

プログラミング概論

第9回 2023年11月15日

App Inventorによる
Androidアプリ開発の実践
(4) 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

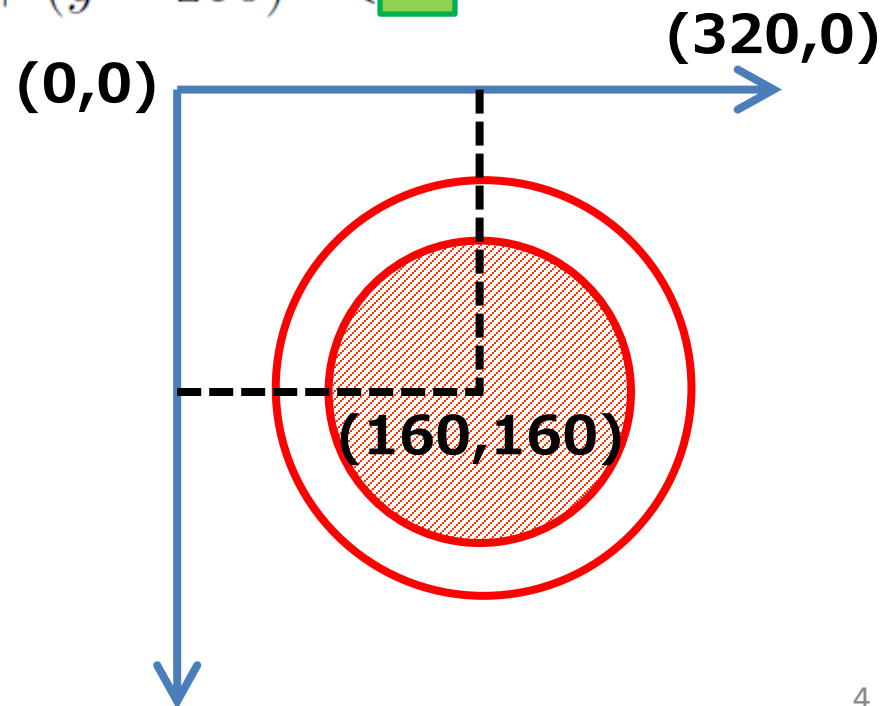
$$(x - 160)^2 + (y - 160)^2 < \square^2$$

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

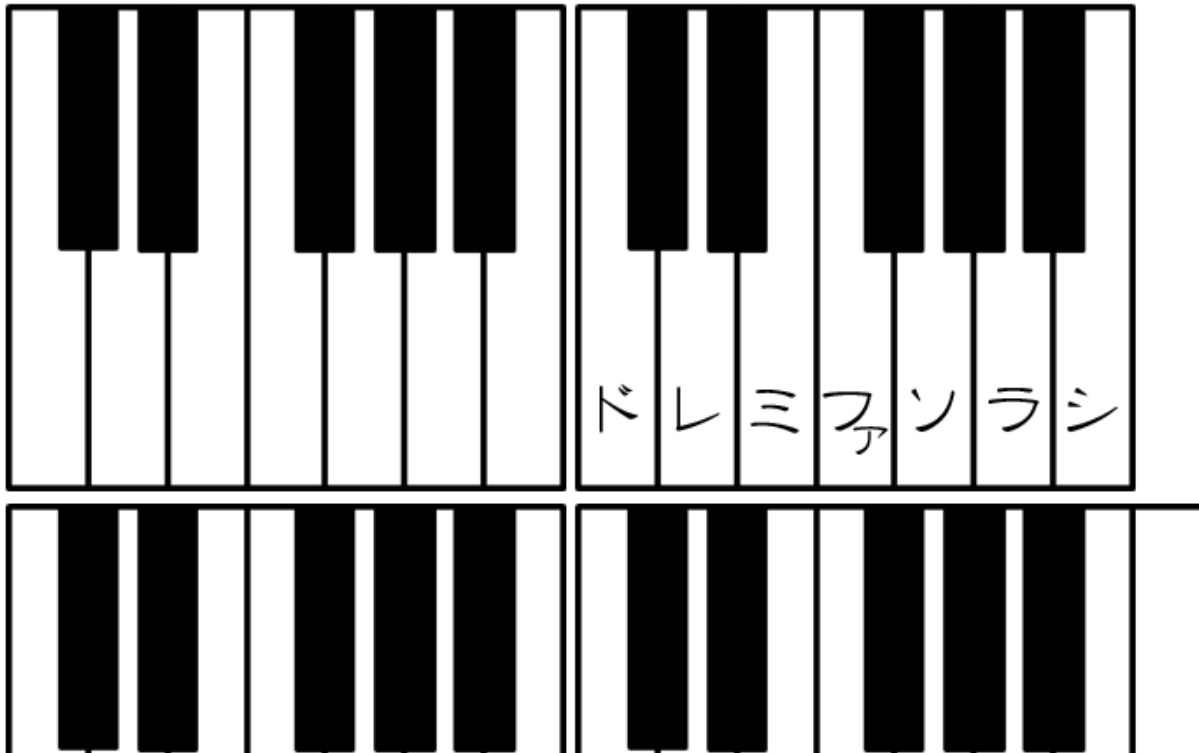
曲のファイルをダウンロードする

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 URL `mu-tech.org/Traditional/kumahtml.html`. The page features a grid of music download options. The first column lists music styles: 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. The second column contains 'MIDI' buttons, and the third and fourth columns contain 'MP3' and 'MP4' buttons respectively. A context menu is open over the 'MP3' button for 'カントリー'. The menu items 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...**, リンクのアドレスをコピー, 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 で画像を検索, and 検証. Red arrows point to the 'MP3' button and the '名前を付けてリンク先を保存...' menu item.

①カントリーのMP3のボタンを右クリック

②名前を付けてリンク先を保存

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

- [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 © 2023 Akiyo Matsumoto Lab.

「太鼓の達人」もどきを作る

新しいプロジェクトをつくる

MIT APP INVENTOR

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

New project New Folder Move... Move To Trash View Trash Login to Gallery Publish to Gallery

Projects

<input type="checkbox"/> Name	Date Created	Date Modified
<input type="checkbox"/> Gakki	Nov 7, 2023, 11:23:20 PM	Nov 7, 2023, 11:41:29 PM
<input type="checkbox"/> Kazuate	Nov 1, 2023, 11:43:06 AM	Nov 1, 2023, 11:50:14 AM
<input type="checkbox"/> Omikuji	Oct 25, 2023, 1:08:14 PM	Nov 1, 2023, 11:07:51 AM

Create new App Inventor project

Project name: Taiko

今回は「Taiko」

Cancel OK

Privacy Policy and Terms of Use

アプリのタイトルを変える

The screenshot displays 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 this is a browser window showing the URL "ai2.appinventor.mit.edu/#4549048126013440". The interface includes a navigation menu with options like "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", and "Report an Issue". On the left, a sidebar lists various components such as "TextBox", "TimePicker", "WebView", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", "Sensors", "Social", "Storage", "Connectivity", "LEGO® MINDSTORMS®", "Experimental", and "Extension". The central workspace shows a mobile app preview with a black navigation bar. To the right of the preview is a "Media" section with "Rename", "Delete", and "Upload File ..." buttons. On the far right, a settings panel is visible, with the "Title" property highlighted in a red box and containing the text "太鼓". A blue dashed arrow points from the Japanese text "「太鼓」" to this "Title" field. Below the settings panel, the "Application" section is partially visible, showing the "AppName" property set to "Taiko".

[Privacy Policy and Terms of Use](#)

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 it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". The main interface is divided into several panels:

- Palettes:** On the left, there are palettes for "User Interface" and "Layout". The "Layout" palette is expanded, showing options like "HorizontalArrangement", "HorizontalScrollArrangement", "TableArrangement", "VerticalArrangement", and "VerticalScrollArrangement". A red arrow points from the "VerticalArrangement" option to the viewer.
- Viewer:** The central area shows a mobile phone simulation. A grey rectangular component is placed on the screen, highlighted with a green border. A red arrow points from the "VerticalArrangement" option in the palette to this component. Above the viewer, there are controls for "Display hidden components in Viewer" (unchecked) and "Phone size (505,320)".
- Components:** On the right, a list shows the components on the screen: "Screen1" and "VerticalArrangement1".
- Properties:** On the far right, the "Properties" panel for "VerticalArrangement1" is visible. It includes sections for "Appearance" with settings for "AlignHorizontal" (Left: 1), "AlignVertical" (Top: 1), "BackgroundColor" (Default), "Height" (Automatic...), "Width" (Automatic...), "Image" (None...), and "Visible" (checked).

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

横に部品を並べる

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "横に部品を並べる". Below the banner is the browser address bar showing the URL "ai2.appinventor.mit.edu/#4549048126013440". 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 four panels: "Palette", "Viewer", "Components", and "Properties".

- Palette:** Shows a search bar and categories like "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", and "Sensors". Under "Layout", "HorizontalArrangement" is highlighted with a red dot and a red arrow pointing to the viewer.
- Viewer:** Displays a mobile device screen with a status bar showing "9:48" and a header with the text "太鼓". A gray rectangular component is placed on the screen, outlined in green.
- Components:** Shows a tree view with "Screen1" containing "VerticalArrangement1" and "HorizontalArrangement1".
- Properties:** Shows the properties for "HorizontalArrangement1", including "Appearance" settings like "AlignHorizontal" (Left), "AlignVertical" (Top), "Height" (Automatic), "Width" (Automatic), and "Image" (None).

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

演奏開始ボタンをつくる

The screenshot displays the MIT App Inventor web interface. On the left, the 'Component Palette' lists various widgets, with 'Button' highlighted. A red arrow points from the 'Button' widget to a 'スタート' button placed on a mobile device preview in the center. The preview shows a drum application with the title '太鼓' and a 'スタート' button. 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」' to the 'Text' property field. The interface also shows a 'HorizontalArrangement' container and a 'Media' section with an 'Upload File...' button.

[Privacy Policy and Terms of Use](#)

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, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". 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 "akiyolab5@gmail.com".

The main workspace is divided into several panels:

- Palette:** A search bar and a list of component categories including "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", "Sensors", "Social", and "Storage". The "Canvas" component is highlighted in green, and a red arrow points from it to the viewer.
- Viewer:** A mobile phone simulator showing a screen with the title "太鼓" and a "スタート" button. A red arrow points from the "Canvas" component in the palette to a small Canvas icon on the screen.
- Components:** A tree view showing the hierarchy of components: "Screen1" contains "VerticalArrangement1", which contains "HorizontalArrangement1", which contains "Button1" and "Canvas1".
- Properties:** A panel for the selected "Canvas1 (Canvas)" component, showing properties such as "Appearance", "BackgroundColor", "BackgroundImage", "FontSize", "Height", "Width", "LineWidth", "PaintColor", and "TextAlignment".

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

キャンバスに画像をセットする

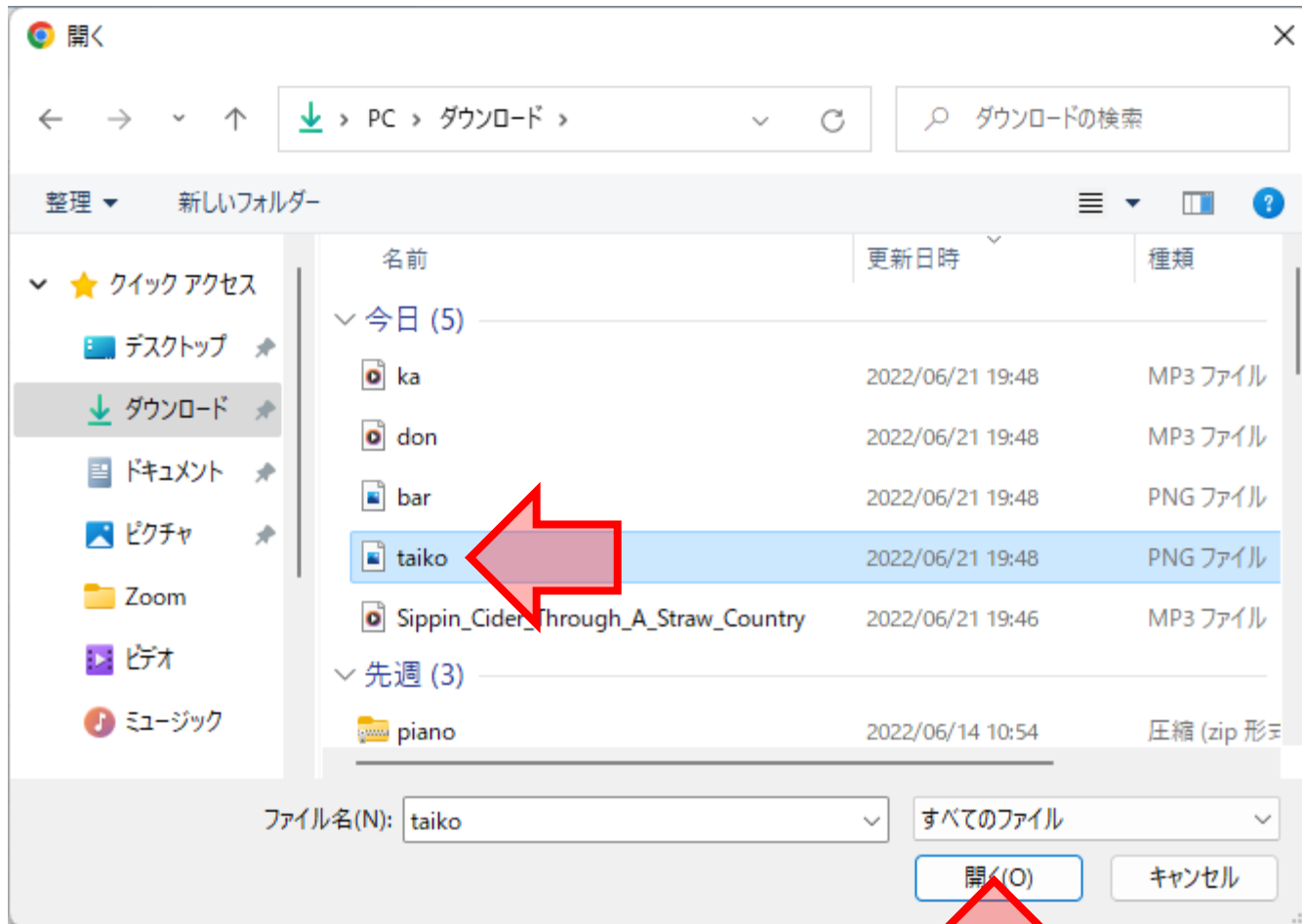
The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "キャンバスに画像をセットする". Below the banner is the browser address bar showing the URL "ai2.appinventor.mit.edu/#4549048126013440". The interface includes a navigation bar with "MIT APP INVENTOR" and various menu items like "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab5@gmail.com".

The main workspace is divided into several panels:

- Palettes:** On the left, there are palettes for "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", "Sensors", "Social", and "Storage". The "Drawing and Animation" palette is expanded, showing "Ball", "Canvas", and "ImageSprite".
- Viewer:** The central panel shows a mobile device simulation. The screen displays the text "太鼓" (Taiko) and a "スタート" (Start) button. A small "Canvas" component is visible on the screen, highlighted with a green border.
- Components:** The right panel shows a tree view of the components on the screen, including "Screen1", "VerticalArrangement1", "HorizontalArrangement1", "Button1", and "Canvas1".
- Properties:** The rightmost panel shows the properties for the selected "Canvas1" component. The "Appearance" section is expanded, showing "BackgroundColor" (set to "Default") and "BackgroundImage" (set to "None"). A red box highlights the "BackgroundImage" dropdown menu, and a red arrow points to the "Upload File ..." button below it.

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

画像をアップロードする



高さと幅を設定する

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "高さと幅を設定する". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". 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 the user email "akiyolab5@gmail.com".

The main workspace is divided into three sections:

- Left Panel (User Interface):** Lists various components such as "Ball", "Canvas", "ImageSprite", "Maps", "Charts", "Data Science", "Sensors", "Social", "Storage", "Connectivity", "LEGO® MINDSTORMS®", and "Experimental".
- Center Panel (Preview):** Shows a mobile phone simulation with a status bar at the top displaying "太鼓" and "9:48". Below the status bar is a "スタート" button. The main area of the phone contains a large red circle with a black outline.
- Right Panel (Properties):** Shows the "Appearance" properties for the selected "Canvas1" component. The "Height" and "Width" fields are highlighted with a red box and set to "320 pixels...". Blue dashed arrows point from the number "320" to these fields.

At the bottom of the interface, there is a "Privacy Policy and Terms of Use" link.

演奏機能を追加する

The screenshot displays 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, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". The main interface is divided into several sections:

- Navigation Bar:** Includes "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab5@gmail.com".
- Media Panel (Left):** Lists various components under the "Media" category, including Camcorder, Camera, FilePicker, ImagePicker, **Player** (highlighted in green), Sound, SoundRecorder, SpeechRecognizer, TextToSpeech, Translator, and VideoPlayer. A red arrow points from the "Player" component to the mobile app preview.
- Mobile App Preview (Center):** Shows a mobile interface with a title bar "太鼓", a "スタート" button, and a large red circle with a black outline representing a taiko drum.
- Component Palette (Right):** Shows the "Player1" component selected on the "Canvas1". Below it, the "Media" section lists "taiko.png" with an "Upload File ..." button.
- Properties Panel (Far Right):** Displays properties for the selected component, including "PlayOnlyInForeground" (checked), "Source" (set to "None..."), and "Volume" (set to "50").

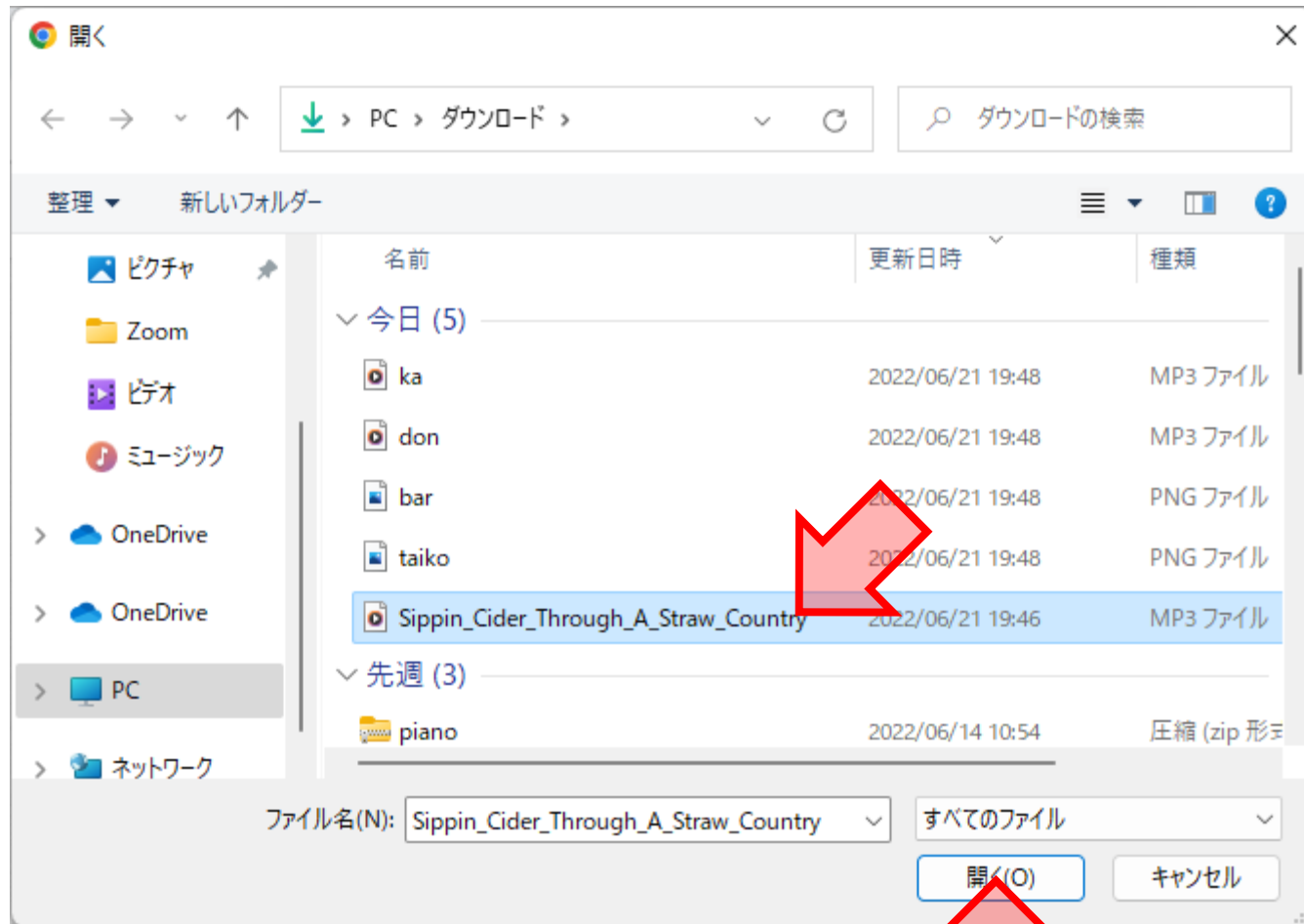
At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

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 'Projects', 'Connect', 'Build', 'Settings', 'Help', 'My Projects', 'View Trash', 'Guide', 'Report an Issue', 'English', and the user email 'akiyolab5@gmail.com'. The left sidebar lists various components under 'Media', with 'Player' selected. 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 right sidebar shows the 'Properties' panel for the selected 'Player1' component. The 'Source' dropdown menu is open, showing 'None' and 'taiko.png'. A red box highlights this dropdown, and a red arrow points to the 'taiko.png' option. Below the dropdown are 'Upload File ...', 'Cancel', and 'OK' buttons. At the bottom of the interface, there is a 'Media' section with a 'taiko.png' thumbnail and an 'Upload File ...' button.

[Privacy Policy and Terms of Use](#)

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/#4549048126013440". 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 three sections:

- Component Palette (Left):** Lists various components such as Camera, FilePicker, ImagePicker, Player, Sound, SoundRecorder, SpeechRecognizer, TextToSpeech, Translator, and VideoPlayer. The "Sound" component is highlighted with a red dot, and two red arrows point from this dot to the "Sound" component in the "Non-visible components" section at the bottom.
- Mobile App Preview (Center):** Shows a mobile phone interface with a "スタート" button at the top and a large red circle in the center.
- Component Inspector (Right):** Shows the properties for the selected "Sound" component. It lists "Sound1" and "Sound2". Below these are "Rename" and "Delete" buttons. The "Media" section shows a file named "taiko.png" with a download icon and an "Upload File ..." button.

At the bottom of the interface, there is a "Non-visible components" section with icons for "Player1", "Sound1", and "Sound2". A link for "Privacy Policy and Terms of Use" is also visible.

音を設定する

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "音を設定する". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". The MIT App Inventor navigation bar includes "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab5@gmail.com".

The main workspace is divided into three sections:

- Left Panel (Media):** Lists various components such as Camcorder, Camera, FilePicker, ImagePicker, Player, Sound (highlighted), SoundRecorder, SpeechRecognizer, TextToSpeech, Translator, and VideoPlayer. Below this are categories like Drawing and Animation, Maps, Charts, Data Science, and Sensors.
- Center Panel (Preview):** Shows a mobile app preview with a black header labeled "太鼓" (Taiko), a "スタート" (Start) button, and a large red circle with a black outline on a white background.
- Right Panel (Properties):** Shows the "Sound1" component selected in the "Canvas1" workspace. The "Source" property is highlighted with a red box and contains the text "don.mp3...". A red arrow points from "Sound1" to this box. Below the "Source" box, a blue dashed arrow points to the text "don".

At the bottom of the right panel, there is a "Media" section with a list of files: "taiko.png", "Sippin_C...rdownload", and "don.mp3". An "Upload File ..." button is visible below the list.

At the bottom center of the interface, there is a link for "Privacy Policy and Terms of Use".

音を設定する

The screenshot shows the MIT App Inventor web interface. At the top, a blue banner contains the title "音を設定する". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". The MIT App Inventor navigation bar includes "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", "Report an Issue", "English", and "akiyolab5@gmail.com".

The main workspace is divided into three panels:

- Left Panel (Media Library):** Lists various components like Camcorder, Camera, FilePicker, ImagePicker, Player, Sound (highlighted), SoundRecorder, SpeechRecognizer, TextToSpeech, Translator, and VideoPlayer. Below this are sections for "Drawing and Animation", "Maps", "Charts", "Data Science", and "Sensors".
- Center Panel (Mobile Preview):** Displays a mobile app interface with a black header containing the text "太鼓" (Taiko), a button labeled "スタート" (Start), and a large red circle with a black outline on a white background.
- Right Panel (Properties and Media):** Shows the "Canvas1" workspace with components "Player1", "Sound1", and "Sound2" (highlighted with a red arrow). Below the components are "Rename" and "Delete" buttons. The "Media" section lists files: "taiko.png", "Sippin_C...rdownload", "don.mp3", and "ka.mp3".

On the far right, a red box highlights the "Source" property of the selected "Sound2" component, which contains the text "ka.mp3...". A blue dashed arrow points from the "ka.mp3" file in the Media section to this text. A red arrow also points from the "Sound2" component in the workspace to the "Source" property.

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

座標を表示するところをつくる

The screenshot shows the MIT App Inventor web interface. The top navigation bar includes 'MIT APP INVENTOR', 'Projects', 'Connect', 'Build', 'Settings', 'Help', 'My Projects', 'View Trash', 'Guide', 'Report an Issue', 'English', and 'akiyolab5@gmail.com'. The 'User Interface' palette on the left lists various components: Button, CheckBox, DatePicker, Image, Label, ListPicker, ListView, Notifier, PasswordTextBox, Slider, Spinner, Switch, TextBox, and WebViewer. The 'Label' component is highlighted in green. The central design view shows a mobile app interface with a black header containing the text '太鼓' (Taiko) and a 'スタート' (Start) button. Below the button is a large red circle with a black outline. The right-hand 'Appearance' panel shows settings for the selected 'Label2' component, including 'BackgroundColor' (None), 'FontBold' (unchecked), 'FontItalic' (unchecked), 'FontSize' (14.0), 'FontTypeface' (default...), 'HTMLFormat' (unchecked), 'HasMargins' (checked), 'Height' (Automatic...), 'Width' (Automatic...), 'Text' (Text for Label2), and 'TextAlignment'.

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 displays the MIT App Inventor web interface. At the top, a blue banner contains the title "Icon(こtaiko.pngを設定する". Below the banner, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". The interface includes a navigation menu with options like "Projects", "Connect", "Build", "Settings", "Help", "My Projects", "View Trash", "Guide", and "Report an Issue". The main workspace is divided into several panels:

- Left Panel:** "User Interface" section with a search bar and a list of components: Button, CheckBox, DatePicker, and Image.
- Center Panel:** A mobile device simulator showing a screen with the text "太鼓" (Taiko) and a "スタート" (Start) button.
- Right Panel:** A tree view of the application structure, including "Screen1", "VerticalArrangement1", "HorizontalArrangement1", "Button1", "Canvas1", "Label1", and "Label2". A red arrow points to "Screen1".
- Bottom Right Panel:** The "Application" settings panel, where the "Icon" field is highlighted with a red box and contains the text "taiko.png...". A blue dashed arrow points from the text "taiko.png" to this field.

At the bottom of the page, there is a link for "Privacy Policy and Terms of Use".

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 the URL "ai2.appinventor.mit.edu/#4549048126013440". 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 four panels:

- Palette:** On the left, it lists various components. A red arrow points from the "Canvas" component in the "Drawing and Animation" section to the viewer.
- Viewer:** In the center, a mobile phone simulator displays the app. A red box highlights a "Canvas" component on the screen, with a red arrow pointing to it from the palette. The text "太鼓" (Taiko) is visible above the canvas, and "スタート" (Start) is visible below it.
- Components:** On the right, a tree view shows the hierarchy of components. "Canvas2" is highlighted in green. Blue dashed arrows point from "40" and "180" to the "Height" and "Width" properties of "Canvas2" in the Properties panel.
- Properties:** On the far right, the "Properties" panel for "Canvas2 (Canvas)" is shown. The "Appearance" section is expanded, and the "Height" and "Width" properties are highlighted with a red box. The "Height" is set to "40 pixels..." and the "Width" is set to "180 pixels...".

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

ワクを配置する

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "ワクを配置する". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". 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 "akiyolab5@gmail.com".

The main workspace is divided into four panels:

- Palette:** Lists various components under categories like "User Interface", "Layout", "Media", "Drawing and Animation", "Maps", "Charts", "Data Science", "Sensors", "Social", and "Storage". The "ImageSprite" component is highlighted in green, with a red arrow pointing to its position in the Viewer.
- Viewer:** Shows a mobile app preview. The top bar contains the text "太鼓" and a "スタート" button. A red arrow points from the "ImageSprite" component in the Palette to a small vertical bar on the "スタート" button.
- Components:** A tree view showing the app's structure. "ImageSprite1" is highlighted in green, with a blue arrow pointing to it from the "bar.png" label.
- Properties:** Shows the configuration for "ImageSprite1". The "Appearance" section is expanded, showing "Width" set to "8 pixels..." and "Picture" set to "bar.png...". The "Visible" checkbox is checked. The "Position" section shows "X" set to "20" and "Y" set to "0".

Annotations in blue text and arrows indicate specific values: "8" points to the Width property, "bar.png" points to the Picture property, "20" points to the X coordinate, and "0" points to the Y coordinate. Red boxes highlight the Width, Picture, and X/Y coordinate settings.

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

音符を配置する

The screenshot displays the MIT App Inventor web interface. At the top, a blue banner contains the title "音符を配置する". Below it, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". 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 "akiyolab5@gmail.com".

The main workspace is divided into four panels:

- Palette:** Lists various components. The "Ball" component is highlighted with a red dot, and a red arrow points from it to the "Ball1" component in the Components panel.
- Viewer:** Shows a mobile app preview. The app has a title bar with "太鼓" and a "スタート" button. A red box highlights a small black square on the screen, which is the "Ball1" component being placed.
- 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:** Shows the properties for the selected "Ball1 (Ball)" component. The "Appearance" section includes "PaintColor" (Default), "Radius" (5), and "Visible" (checked). The "Behavior" section includes "Enabled" (checked) and "Heading" (1.0).

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

音符の設定をおこなう

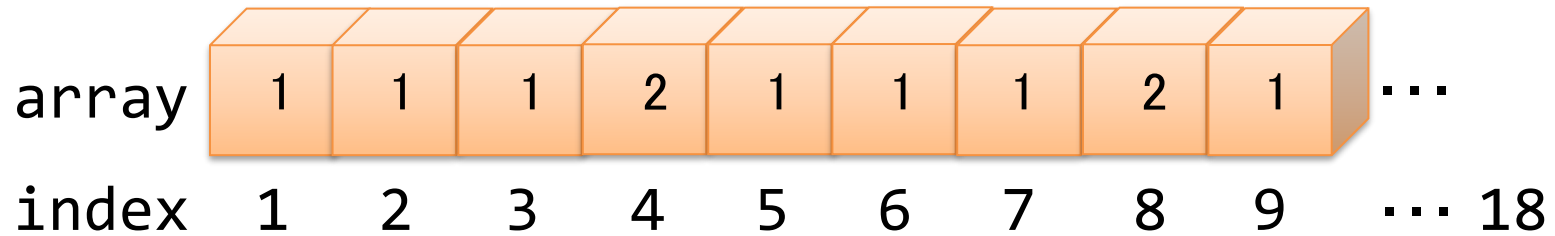
The screenshot shows the MIT App Inventor interface. The central canvas displays a mobile app with a large red circle and a black outline, representing a taiko drum. The interface includes a left sidebar with categories like Layout, Media, Drawing and Animation, Maps, Charts, Data Science, Sensors, Social, Storage, Connectivity, LEGO® MINDSTORMS®, Experimental, and Extension. The right sidebar shows the Properties panel for a selected object, with various settings like PaintColor, Radius, Visible, X, Y, Z, Behavior, Heading, and Interval. Annotations in blue text point to specific settings: 'Red' points to PaintColor, '8' to Radius, '外す' (remove) to Visible, '150' to X, '10' to Y, '180' to Heading, and '※' (note) to Interval. The Interval setting is highlighted with a red box. The top navigation bar includes Project, Connect, Build, Settings, Help, My Projects, View Trash, Guide, Report an Issue, English, and a user email address.

※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" at ","
```

演奏データ
(1が赤, 2が青)

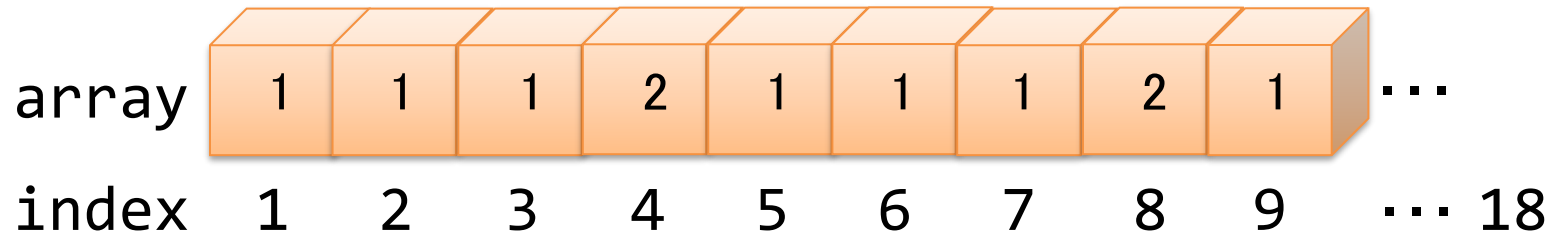
```
initialize global index to 1
```

```
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

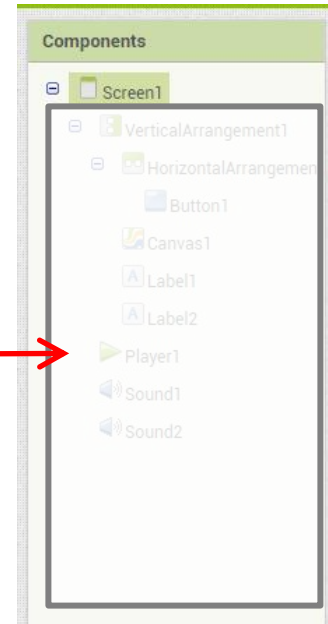
- レポートの構成
 1. アプリの概要
 - 特徴・機能など詳細に書く。
 2. デザイナ画面
 - 各コンポーネントの説明も入れる。
 3. ブロックエディタ画面
 - (変数があれば) 各変数の説明も入れる。
 4. 実行画面・操作方法
 5. 工夫した点
 - 「なし」はダメ。何か工夫すること。

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
 - 11月28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が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 displays the MIT App Inventor web interface. At the top, a blue banner contains the title "スコア表示用ラベルの設置". Below the banner, the browser address bar shows the URL "ai2.appinventor.mit.edu/#4549048126013440". The main interface is divided into several sections:

- User Interface:** A list of components on the left. The "Label" component is highlighted in green, and a red arrow points from it to the "Label1" component in the design view.
- Design View:** A central area showing a mobile app preview. The app has a title bar with "太鼓" and a "スタート" button. A large red circle is centered on the screen. A small "0" label is positioned at the bottom left of the screen, with a red arrow pointing to it from the "Label" component in the User Interface list.
- Properties Panel:** On the right, the "Appearance" properties for "Label1" are shown. The "Text" property is highlighted with a red box and contains the value "0".

At the bottom of the interface, there is a link for "Privacy Policy and Terms of Use".

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
        (get x - 160)^2 + (get y - 160)^2 < [ ]
      then
        call Sound1.Play
        if
          30 ≤ Ball1.X and Ball1.X ≤ 38
        then
          set global score to (get global score + 10)
        else
          call Sound2.Play
      set Label1.Text to (get global score) } 追加
```

追加

追加

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

追加

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