# **Developing for NOOKcolor**

This document provides an overview of the development process for the Barnes & Noble NOOKcolor and details how to get started creating reader-centric applications.

NOOKcolor runs Android 2.1 (Eclair – Android SDK API 7) customized as a Readers Tablet . Similar to all Android devices, a developer uses the Google Android SDK to build applications.

### **Hardware Features**

These hardware features provide a great foundation for building interactive readercentric applications for NOOKcolor:

- Display 7" display with a resolution of 600px by 1024px @ 169PPI
- Processor 800Mhz TI OMAP ARM
- **Graphics** Support for OpenGL ES 1.1/2.0 with hardware acceleration
- Video/Audio/Images Support for standard video, audio, and image formats
- Multi-touch Support for two touch points supported
- Accelerometer Support for three axis
- Networking WiFi Enabled

### **Overview of the Tasks for Developing NOOKcolor Apps**

The following sections provide the tasks to perform to get up-to-speed in developing apps for NOOKcolor:

- Getting Started to install the required software
- Installing the NOOK SDK Add-on
- Starting NOOKcolor as an Android Virtual Device (AVD)
- Building a sample application
- Where to go from here



## **Getting Started**

Follow these steps:

1. Install the required software:

Required:

Java - <u>http://java.com</u> Android SDK - <u>http://developer.android.com/sdk/</u>

Optional:

Eclipse – <u>http://www.eclipse.org/downloads/</u> ADT Plugin for Eclipse – <u>http://developer.android.com/sdk/eclipse-adt.html</u>

- 2. Update the Android SDK to support Android 2.1 API 7.
- 3. Install the NOOK SDK ADD-ON. The NOOK SDK ADD-ON enables you to emulate NOOKcolor on your desktop and install, test, and debug software using the Android Debug Bridge (ADB).

### Installing the NOOK SDK Add-on

Follow these steps:

1. From the command line, run the following command: \$ <ANDROID\_SDK>/tools/android

The command opens the Android SDK and AVD Manager.

000		Android SDK and AVD Mana	ger		
Virtual Devices	List of existing Android Virtual Devices located at /Users/tpatrick/.android/avd				
Installed Packages	AVD Name	Target Name	Platform	API Level	New
Available Packages Settings		No AVD available			
About					Delete
					Repair
					Details
					Start
					Refresh
	🗸 A valid An	droid Virtual Device. 峇 A rep	airable Android	Virtual Device	2.
	× An Androi	d Virtual Device that failed to lo	oad. Click 'Detail	s' to see the	error.

- 2. In the Android SDK and AVD Manager window:
  - a. From the left-hand menu, select Available Packages
    - b. Click the Add Add-on Site button.

000	Android SDK and AVD Manager
Virtual Devices Installed Packages Available Packages Settings About	Sites, Packages and Archives
	Description         Add Add-on Site         Delete Add-on Site         Refresh

- 3. In the Add Add-on Site URL window:
  - a. Enter the URL for the NOOKcolor SDK: <u>http://</u> <u>www.barnesandnoble.com/nookcolor/developer/</u>
     b. Click OK.

Add Add-on Site URL	
This dialog lets you add the URL of a new add-on site.	
An add-on site can only provide new add-ons or "user" packages. Add-on sites cannot provide standard Android platforms, docs or samples packages. Inserting a URL here will not allow you to clone an official Android repository.	
Please enter the URL of the repository.xml for the new add-on site:	
http://www.barnesandnoble.com/nookcolor/developer/	
OK Cancel	
	2 ) 4
Add Add-on Site Delete Add-on Site Refresh Install Se	elected
	An add-on site can only provide new add-ons or "user" packages. Add-on sites cannot provide standard Android platforms, docs or samples packages. Inserting a URL here will not allow you to clone an official Android repository. Please enter the URL of the repository.xml for the new add-on site: http://www.barnesandnoble.com/nookcolor/developer/ OK Cancel



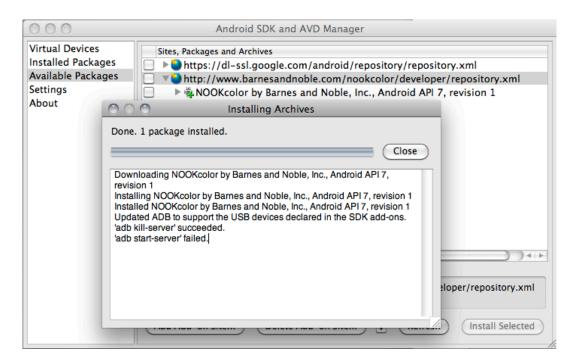
- 4. In the Android SDK and AVD Manager window:
  - a. In the Sites, Packages and Archives section, click the checkboxes for the following packages:
    - <u>http://www.barnesandnoble.com/nookcolor/developer/</u> repository.xml
    - NOOKcolor by Barnes and Noble, Inc., Android API 7, revision 1
  - b. Click the Install Selected button.

000	Android SDK and AVD Manager
Virtual Devices Installed Packages Available Packages Settings About	Sites, Packages and Archives         ▶       >
	Description         Add-on Source: http://www.barnesandnoble.com/nookcolor/developer/repository.xml         One backage found.         Add Add-on Site         Delete Add-on Site         Install Selected

- 5. In the Choose Packages to Install window:
  - a. select the package, NOOKcolor by Barnes and Noble, Inc.
  - b. Accept the License Agreement.
  - c. Click the Install button.

0 0 0 Cł	noose Packages to Install	
Packages	Package Description & License Package Description	6
	Android SDK for Barnes and Noble NOOKcolor, API 7, revision 1 Requires SDK Platform Android API 7	U
	Archive Description Archive for any OS Size: 136 MiB SHA1: adee92c1b9fd9bb02431f5fba8eee2a962b0e8e8	
	lirense	× V
	○ Accept ○ Reject ④	Accept All
[*] Something depends on this package	Install Ca	incel

The NOOK SDK downloads and installs in the Android SDK.



When the installation process is complete, you see the confirmation dialog that the process is done and one package is installed.

000	Android SDK and AVD Manager	
Virtual Devices	Sites, Packages and Archives	
Installed Packages Available Packages	Installing Archives	xml
Settings About	Downloading NOOKcolor by Barnes and Noble, Inc., Android API 7, revisio	⊐pository.xml vision 1
	Downloading NOOKcolor by Barnes and Noble, Inc., Android API 7, revision 1	
	One package found. Add Add-on Site) Delete Add-on Site) ☑ Refresh	er/repository.xml



### Starting NOOKcolor as an Android Virtual Device (AVD)

Follow these steps:

- 1. In the Android SDK and AVD Manager window:
  - a. From the left-hand menu, select Virtual Devices
  - b. Click the **New** button.

000		Android SDK and AVD Mana	ger		
Virtual Devices					
Installed Packages	AVD Name	Target Name	Platform	API Level	New
Available Packages Settings		No AVD available			Delete
About					Repair
					Details
					Start
					Refresh
	<ul> <li>A valid And</li> </ul>	Iroid Virtual Device. 🗟 A repair	able Android Virtua	al Device.	Kerresit
		Virtual Device that failed to load			

- 2. In the Create new Android Virtual Device (AVD) window:
  - a. Enter these details:
    - **Name** Choose a name for the AVD instance.
    - Target Select NOOKcolor (Barnes & Noble, Inc.) API Level 7.
    - SD Card Optional, depends on end user.
    - Skin Built-in "Default (NOOKcolor)"
    - Hardware Add hardware properties for the Accelerometer and Touchscreen support.
  - b. Click the Create AVD button.

000	Create new Android Virtual Device (AVD)
Name:	NookColor
Target:	NOOKcolor (Barnes & Noble, Inc.) - API Level 7
SD Card:	● Size: MiB ♦
	O File: Browse
Skin:	Built-in: Default (NOOKcolor)
	C Resolution: x
Hardware:	Property Value New
	Touch-screen support yes Delete
Override	the existing AVD with the same name
	Create AVD Cancel



3. In the list of existing AVDs, select **NookColor**.

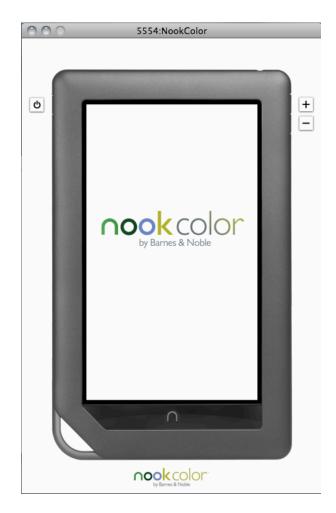
000		Android SDK and AVD Mana	ger		
Virtual Devices	List of existing A	ndroid Virtual Devices located	at /Users/tpatrick/	.android/avd	
Installed Packages Available Packages	AVD Name	Target Name NOOKcolor (Barnes & No	Platform	API Level	New
Settings About	NOOKCOIO	NOORCOIDT (Barries & NO	ble, mc.) 2.1-upua	(u /	Delete
About					Repair
					Details
					Start
	L				Refresh
		oid Virtual Device. 📐 A repair			
	× An Android V	'irtual Device that failed to load	d. Click 'Details' to s	see the error.	

4. Set the launch options for the virtual device and click the **Launch** button. Depending on your computer screen size, you may need to "Scale display to real size", typically a screen size of 5"-10" fits the device to screen for best viewing.

00	O Launch Opt	ions		
Skin: NOOKcolor (600x1024) Density: Medium (160) Scale display to real size				
	Screen Size (in):	3		
	Monitor dpi: Scale:	72 ? default		
Wipe user data				
Launch Cancel				

The AVD launches and boots up. The AVD has four physical buttons to provide simulated control of the emulator and to identically match the behavior of the NOOKcolor device:

- Power
- Volume Up
- Volume Down
- Home The NOOK symbol, n



The emulator provides the base emulator for the NOOKcolor device.

NOOKcolor does **not support** Android Widgets so the following elements are **not** required for third-party software development:

- Home Screen
- Store
- Library
- Extras



#### **Building a Sample Application**

The Android SDK provides some sample applications to get started.

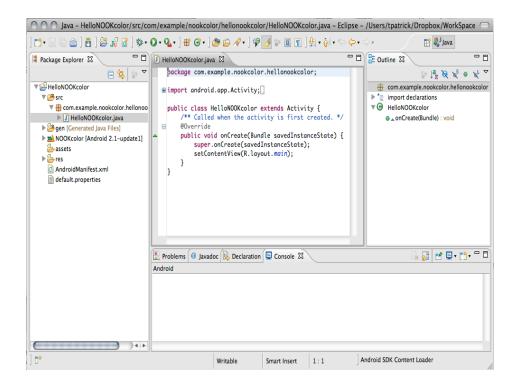
Our sample application, Hello NOOKcolor, shows you how to begin developing a NOOKcolor app.

Follow these steps:

- 1. In Eclipse, start a new Android project:
  - Enter the Project name: HelloNOOKcolor.
  - In the Contents section:
    - Click the Create new project in workspace option.
    - Click the Use default location check box.
  - In the Build Target section, click the **NOOKcolor** check box.
  - In the Properties section:
    - a. Enter the Application name: HelloNOOKcolor.
    - b. Enter the Package name: com.example.nookcolor.hellonookcolor
    - c. Click the Create Activity check box.
    - d. In Min SDK Version, enter 7.

000	New Android Project		
New Android Project	h		
Creates a new Android Project resource.			
Project name: HelloNO	OKcolor		
Contents			
Create new project	in workspace		
O Create project from	existing source		
☑ Use default location	1		
Location: /Users/tpa	atrick/Dropbox/WorkSpace/HelloNOOKcolor	Browse	
Create project from	existing sample		
Samples: ApiDemos	5	*	
Samples.	-		
Build Target			
Target Name	Vendor	Platform API L	
Android 1.1	Android Open Source Project	1.1 2	
Android 1.5	Android Open Source Project	1.5 3	
Google APIs	Google Inc.	1.5 3	
Android 1.6	Android Open Source Project	1.6 4	
Google APIs	Google Inc.	1.6 4	
Android 2.0	Android Open Source Project	2.0 5	
Google APIs Android 2.0.1	Google Inc. Android Open Source Project	2.0 5 2.0.1 6	
Google APIs	Google Inc.	2.0.1 6	
Android 2.1-upda		2.1-update1 7	
NOOKcolor	Barnes & Noble, Inc.	2.1-update1 7	
NOOKcolor	Barnes & Noble, Inc.	2.1-update1 7	
Google APIs	Google Inc.	2.1-update1 7	
Android 2.2	Android Open Source Project	2.2 8	
Google APIs	Google Inc.	2.2 8	
(			
nook color			
Properties			
Application name: He	ello NOOKcolor		
	m.example.nookcolor.hellonookcolor		
	lloNOOKcolor		
Min SDK Version: 7			
?	< Back Next > Cancel	Finish	

2. In the generated Android project, click **Run** with the NOOKcolor emulator running.





In the Run As window, select Android Application and click the OK button

O O Run As
Select a way to run 'HelloNOOKcolor':
android Application
JU Android JUnit Test
🖭 Java Applet
Java Application
JʊJUnit Test
Description
Runs an Android Application
_
Cancel OK

3. The NOOKcolor emulator is now running the HelloNOOKcolor basic application.





#### Where to Go from Here

For more tutorials on getting started with Android, visit: <u>http://developer.android.com/guide/</u>.

Barnes & Noble will be posting additional tutorials and samples in our developer program, NOOKdeveloper, to help you get started building successful reading-centric applications for NOOKcolor.

Make sure to visit NOOK developer for up-to-date information on the latest development news for NOOK devices:

http://bn.com/nookdeveloper