

touchdevelop tutorial

This document was written for touchdevelop v2.8 - more information at <http://www.touchdevelop.com>.

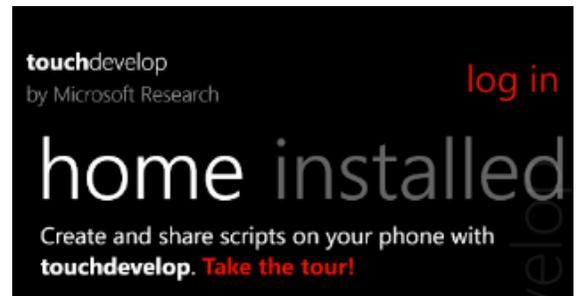
This document is a step-by-step walkthrough of the in-app **touchdevelop** tutorial. This tutorial assumes little or no prior programming experience.

objectives

This tutorial shows you how to **write a script that plays a random song when you shake the phone**.

This tutorial will lead you through the various screens of the app and introduce concepts associated to **touchdevelop**. At the end of this tutorial, you will be able to:

- create a script that uses the **touchdevelop** language
- navigate through the script editor, action editor, and expression editor
- publish your script – so other people will find it in the touchdevelop app and on the touchdevelop.com website



installing touchdevelop

Skip this section if you already have **touchdevelop** installed on your phone.

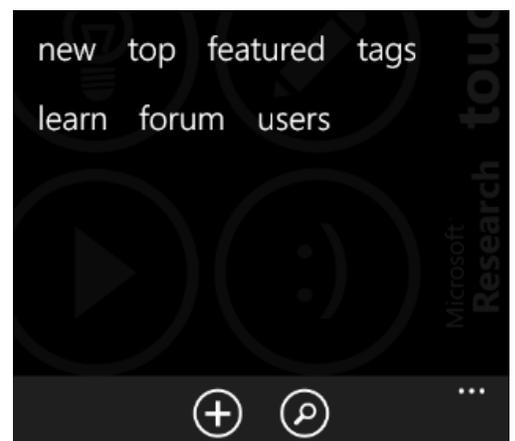
1. Open the Marketplace app on the phone.
2. Tap the **search** button and search for *touchdevelop*.
3. Install and launch the **touchdevelop** app.
4. Once the app is initialized and you have accepted the license terms, you are all set.



creating the *song shaker* app

In this section, you will use the script editor to create a script that plays a random song when you shake the phone.

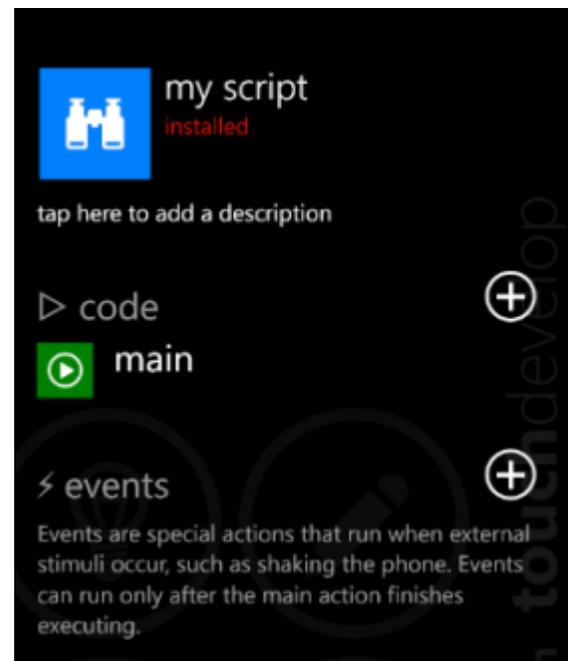
1. Tap the **plus** button in the application bar at the bottom of the screen to create a new script.



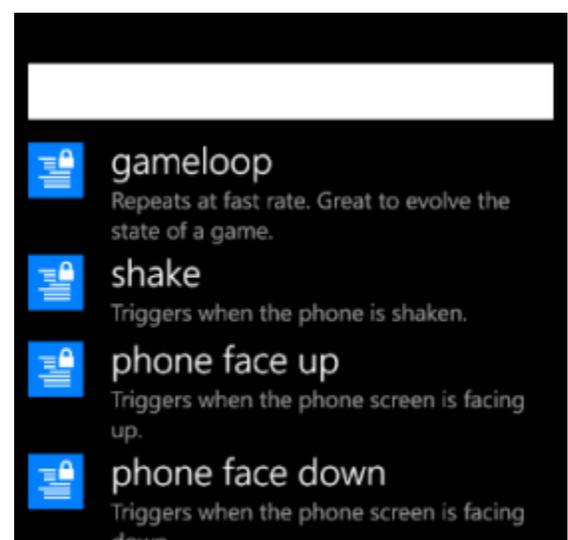
- Pick a name for your new script and tap the **create** button. Don't worry too much about the name; you can change it later.



- The **script editor** opens with the new script. By default, the new script contains an action called *main*. As you will see later, an action contains statements that **touchdevelop** can execute when an action is invoked – each statement instructs your phone to do something. Look down to the **events** category.



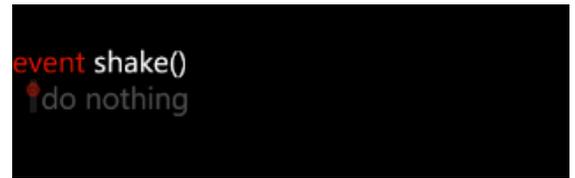
- Tap the **plus** button next to the events category on the right to see a list of available events. **events** are a special kind of actions. When you run a script, **events** are invoked automatically when **touchdevelop** detects external stimuli such as shaking or tilting the phone. **touchdevelop** will invoke the **shake** event whenever the phone is shaken. Under the hood, **touchdevelop** uses the *accelerometer* sensor built into your phone to detect when you move



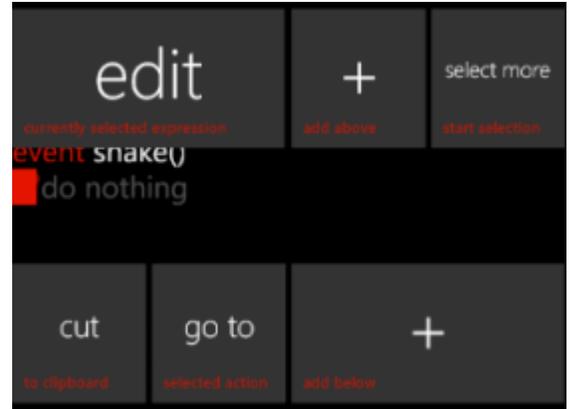
your phone. There are plenty of other events that you can experiment with later.

Tap **shake** in the list to add an event handler.

5. The statements of the **shake** event show up in the **action editor** view. The event contains a single statement, **do nothing**, that ... does nothing when executed! Remember, we want to play a random song when you shake the phone. Tap the **do nothing** to select it.



6. A menu appears that allows you to work with that statement. Tap on **edit** to start editing the content of this statement. Make sure the accent rectangle on the left is on that line (drag up and down to adjust if needed).



7. This menu allows you to add different kinds of code structures. Tap on **command** to add a simple statement.



8. You can edit the new statement in the **expression editor**.

The top dark area displays the current expression, which is empty for now. The rest of the screen is a calculator-like keyboard specifically designed to write code on a small screen.

The second row of buttons opens specialized keyboard layouts for numbers, arithmetic operators, other operators or art.

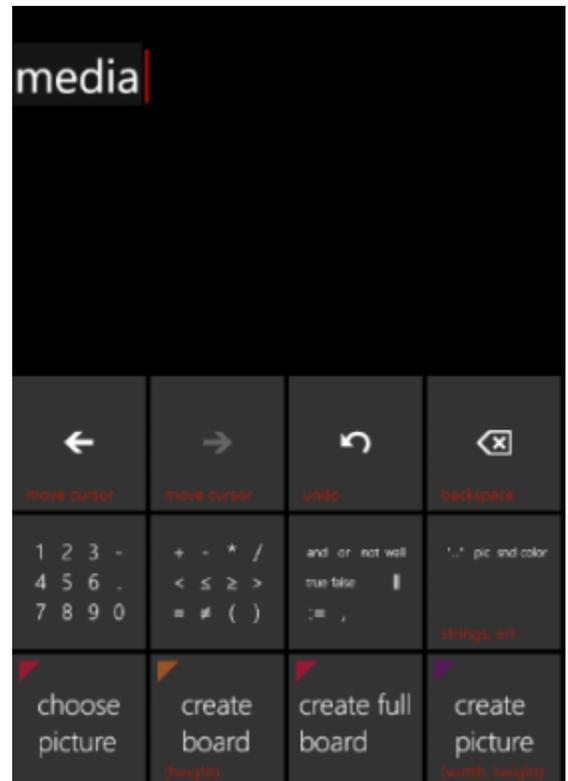
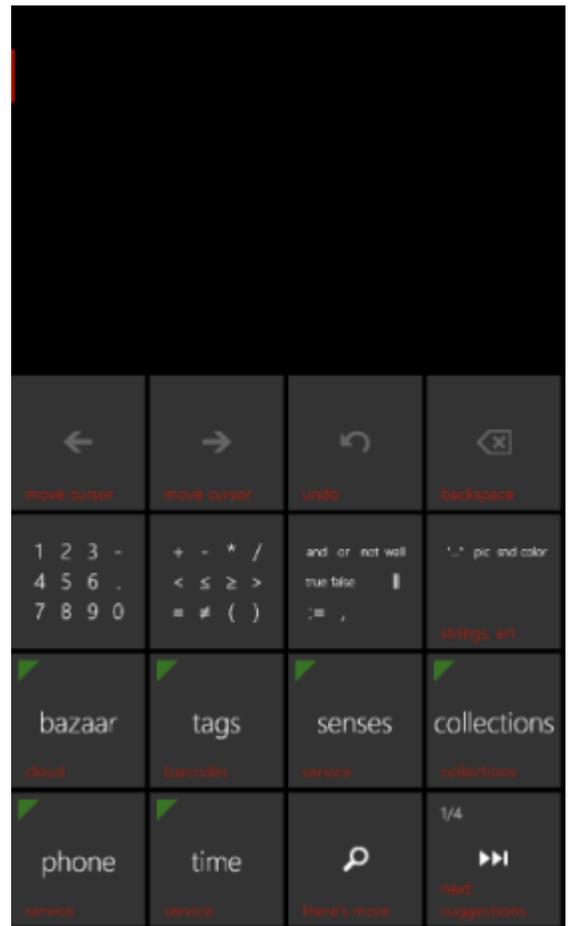
We will focus on the **intelli-buttons** (the third and fourth rows of buttons with triangles at the left top), which allow you to access services and actions available in the current context.

touchdevelop tries to predict which services you are likely to use next and displays them in those buttons. You can iterate through the full list of possible services by tapping the **next suggestions** button or the **there's more** button on the bottom right of the keyboard.

Tap the **media** button on the lower left to insert it into the editing pad. (On your screen, the buttons might be ordered differently; the ordering changes over time as **touchdevelop** learns what functions you use more often.)

9. After you insert **media**, the **intelli-buttons** reconfigure themselves automatically to display the possible operations on the **media** element.

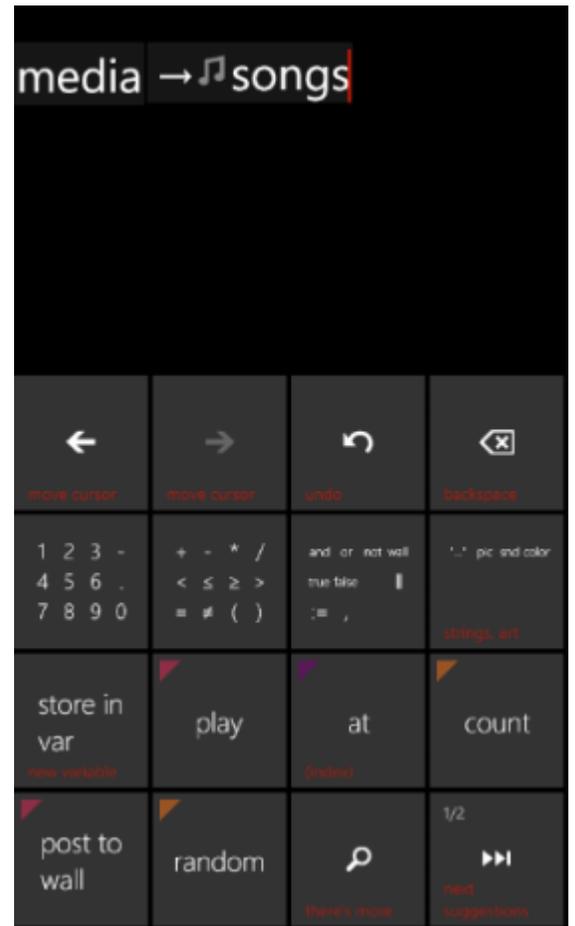
Tap **songs** to insert the code that will get the list of songs from the media library.



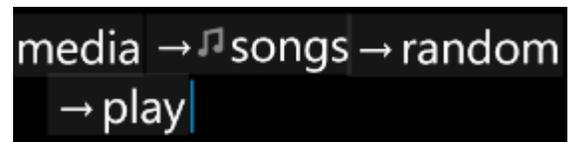
10. After inserting **songs**, the **intelli-buttons** reconfigure themselves again. This is the case any time the cursor moves in the view, which makes it easy for you to insert expressions that make sense in that context.

Notice also that there is a **music note icon** in front of the **songs** property in the expression at the top. This icon means that the **songs** property accesses your media library. Accessing your media library is an important *capability* of your phone and your personal data, which this script is exercising, and **touchdevelop** keeps track of all such capabilities. By keeping track of such capabilities, **touchdevelop** can let other people who want to use your script know what kind of information a script uses. Similarly, **touchdevelop** would flag **senses**→**current location** with another icon, as it accesses your precise current location, wherever you are in the world.

Tap the **random** intelli-button to add the property of **songs** that picks randomly a song from all songs in your media library.

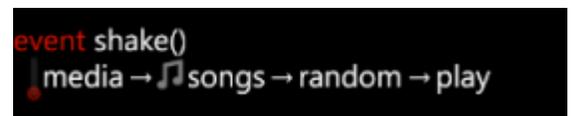


11. Continue the same procedure to add the **play** property that will start playing the song when the statement is executed. At this point, we have a statement that reads as follows: from the **media** library, get the **songs** collection, pick a **random** song, and **play** it.



Press the phone hardware back button to leave the **expression editor** and go back to the **action editor**.

12. Back in the action editor, you can see the entire shake event, including the new line of code.



At this point, we are ready to try out the script.

Tap the leftmost **run** button in the application bar to launch the script.

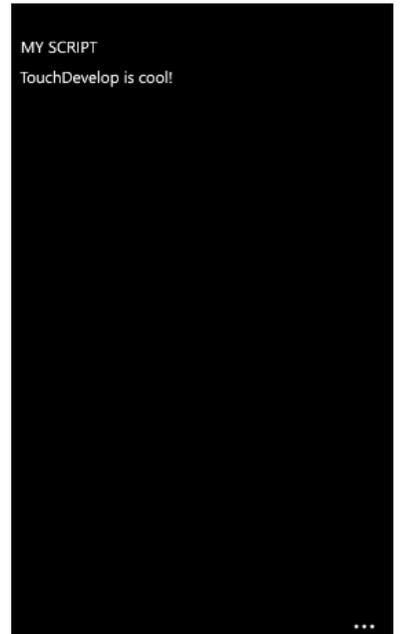
13. **touchdevelop** will first run the **main** action, which simply prints *TouchDevelop is cool!* to the **touchdevelop wall**. You can edit the **main** action later if you want. (Any element in **touchdevelop** can be displayed by a call to the **post to wall** property on it. **touchdevelop** will automatically display that element in a meaningful and pleasant way to the user.)

Once all statements in the **main** action have run, **touchdevelop** waits and monitors for more events such as shaking.

Shake your phone to hear some random music.

(Don't forget to raise the sound volume on your phone. If you get an error message, check that you actually have songs on your phone.)

Press the **phone hardware back button** to stop the execution.



Congratulations! You just created your first mobile application. Your script plays a song randomly whenever you shake the phone. In the next session, you'll see how to publish this script so that other people can find and use it – in the TouchDevelop app, and on the [touchdevelop.com](http://www.touchdevelop.com) website.

publishing the 'song shaker' script

This section requires internet access.

After you create a script with **touchdevelop**, you can **publish** the script. Once it's published, other users will be able to install, run or even modify your script from the TouchDevelop app on your phone, and on the touchdevelop.com website. We will publish our *song shaker* script in this exercise.

1. When the script stops running, the application bar pops up at the bottom of the screen. It allows you to **run** the script again, **edit** it, give it a ♥, or **pin** it to your start screen.



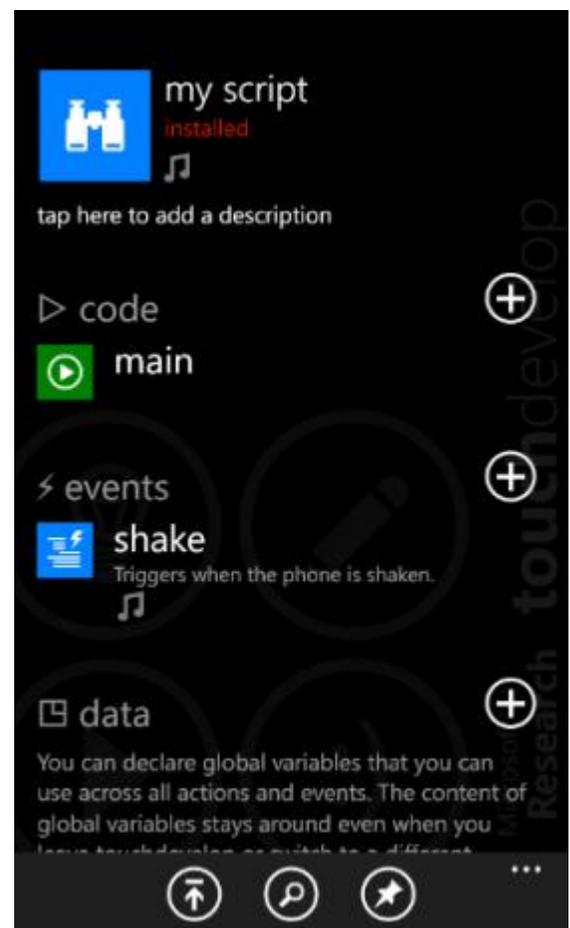
Press the phone hardware back button once to navigate back to the **action editor**.

Then press the phone hardware back button once more to navigate back to the **script editor**.

2. The events list contains the **shake** event. Notice the music note icon under the **shake** event and under the script name. This icon informs you that this script accesses your music library. **touchdevelop** detected this automatically by analyzing the code in the **shake** event.

Because the script has been modified and has not been published yet, the **publish** button is visible in the application bar at the bottom of the screen (first button from the left).

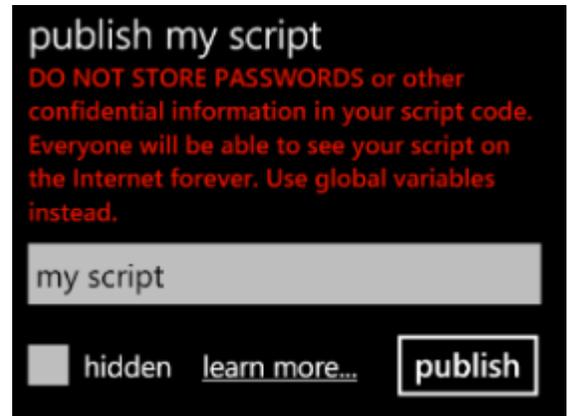
Tap the **publish** button to start the publishing process.



3. **touchdevelop** first reminds you that your script will be available publically on the Internet once you publish it. **Do not store passwords** or any confidential information in the script code.

If you are happy with the script name, tap the **publish** button.

Or, you can cancel this operation by pressing the phone hardware back button.



4. If this is your first use of **touchdevelop**, you will probably have to sign in.

touchdevelop supports sign in with Windows Live ID or Facebook to identify you. Pick either of them and follow the instructions from your identity provider.



Congratulations, you have now published your first script to the web! You will see your script in the **new** section in the TouchDevelop app, and on the <http://www.touchdevelop.com> website.

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