

プログラミング概論

第9回 2024年11月15日

App Inventorによる
Androidアプリ開発の実践
(3) 楽器アプリの応用

今回の授業内容

- 円形の範囲の指定
- 素材を用意する
- 「太鼓の達人」もどきを作る
- 応用：音符（？）を流す

円形の範囲の指定

円形の範囲の指定方法

タップした座標 (x, y) が

もし

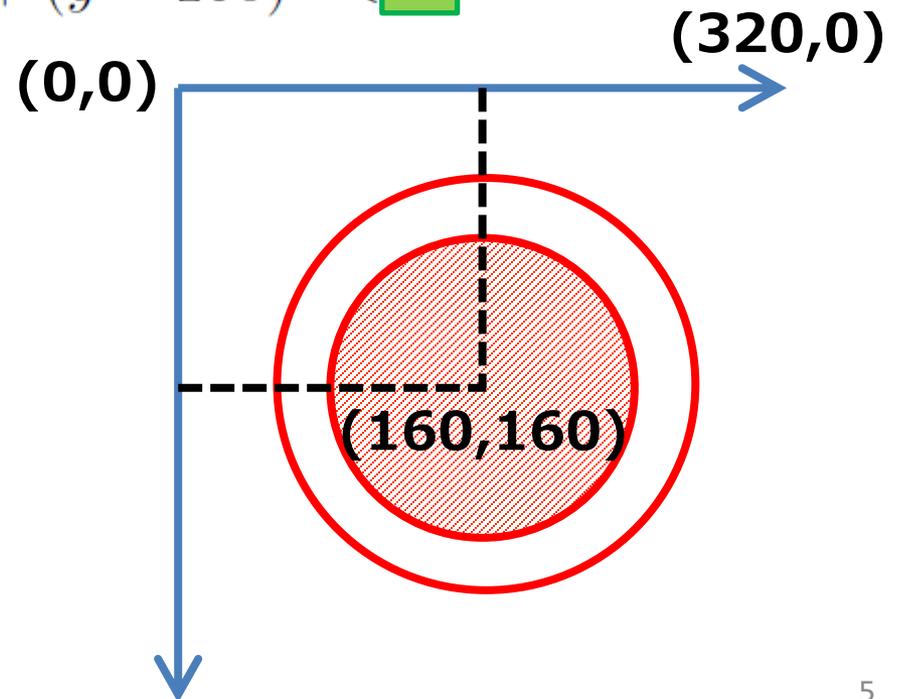
$$(x - 160)^2 + (y - 160)^2 < \square^2$$

外側の円の半径

内側の円の半径

もし $(x - 160)^2 + (y - 160)^2 < \square^2$

だったら
「ドン」
でなかったら
「カツ」



素材を用意する

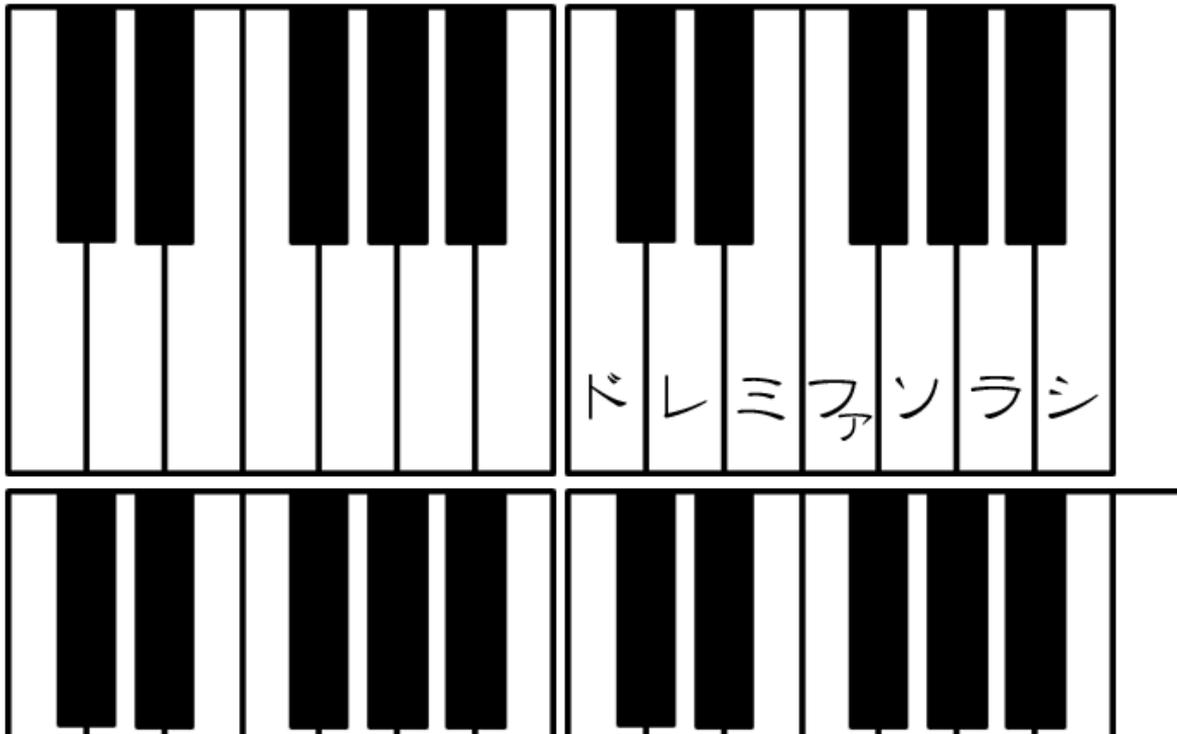
曲のファイルをダウンロードする

フリー素材へのリンク

- [いらすとや](#) (おみくじの検索結果)
- [音楽研究所](#) (森のくまさん)

素材

- ピアノ



曲のファイルをダウンロードする

The screenshot shows a web browser window with the address bar displaying `mu-tech.org/Traditional/kumahtml.html`. The page content consists of a grid of buttons for different music styles and formats. The styles listed are 弦楽四重奏, 癒しのハーブ, ポルカ, サンバ, カントリー, and 他の音楽スタイル. For each style, there are buttons for MIDI and MP3 (or MP4 for 'カントリー'). A context menu is open over the 'MP3' button for 'カントリー'. The menu options are: 新しいタブで開く, 新しいウィンドウで開く, シークレット ウィンドウで開く, この画像の QR コードを作成, 名前を付けてリンク先を保存..., リンクアドレスをコピー, 新しいタブで画像を開く, 名前を付けて画像を保存..., 画像をコピー, 画像アドレスをコピー, Google レンズで検索, and 検証. A red arrow points to the 'MP3' button with the annotation '①カントリーのMP3のボタンを右クリック'. Another red arrow points to the '名前を付けてリンク先を保存...' option with the annotation '②名前を付けてリンク先を保存'.

曲名	MIDI	MP3	MP4
弦楽四重奏	ボタン	ボタン	
癒しのハーブ	ボタン	ボタン	
ポルカ	ボタン	ボタン	
サンバ	ボタン	ボタン	
カントリー	ボタン	ボタン	ボタン
他の音楽スタイル	ボタン		

曲のファイルをダウンロードする

mu-tech.org/Traditional/kumahtml.html

弦楽四重奏	MIDI	MP3	
癒しのハーブ	MIDI	MP3	MP4
ポルカ	MIDI	MP3	MP4
サンバ	MIDI	MP3	MP4
カントリー	MIDI	MP3	MP4
他の音楽スタイル	MIDI		

Sippin_Cider_Through_A_Straw_Country.mp3
安全でないダウンロードがブロックされました

保存

画像・音をダウンロードする

- [ドレミファソラシ \(ピアノ\)](#)
- [ドレミファソラシ \(オルゴール\)](#)
- [ドレミファソラシ \(トランペット\)](#)
- [ドレミファソラシ \(ティンパニ\)](#)
- [1オクターブ上の「ド」](#)
- [パー](#)

• 太鼓



- 新しいタブで開く
- 新しいウィンドウで開く
- シークレット ウィンドウで開く
- 名前を付けてリンク先を保存...
- リンクのアドレスをコピー
- 検証

• [ワク](#)

- [効果音「ドン」](#)
- [効果音「カツ」](#)

ダウンロード

②名前を付けて
リンク先を保存

①リンクの上で右クリック

「太鼓の達人」もどきを作る

新しいプロジェクトをつくる

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

Projects New project New folder Move... Move To Trash View Trash Login to Gallery Publish to Gallery

Projects	Name	Date Created	Date Modified
<input type="checkbox"/>	Gakki	Nov 9, 2024, 11:34:18 PM	Nov 9, 2024, 11:54:08 PM
<input type="checkbox"/>	Kazuate	Nov 3, 2024, 9:52:39 PM	Nov 9, 2024, 11:32:59 PM
<input type="checkbox"/>	Omikuji	Nov 3, 2024, 9:45:28 PM	

Create new App Inventor project

Project name: Taiko

Toolkit: Default

Theme: Classic

Cancel OK

今回は「Taiko」

Classic

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. The browser address bar displays `ai2.appinventor.mit.edu/#6364562132631552`. The top navigation bar includes links for Projects, Connect, Build, Settings, Help, My Projects, View Trash, Guide, Report an Issue, and language settings. The left sidebar lists various components like Switch, TextBox, TimePicker, and WebViewer, along with categories like Layout, Media, Drawing and Animation, etc. The central workspace shows a mobile app preview with an Android navigation bar and a media component with an "Upload File ..." button. On the right, the properties panel for the selected component is visible, with the "Title" property highlighted in a red box and set to "太鼓". A blue dashed arrow points from the Japanese text "「太鼓」" to the text input field.

ai2.appinventor.mit.edu/#6364562132631552

MIT APP INVENTOR

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

Switch ?
TextBox ?
TimePicker ?
WebView ?

Layout
Media
Drawing and Animation
Maps
Charts
Data Science
Sensors
Social
Storage
Connectivity
LEGO® MINDSTORMS®
Experimental
Extension

Media
Upload File ...

ScreenOrientation ?
Unspecified ▾
Scrollable ?

ShowStatusBar ?

Title ?
太鼓
TitleVisible ?

「太鼓」

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

縦に部品を並べる

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "縦に部品を並べる". Below the banner, the browser address bar shows the URL "ai2.appinventor.mit.edu/#6364562132631552". The interface includes a navigation bar with 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:** Contains a search bar and categories like "User Interface" and "Layout". Under "Layout", "VerticalArrangement" is highlighted with a red dot, and a red arrow points to it.
- Viewer:** Shows a mobile phone simulator with the text "太鼓" at the top. A red arrow points from the "VerticalArrangement" component in the Palette to a grey rectangular area on the simulator screen.
- All Components:** Shows a tree view with "Screen1" and "VerticalArrangement1".
- Properties:** Shows the properties for "VerticalArrangement1", including "Appearance" settings like "AlignHorizontal", "AlignVertical", "BackgroundColor", "Height", "Width", "Image", and "Visible".

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

横に部品を並べる

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "横に部品を並べる". Below it is the browser address bar with the URL "ai2.appinventor.mit.edu/#6364562132631552". The main interface is divided into several sections:

- Navigation Bar:** Includes "MIT APP INVENTOR" logo, "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab6@gmail.com".
- Project Bar:** Shows "Taiko" and buttons for "Screen1", "Add Screen ...", "Remove Screen", "Project Properties", "Publish to Gallery", "Designer", and "Blocks".
- Palettes:**
 - Left Palette:** Contains categories like "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", and "Sensors". Under "Layout", "HorizontalArrangement" is highlighted with a red circle and a red arrow pointing to the viewer.
 - Right Palette (Properties):** Shows properties for "HorizontalArrangement1 (HorizontalArrangement)", including "Appearance" settings like "AlignHorizontal" (Left), "AlignVertical" (Top), "BackgroundColor" (Default), "Height" (Automatic), "Width" (Automatic), "Image" (None), and "Visible" (checked).
- Viewer:** Displays a mobile phone screen with the text "太鼓" (Taiko) and a gray rectangular area representing the horizontal arrangement component. A red arrow points from the "HorizontalArrangement" component in the left palette to this area.
- Component Hierarchy:** Shows a tree view with "Screen1" containing "VerticalArrangement1" and "HorizontalArrangement1".

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

演奏開始ボタンをつくる

The screenshot shows the MIT App Inventor web interface. On the left, the 'Button' widget is selected in the component palette. In the center, a mobile device preview shows a button labeled 'スタート' (Start) on a screen titled '太鼓' (Taiko). On the right, the properties panel for the selected button is visible. The 'Text' property is highlighted with a red box and contains the text 'スタート'. A blue arrow points from the text 'スタート' in the properties panel to the button on the mobile preview. The 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'. The URL in the browser is 'ai2.appinventor.mit.edu/#6364562132631552'.

キャンバスを配置する

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "キャンバスを配置する". Below the banner is the browser address bar showing the URL "ai2.appinventor.mit.edu/#6364562132631552". The interface includes a navigation bar with 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:** A sidebar on the left with a search bar and categories: "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", "Sensors", "Social", and "Storage". The "Canvas" component is highlighted in green under "Drawing and Animation". A red arrow points from the "Canvas" icon to the viewer.
- Viewer:** A central area showing a mobile phone simulation. It has a "Display hidden components in Viewer" checkbox and a "Phone size (320 x 505)" dropdown. The phone screen shows a "太鼓" (Taiko) app with a "スタート" (Start) button and a small Canvas component. A red arrow points from the Palette to this Canvas component.
- All Components:** A panel on the right showing a tree view of the app's components: "Screen1", "VerticalArrangement1", "HorizontalArrangement1", "Button1", and "Canvas1".
- Properties:** A panel on the far right showing the properties for the selected "Canvas1 (Canvas)" component. Under the "Appearance" section, properties like "BackgroundColor", "BackgroundImage", "FontSize", "Height", "Width", "LineWidth", "PaintColor", and "TextAlignment" are visible.

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

キャンバスに画像をセットする

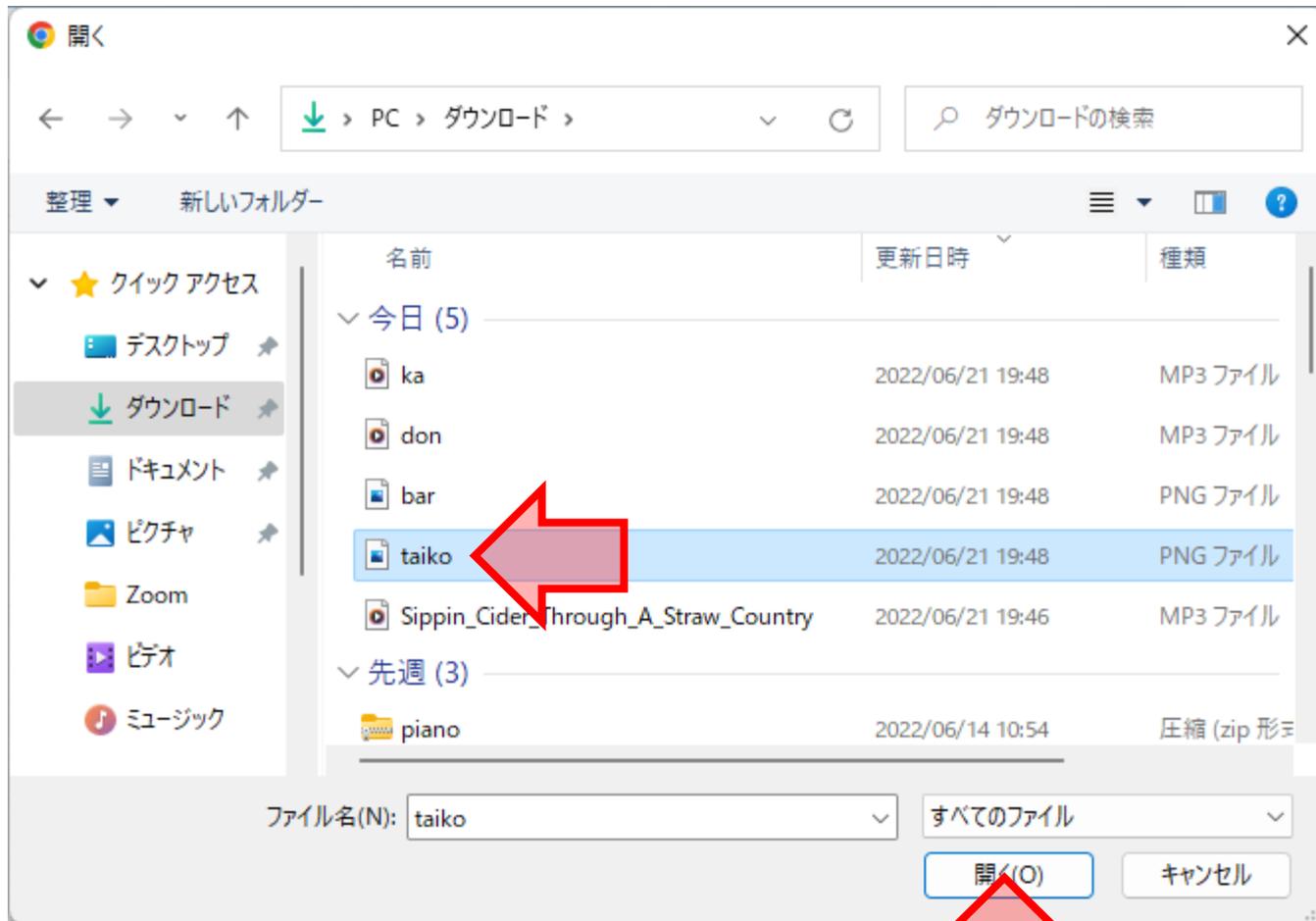
The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "キャンバスに画像をセットする". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#6364562132631552". The interface includes a navigation bar with "MIT APP INVENTOR" and various menu items like "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:** 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 in green.
- Viewer:** Shows a mobile phone simulation. The screen displays the text "太鼓" and "スタート". A small canvas component is visible at the bottom of the screen.
- All Components:** A tree view showing the hierarchy of components: "Screen1" contains "VerticalArrangement1", which contains "HorizontalArrangement1", which contains "Button1" and "Canvas1".
- Properties:** Shows the properties for the selected "Canvas1 (Canvas)" component. The "Appearance" section is expanded, showing "BackgroundColor" (Default) and "BackgroundImage". The "BackgroundImage" dropdown menu is open, showing "None" as the selected option. A red box highlights this dropdown, and a red arrow points to the "None" option.

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

画像をアップロードする



高さと幅を設定する

Phone size (320 x 505)

Appearance

Height 320 pixels...

Width 320 pixels...

320

Canvas1

太鼓

スタート

MIT APP INVENTOR

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

User Interface

Layout

Media

Drawing and Animation

Ball

Canvas

ImageSprite

Maps

Charts

Data Science

Sensors

Social

Storage

Connectivity

LEGO® MINDSTORMS®

Experimental

Extension

VerticalArrangement1

HorizontalArrangement1

Button1

Canvas1

BackgroundColor

Default

BackgroundImage

taiko.png...

FontSize

14.0

Height

320 pixels...

Width

320 pixels...

LineWidth

2.0

PaintColor

Default

TextAlignment

center : 1

Visible

Behavior

ExtendMovesOutsideCanvas

taiko.png

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

演奏機能を追加する

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "演奏機能を追加する". Below it is the browser address bar with the URL "ai2.appinventor.mit.edu/#6364562132631552". The main interface is divided into several sections:

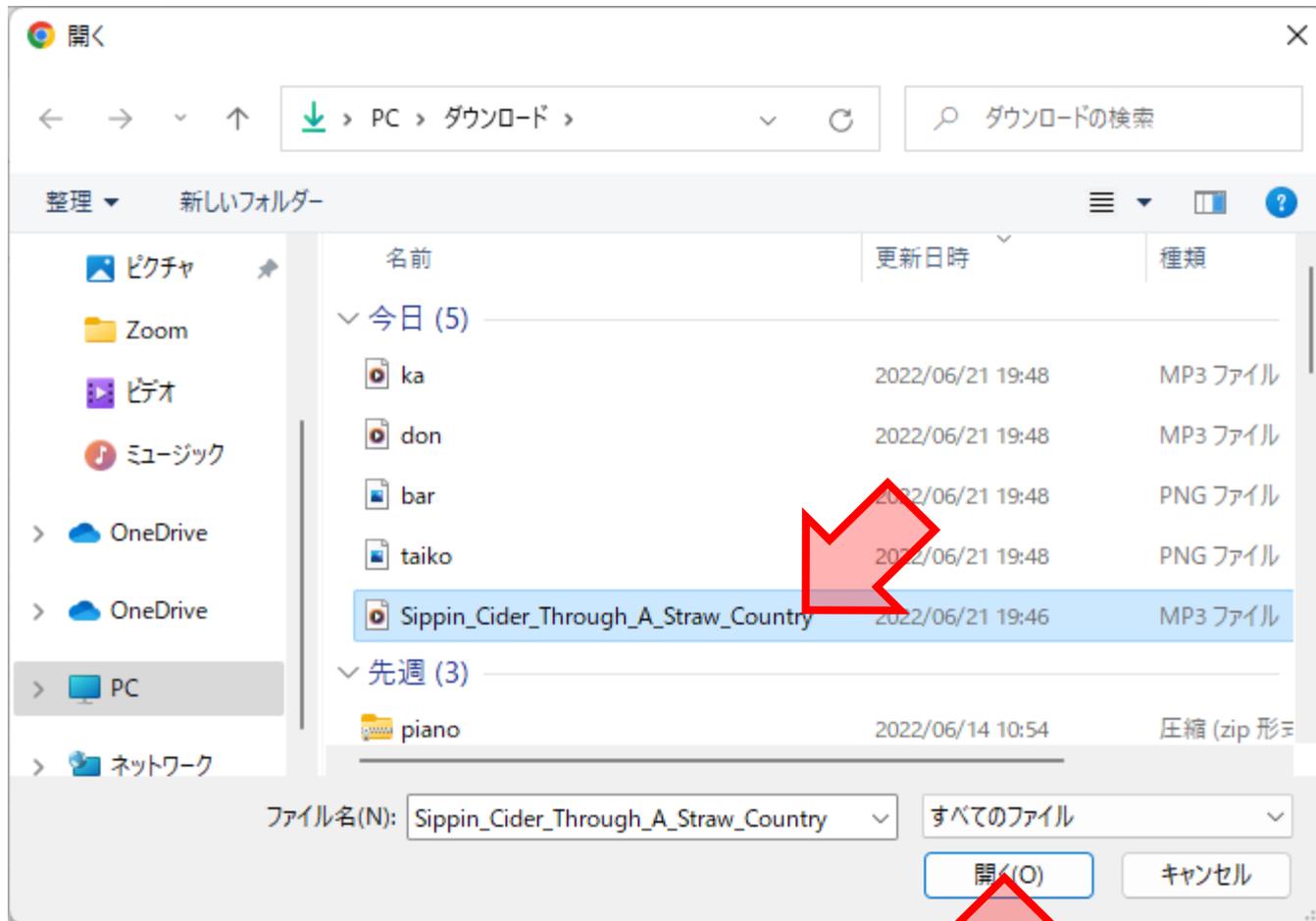
- Top Navigation:** MIT APP INVENTOR logo, and menu items: Projects, Connect, Build, Settings, Help, My Projects, View Trash, Guide, Report an Issue, English, and akiyolab6@gmail.com.
- Left Panel (User Interface):** A list of components under "User Interface". The "Media" section is expanded, showing options like Camcorder, Camera, FilePicker, ImagePicker, **Player** (highlighted with a red dot), Sound, SoundRecorder, SpeechRecognizer, TextToSpeech, Translator, and VideoPlayer.
- Center Canvas:** A mobile phone simulation with a "太鼓" (Taiko) title bar, a "スタート" (Start) button, and a large red circle with a black outline representing a taiko drum. A red arrow points from the "Player" component in the left panel to this red circle.
- Right Panel (Behavior):** A tree view of the app's components: VerticalArrangement1, HorizontalArrangement1, Button1, Canvas1, and **Player1** (highlighted). Below the tree are "Rename" and "Delete" buttons. The "Behavior" tab is active, showing properties for "Player1":
 - Loop:
 - PlayOnlyInForeground:
 - Source: None...
 - Volume: 50

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

曲のファイルを指定する

The screenshot displays the MIT App Inventor web interface. The top navigation bar includes the MIT App Inventor logo, menu items like 'Projects', 'Connect', 'Build', 'Settings', 'Help', 'My Projects', 'View Trash', 'Guide', 'Report an Issue', and user information. The main workspace is divided into three panels: 'User Interface' on the left, a central mobile device preview, and 'Behavior' on the right. The 'User Interface' panel shows a 'Media' section with various components, and the 'Player' component is highlighted. The mobile preview shows a screen with a '太鼓' (Taiko) title, a 'スタート' (Start) button, and a large red circle. The 'Behavior' panel shows the 'Source' dropdown menu for the 'Player1' component, with 'taiko.png' selected. A red box highlights the 'Source' dropdown and the 'Upload File...' button, with a red arrow pointing to the 'Upload File...' button. The bottom of the interface contains a 'Media' section with a 'taiko.png' file and a footer with 'Privacy Policy and Terms of Use' and 'Accessibility: accessibility.mit.edu'.

曲のファイルをアップロードする



音を追加する

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "音を追加する". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#6364562132631552". The interface features 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, the "Component palette" lists various components. The "Sound" component is highlighted in green, and a red dot on it has two red arrows pointing to the bottom of the central mobile app preview. The app preview shows a screen with a "スタート" button at the top, a large red circle in the center, and a black navigation bar at the bottom. Below the preview, the "Non-visible components" section shows "Player1", "Sound1", and "Sound2" (the latter is highlighted with a green box).

On the right, the "Media" panel shows a list of media files: "taiko.png" and "Sippin_C...untry.mp3". Below the list is an "Upload File ..." button. Above the list, there are "Rename" and "Delete" buttons.

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

音を設定する

ai2.appinventor.mit.edu/#6364562132631552

MIT APP INVENTOR

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

media

- Camcorder
- Camera
- FilePicker
- ImagePicker
- Player
- Sound
- SoundRecorder
- SpeechRecognizer
- TextToSpeech
- Translator
- VideoPlayer

Drawing and Animation

Maps

Charts

Data Science

Sensors

太鼓

スタート

Canvas1

Player1

Sound1

Sound2

Source

don.mp3...

don

Media

- taiko.png
- Sippin_C...untry.mp3
- don.mp3

Upload File ...

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

音を設定する

ai2.appinventor.mit.edu/#6364562132631552

MIT APP INVENTOR

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

media

- Camcorder
- Camera
- FilePicker
- ImagePicker
- Player
- Sound
- SoundRecorder
- SpeechRecognizer
- TextToSpeech
- Translator
- VideoPlayer

Drawing and Animation

Maps

Charts

Data Science

Sensors

太鼓

スタート

Canvas1

- Player1
- Sound1
- Sound2

Source

ka.mp3...

ka

Media

- taiko.png
- Sippin_C...untry.mp3
- don.mp3
- ka.mp3

Privacy Policy and Terms of Use 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, the URL is `ai2.appinventor.mit.edu/#6364562132631552`. The navigation bar includes 'Projects', 'Connect', 'Build', 'Settings', 'Help', 'My Projects', 'View Trash', 'Guide', 'Report an Issue', 'English', and the user email 'akiyolab6@gmail.com'. The 'User Interface' palette on the left lists various components, with 'Label' highlighted. The central Design view shows a mobile app with a '太鼓' header, a 'スタート' button, and a large red circle with a black outline. The 'Appearance' properties panel on the right shows settings for 'Label2', including 'FontSize' (14.0) and 'Text' (Text for Label2). A red arrow points from the 'Label' component in the palette to the 'Label2' component in the Design view. Another red arrow points from the 'Label2' component in the Design view to the 'Text' field in the 'Appearance' panel.

隠れてしまいましたが
この下に
Label12

Icon(こtaiko.pngを設定する

The screenshot shows the MIT App Inventor interface. At the top, a blue banner contains the title "Icon(こtaiko.pngを設定する". Below it, the browser address bar shows "ai2.appinventor.mit.edu/#6364562132631552". The MIT App Inventor navigation bar includes "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab6@gmail.com".

The main workspace is titled "Taiko" and contains a "Project Properties" dialog box. The dialog has tabs for "Screen1", "Add Screen...", "Remove Screen", "Project Properties", and "Publish to Gallery". The "Project Properties" tab is active, showing a "Palette" on the left with categories like "User Interface" and "Image". The "Image" category is selected, and the "Icon" property is highlighted with a red box. The value "taiko.png..." is entered in the text field. A red arrow points to the "Project Properties" tab, and a blue dashed arrow points from the text "taiko.png" to the input field.

Project Properties

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.

taiko.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 programmer must explicitly set it to "false" if Lisp syntax is desired. In older versions of App

CLOSE

前回同様，タップした場所の座標を
確認しつつココの値を決めよう

```
when Button1 .Click  
do call Player1 .Start
```

```
when Canvas1 .TouchDown
```

```
  x y  
do if  
  (get x - 160)^2 + (get y - 160)^2 < 10000  
then if  
  (get x - 160)^2 + (get y - 160)^2 < 10000  
  then call Sound1 .Play  
  else call Sound2 .Play  
set Label1 .Text to get x  
set Label2 .Text to get y
```

うまくいったら
Label1とLabel2は削除してOK

応用：音符（？）を流す
（１）演奏データに応じて
音符を流す

キャンバスを配置する

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "キャンバスを配置する". Below it, the browser address bar shows "ai2.appinventor.mit.edu/#6364562132631552". The main interface is divided into several panels:

- PaLETTE:** On the left, 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 in green, with a red arrow pointing to it.
- Viewer:** In the center, a mobile phone simulator shows a screen with a "スタート" button and a large red circle. A red arrow points from the "Canvas" in the palette to a canvas component on the button.
- All Components:** On the right, a tree view shows the project structure: "Screen1" containing "VerticalArrangement1", "HorizontalArrangement1", "Button1", "Canvas2", "Canvas1", "Label1", "Label2", "Player1", "Sound1", and "Sound2". "Canvas2" is highlighted in green.
- Properties:** On the far right, the "Properties" panel for "Canvas2 (Canvas)" is shown. The "Appearance" section is expanded, and the "Height" and "Width" fields are highlighted with a red box. Blue dashed arrows point from the values "40" and "180" in the "All Components" panel to these fields.

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

ワクを配置する

The screenshot displays the MIT App Inventor web interface for a project named "Taiko". The interface is divided into several panels:

- PaLETTE:** A sidebar on the left containing various component categories such as "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", "Sensors", "Social", and "Storage". The "ImageSprite" component is highlighted in the "Drawing and Animation" section.
- Viewer:** A central area showing a mobile phone simulation. A red arrow points from the "ImageSprite" component in the palette to a small vertical bar on the phone's screen. The bar has the text "スタート" (Start) written on it.
- All Components:** A tree view on the right showing the hierarchy of components on the screen, including "Screen1", "VerticalArrangement1", "HorizontalArrangement1", "Button1", "Canvas2", "ImageSprite1", "Canvas1", "Label1", "Label2", "Player1", "Sound1", and "Sound2". A blue arrow points from "ImageSprite1" to the "Properties" panel.
- Properties:** A panel on the far right showing the configuration options for the selected "ImageSprite1" component. Two red boxes highlight specific settings:
 - The first box highlights the "Width" property, which is set to "8 pixels...". A blue arrow points to this box with the text "8 pixels...".
 - The second box highlights the "Picture" property, which is set to "bar.png...". A blue arrow points to this box with the text "bar.png".

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

音符を配置する

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "音符を配置する". Below it is the browser address bar with the URL "ai2.appinventor.mit.edu/#6364562132631552". The MIT App Inventor logo and navigation menu are visible. The main workspace is titled "Taiko" and includes buttons for "Screen1", "Add Screen...", "Remove Screen", "Project Properties", and "Publish to Gallery".

The interface is divided into four main panels:

- Palette:** A list of components including "Ball", "Canvas", "ImageSprite", "Maps", "Charts", "Data Science", "Sensors", "Social", and "Storage". A red dot is placed on the "Ball" component, with a red arrow pointing to its position on the drum in the viewer.
- Viewer:** A mobile phone simulator showing a Taiko game. The screen has a black header with the text "太鼓" and a "スタート" button. A red dot is placed on the drum's surface, with a red arrow pointing to it from the "Ball" component in the palette.
- All Components:** A tree view showing the hierarchy of components on the screen, including "Screen1", "VerticalArrangement1", "HorizontalArrangement1", "Button1", "Canvas2", "ImageSprite1", "Ball1", "Canvas1", "Label1", "Label2", "Player1", "Sound1", and "Sound2".
- Properties:** A panel for configuring the selected "Ball1" component. It shows "Appearance" properties like "PaintColor" (Default), "Radius" (5), and "Visible" (checked). It also shows "Behavior" properties like "Enabled" (checked) and "Heading" (1.0).

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

音符の設定をおこなう

MIT APP INVENTOR

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

Layout Media Drawing and Animation

- Ball
- Canvas
- ImageSprite

Maps Charts Data Science Sensors Social Storage Connectivity LEGO® MINDSTORMS® Experimental Extension

太鼓

スタート

HorizontalArrangement1

- Button1
- Canvas2
- ImageSprite1
- Ball1
- Canvas1
- Label1
- Label2
- Player1
- Sound1
- Sound2

PaintColor [?] Red

Radius [?] 8

Visible [?]

X [?] 150

Y [?] 10

Z [?] 1.0

▼ Behavior

Enabled [?]

Heading [?] 180

Interval [?] 110

OriginAtCenter [?]

Media

- Sippin_C...untry.mp3
- don.mp3

Red →

8 →

外す →

150 →

10 →

180 →

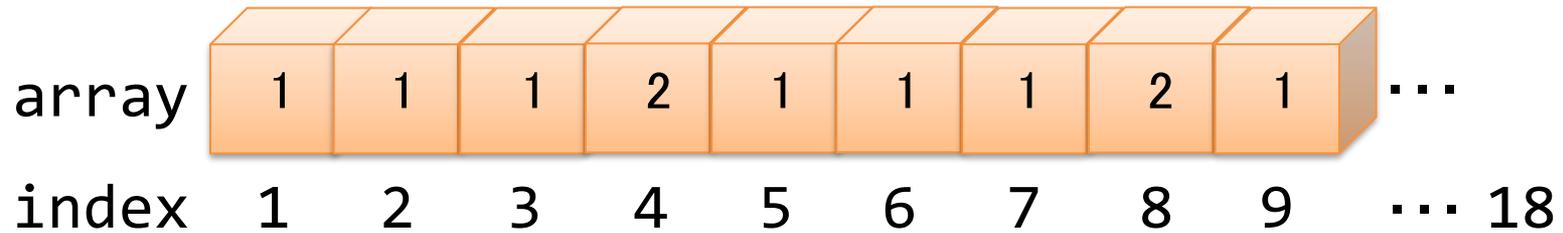
※ →

※Intervalは音符の速さ。小さい方が速い。

最初122で試し、各自の実行環境に合わせて調整すること

音符を動かすための処理

演奏データを**リスト**に入れて順番に読み込んでいく



```
initialize global array to split text "1,1,1,2,1,1,1,2,1,1,1,2,1,1,1,2,1,1" at ","
```

演奏データ
(1が赤, 2が青)

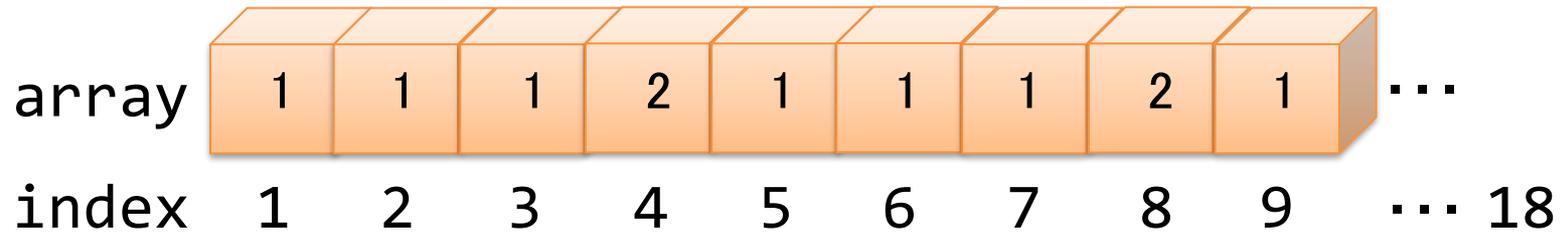
```
initialize global index to 1
```

```
when Button1.Click
do
  call Player1.Start
  set Ball1.X to 150
  set Ball1.Speed to 8
  set Ball1.Visible to true
  set global index to 1
  if select list item list get global array = 1 index get global index
  then set Ball1.PaintColor to red
  else set Ball1.PaintColor to cyan
```

既にある
when Button1.Click
に追加

音符を動かすための処理

演奏データを**リスト**に入れて順番に読み込んでいく



```
when Ball1 .CollidedWith
  other
do
  set Ball1 . X to 150
  if get global index = 18
  then
    set Ball1 . Speed to 0
    set Ball1 . Visible to false
  else if get global index < 18
  then
    set global index to get global index + 1
  if select list item list get global array = 1
    index get global index
  then
    set Ball1 . PaintColor to red
  else
    set Ball1 . PaintColor to cyan
```

データの数

もしindexが18だったら
ゲーム終了

もしindexが18より小さかったら
indexに1を足す

もしarrayのindex番目が1だったら
音符の色を赤にする

そうでなければ
音符の色を青にする

ここまでは全員がんばろう

続きは任意
ウェブの講義資料を見ながら
やってみよう

WORDでレポートを書く

課題レポートについて

- レポートの書き方
- レポートの構成
- 第1回レポートについて
- レポート作成上の注意

課題レポートについて

- レポートの書き方
 - Microsoft Wordで作成する
 - レポートの冒頭に、**科目名・タイトル・所属・学生番号・氏名・提出年月日**を入れる
 - 決められた構成で書く
 - サンプルをよく見てまねて書く
 - 提出方法・期限を守る
 - 困ったことがあったら**期限前に**担当教員に相談する → 1G2G: akiyo@mail.tohoku-gakuin.ac.jp
3G4G: hiro_m@mail.tohoku-gakuin.ac.jp

課題レポートについて

- レポートの構成
 1. アプリの概要
 - 特徴・機能など詳細に書く。
 2. デザイナ画面
 - 各コンポーネントの説明も入れる。
 3. ブロックエディタ画面
 - (変数があれば) 各変数の説明も入れる。
 4. 実行画面・操作方法
 5. 工夫した点
 - 「なし」はダメ。何か工夫すること。

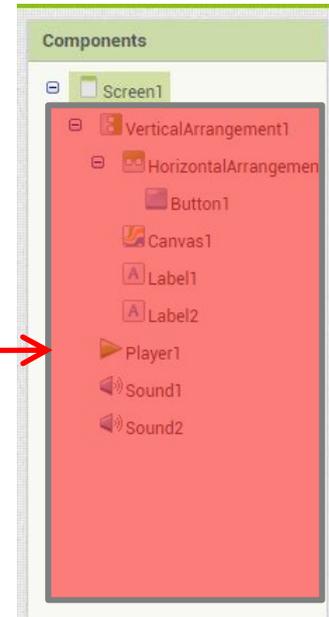
第1回課題レポートについて

- タイトル
 - 楽器アプリの制作
- 内容
 - 第8回・第9回で制作したアプリのうち、より頑張った方についてレポートを作成する
- 提出方法
 - 講義用ウェブサイトからレポートとアプリをアップロードする
 - パスワードはmanabaの「成績」の「レポート提出用パスワード」に記載されている
- 提出期限
 - 12月3日（火） 23:59

レポート作成上の注意

- コンポーネントの表には**ここ**にあるものすべて挙げること。
- 「コンポーネントの説明」や「操作説明」が丸ごと抜けている人が毎年数名いる。大きな減点となるので注意すること。また「変数の説明」の対象は**このブロック**を使って作ったすべての変数なので抜けないように気を付ける。

- 「工夫した点」を必ず挙げること。画像や音の差し替えを工夫した点に含めても良いが、最低でも一つは「**プログラム上の工夫**」があること。
- 「工夫した点」については、**(プレイしなくても読んだだけで) 意味が伝わるように特に丁寧に説明を書くこと。**
- レポートは感想文ではないので**感想を書いてはいけない。**
 - 「～できてよかった」「大変だった」「難しかった」など



応用：音符（？）を流す （２）スコア表示

スコア表示用ラベルの設置

The screenshot shows the MIT App Inventor web interface. At the top, the URL is `ai2.appinventor.mit.edu/#6364562132631552`. The navigation bar includes 'Projects', 'Connect', 'Build', 'Settings', 'Help', 'My Projects', 'View Trash', 'Guide', 'Report an Issue', 'English', and 'akiyolab6@gmail.com'. The 'User Interface' panel on the left lists various components, with 'Label' highlighted in green. A red arrow points from the 'Label' component to the 'Appearance' panel on the right. In the 'Appearance' panel, the 'Text' field is highlighted with a red box and contains the value '0'. A blue arrow points from the '0' in the 'Text' field to the '0' in the 'Media' panel. The central canvas shows a mobile app preview with a '太鼓' (Taiko) title, a 'スタート' (Start) button, and a large red circle with a black outline. The 'Media' panel at the bottom shows a '0' in a text input field, with a blue arrow pointing from it to the 'Text' field in the 'Appearance' panel.

スコアを計算し表示する処理

本当は音符がワクに衝突した際にスコア判定が行われるべきだが、プログラムが複雑になるのでここではあえてタップの際に判定を行っている。

```
initialize global score to 0

when Canvas1 TouchDown
  do
    if
      (get x - 160)^2 + (get y - 160)^2 < [ ]
    then
      if
        (Ball1 X >= 30 and Ball1 X <= 38)
      then
        set global score to (get global score + 10)
      else
        call Sound2.Play
    end
  end
  set Label1.Text to (get global score)
```

ここの値は適当に調整する
何段階か（良・可・不可など）に分けてもよい
「ドン」がうまくいったら「カツ」にも追加
本当は色の判定も必要

```
when Button1 Click
  do
    call Player1.Start
    set Ball1.X to 150
    set Ball1.Speed to 8
    set Ball1.Visible to true
  end
  set global score to 0
```