返りを提出

- 16:20になったら作業を終わりにし（まだ作業中であっても一度中断）、manabaの「小テスト」から「振り返り課題」を提出する。
- 本日の振り返り課題は、実行画面のアップロードがあるため、エミュレータで実行した人はPCから、スマホで実行した人はそのスマホからmanabaにアクセスして提出する。
- 振り返り課題を提出したら終わってよい。ただし作業がまだ残っている場合は次週の授業開始前までに終わらせておく。