

(1) Drawing for Beginners



Throughout this whole course, these worksheets will guide you through the Composition of your first app. **Please read them carefully, as they are a great help for your work!**

Pay attention to the symbols below, which...

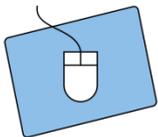
- × will structure your work and point out milestones, 
- × offer hints and point out important facts or difficult tasks, 
- × give you your assignments and tasks! 



Today you will compose your own drawing app step by step. You will use the built-in camera to take photos and then use them as background for your drawings. The first step is to get to know the basic utilities of the App Inventor. You will:

- ... use the **Designer** to design the looks of your app and compose the necessary components and after that
- ... use the **Blocks Editor** to add the functionalities to the components.

Signing in and creating a new project



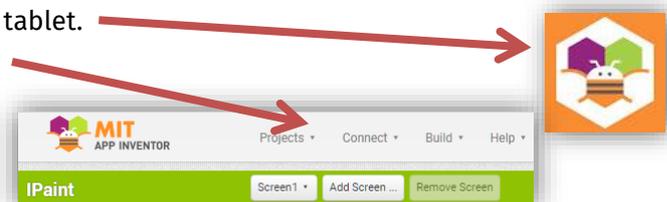
You are already signed in with one of our **gmail accounts**. You could use your own, if you have one. Ask a tutor for help if needed.

- a) The address is <http://ai2.appinventor.mit.edu/>.
- b) Click on
- c) Name the app, e.g. *InfoSpherePaint* press „OK“.

Connect to the tablet



- a) Open the **AI2 Companion App** on your tablet.
- b) In the App Inventor, click on **Connect** and select **AI Companion**.
- c) Scan the QR-Code with your tablet.



*Your app will appear on your tablet. If you change something, you can see the result immediately.
Normally you won't have to reconnect.*

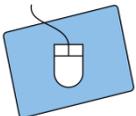
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The Designer

The App Inventor consists of two parts, the **Designer** and the **Blocks Editor**. Let's take a look at the **Designer**. Below you can see the tools **Palette**, **Viewer**, **Components** and **Properties**. Please refer to **Info sheet 1** for a general overview.

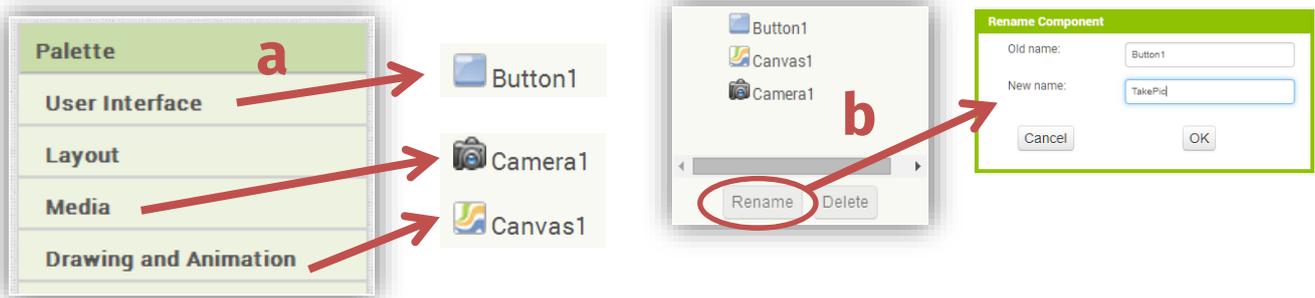


- The **Palette** gives you all the components you can use in your app. In **User Interface** you can find **Buttons**, in **Media** the **Camera** and in **Drawing and Animation** the **Canvas**. The components are dragged onto the **Viewer**.
- The **Viewer** gives you an impression of the looks of your app.
- **Components** lists all the components you already added to your App. They can be renamed and deleted.
- **Properties** shows the properties of the currently selected component. You can change the texts shown on your **Buttons** or select a background colour of a **Canvas**.



Now it's your turn! For the first step, you will need a **Button**, a **Canvas** and, of course, a **Camera**:

- Get a **Button** from **User Interface**, a **Canvas** from **Drawing and Animation** and a **Camera** from **Media** and drag them onto the **Viewer**.
- Rename them suitably by selecting them under **Components** and clicking **Rename**.
- Change also the text for your photo button in **Properties** to "Take picture" or similar.



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Also try out the other possibilities in properties!

Text
Text for Button1

TextAlignment
center

TextColor
Default

Take Picture

Your app should now look somewhat like this:

The Camera is shown as **Non-visible component** below the screen, as you can't see it.

So far, you have added the basic components to your app. What's missing are the functionalities, because:

 **A computer or program only does things someone has taught it beforehand!**

Before your app can work properly, you need to assign functions to the components. For this part, we will switch to the **Blocks Editor** and the next page!

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The Blocks Editor

For general information on the Blocks Editor refer to **Info sheet 2**. Your goal is to add the functionality necessary to take a photo when the button is clicked and use it as background for the canvas.



a) Switch to the **Blocks Editor**:



b) Look for  in the menu of your **button** under **Screen 1** and drag it to the workspace.

c) The free space is a placeholder, where you need to put the call block for the **camera**:



. Can you guess where you can find that one?

Change the background of the canvas:



(1) You will need  from the **menu of your camera**. Put the block



into the space. You can find it under **Canvas1**.

(2) If you now place your mouse cursor over *image*, you can select “*get image*” and place it in the space on the right after “to”:

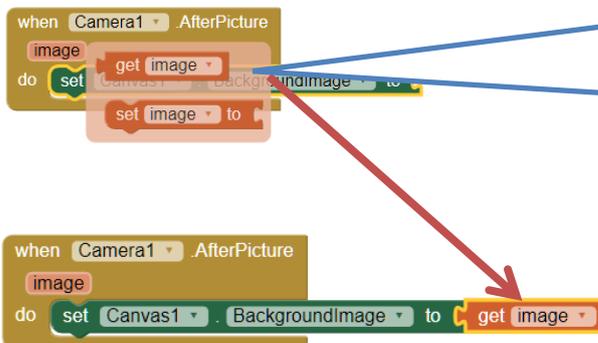


Image is the picture that was just taken. It is handled as a **Variable**. Variables are a kind of container for data, e.g. numbers or image files. We will use more blocks with variables later.

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```

when TakePic .Click
do call Camera1 .TakePicture

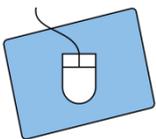
when Camera1 .AfterPicture
image
do set Canvas1 . BackgroundImage to get image
    
```

This is how your blocks should look like. Now it's time for the first test of your app. Connect your tablet to the computer if you haven't done so already. You do remember **connect**, right?

If not everything is working correctly, take a look at the picture above and the previous steps. You can also ask a tutor.

Tailor the canvas

After taking your picture, you will notice that your background is slightly distorted. To correct this, you need to adjust the size of the canvas to make it fit on the screen:



- Select the *canvas* in the **Designer**.
- Look for *Width* and *Height* under *Properties* and set both to 300.
- See if the picture now fits better. If not, further adjust width and height of the canvas.



Congratulations! You've managed to add a background to your drawing app! If everything is working you can get the next work sheet, "(2) Drawing for Intermediates". This will show you how to paint with your app!



MIT App Inventor Logo: <http://appinventor.mit.edu/explore/sites/all/themes/appinventor/logo.png>
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Screenshots from the App Inventor (<http://appinventor.mit.edu/>) made by the InfoSphere-Team

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