

CHAPTER 6

Procedures and Functions

starting out with >>> **APP INVENTOR**
FOR ANDROID



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Topics

- Modularizing Your Code with Procedures
- Passing Arguments to Procedures
- Returning Values from Procedures

Returning Values from Procedures

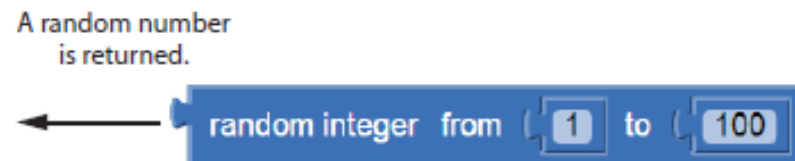
A procedure with a result, or function, is like a regular procedure in the following ways:

- It contains a group of statements that perform a specific task.
- When you want to execute the function you call it.
- The value that is returned from a procedure can be used like any other value.

Returning Values from Procedures

- The `random integer` function as shown in Figure 6-39, returns a value.
- To use the value that is returned, you plug it into another block.

Figure 6-39 The random integer Function Returns a Value (Source: MIT App Inventor 2)

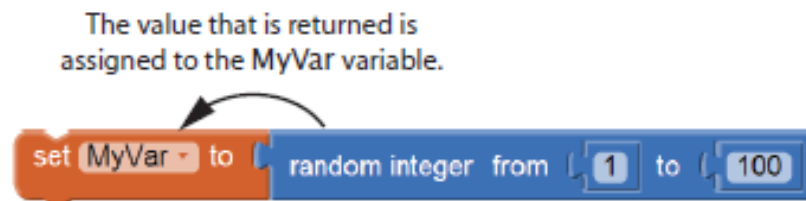


Returning Values from Procedures

Figure 6-40 shows the `random integer` function plugged into a variable's `set` block.

The value that is returned from the `random integer` function is assigned to that variable.

Figure 6-40 Assigning the Returned Value to a Variable (Source: MIT App Inventor 2)



Returning Values from Procedures

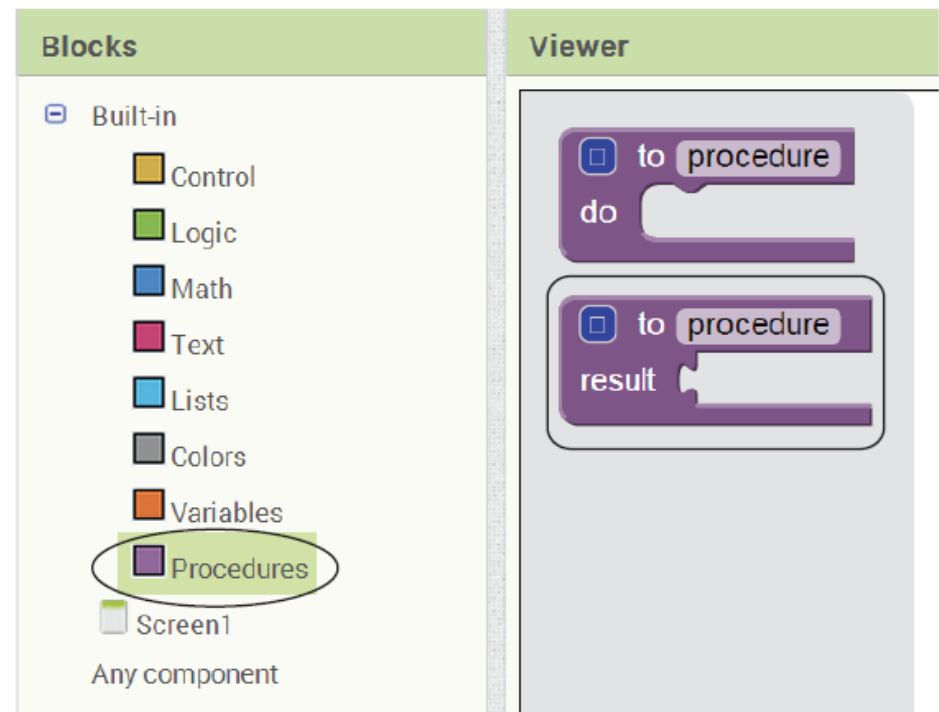
In App Inventor, you create a function the same way you create a regular procedure, with two exceptions:

- You use the `to procedure result` block instead of the `to procedure do` block.
- You must plug a value into the block's `result` socket. This is the value that is returned from the procedure.

Returning Values from Procedures

The `to procedure` result block is in the *Procedures* drawer.

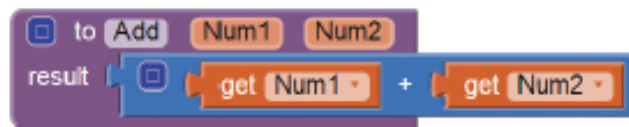
Figure 6-41 The `to procedure` result Block (Source: MIT App Inventor 2)



Returning Values from Procedures

- Figure 6-43 shows an example function. The function's name is `Add` and its purpose is to add two numbers.
- The `Add` function shown in Figure 6-43 is only for demonstration purposes. It isn't necessary to write a function for adding numbers.

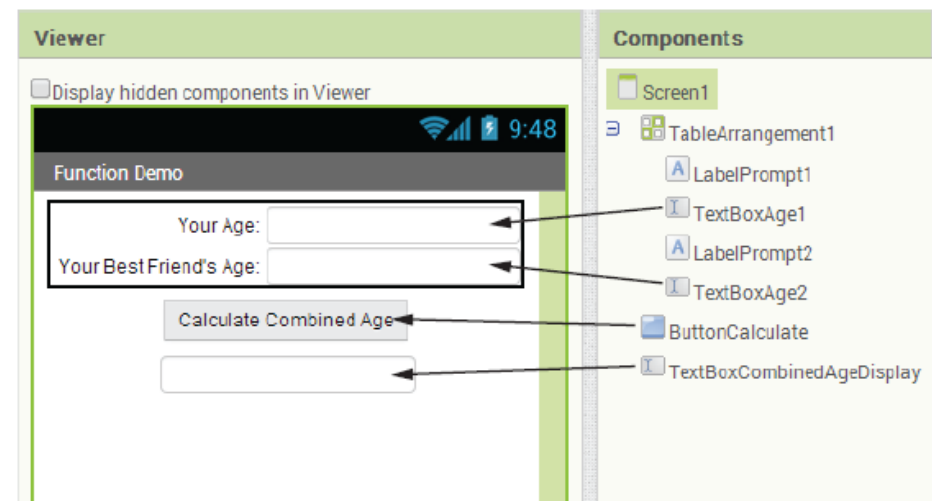
Figure 6-43 An Example Function (Source: MIT App Inventor 2)



Returning Values from Procedures

- The app lets you enter your age into the `TextBoxAge1` and your best friend's age into `TextBoxAge2`.
- Click the *Calculate Combined Age* button, and the app displays the sum of the two ages in `TextBoxCombinedAgeDisplay`.

Figure 6-44 The FunctionDemo App in the Designer (Source: MIT App Inventor 2)



Returning Values from Procedures

Here is the app running in the emulator.

Figure 6-45 The FunctionDemo App Running in the Emulator (Source: MIT App Inventor 2)



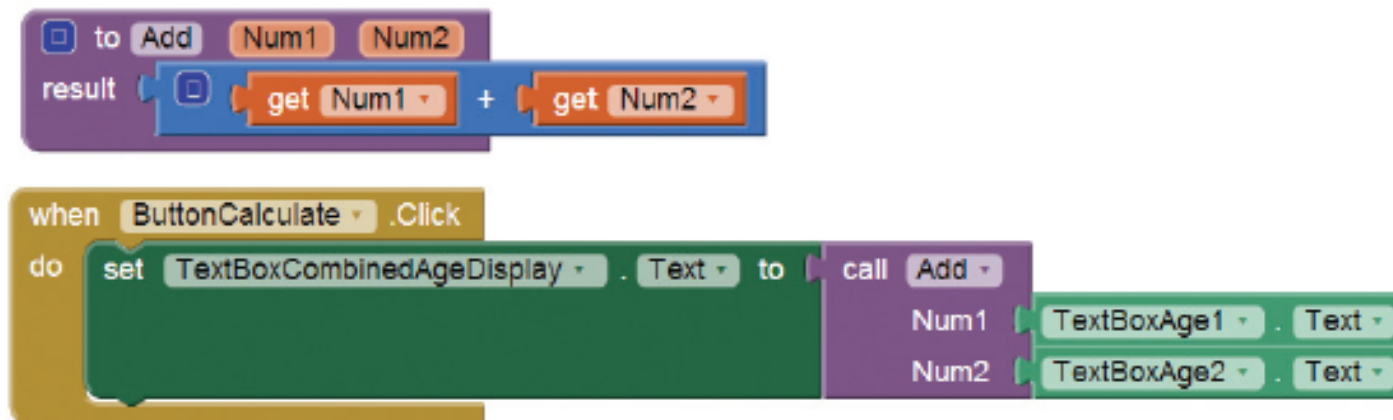
Returning Values from Procedures

- Figure 6-46 shows the app's workspace.
- At the top of the workspace is the `Add` function.
- Below that is the `Click` event handler for the `ButtonCalculate` component.
- In the event handler we set the `TextBoxCombinedAge` component's `Text` property to the value that is returned from the `Add` Function.
- The arguments that are passed to the `Add` function are the `Text` properties of the `TextBoxAge1` and `TextBoxAge2` components.

Returning Values from Procedures

Figure 6-46 The FunctionDemo App's Workspace in the Blocks Editor

(Source: MIT App Inventor 2)



Returning Values from Procedures

Figure 6-47 shows how these are passed as arguments to the `Add` function.

Figure 6-47 Arguments Passed to the `Add` Function and a Value Returned
(Source: MIT App Inventor 2)

