

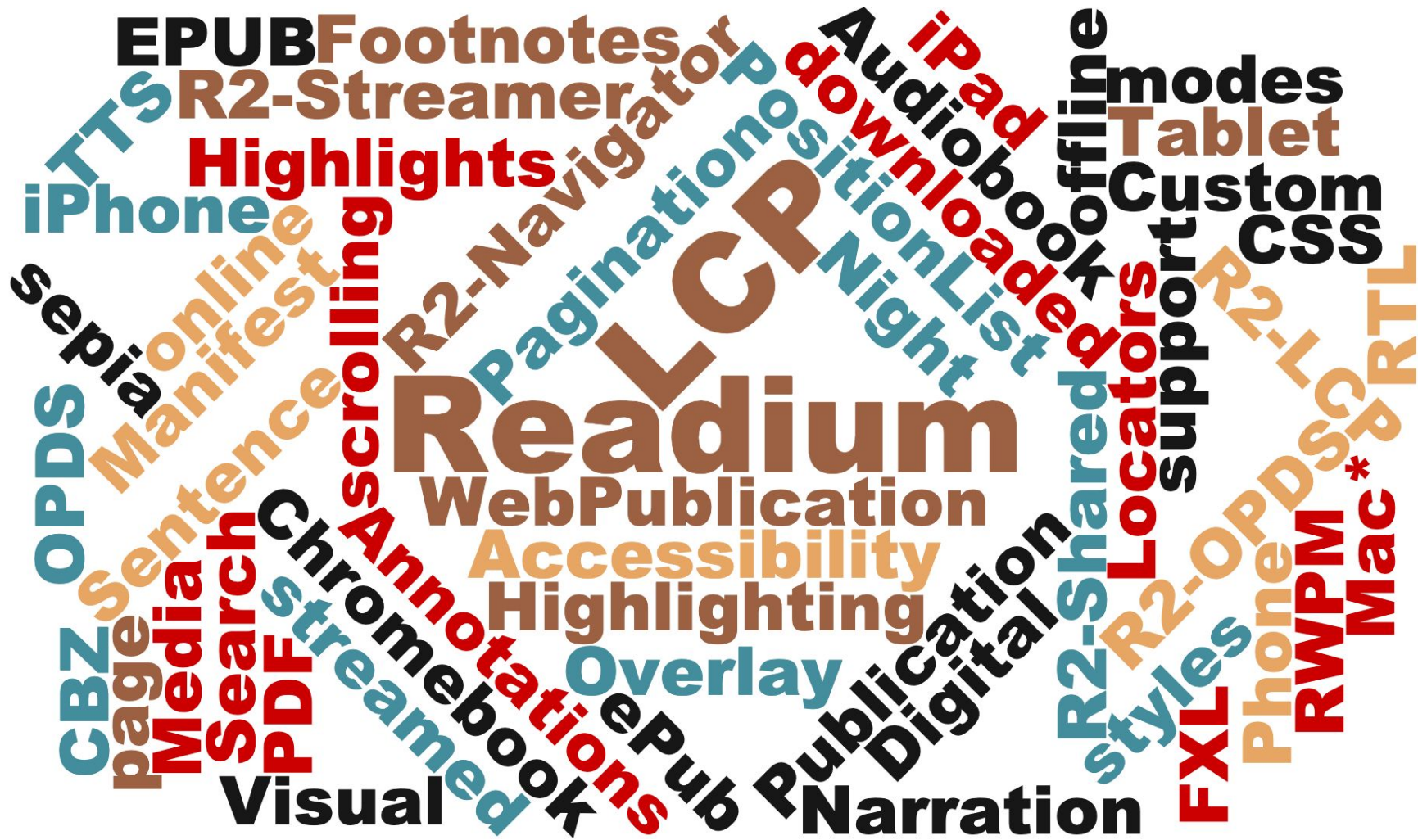
Digital Publishing Summit

2019
June 25-26

Readium Mobile: Deployment

- Aferdita Muriqi



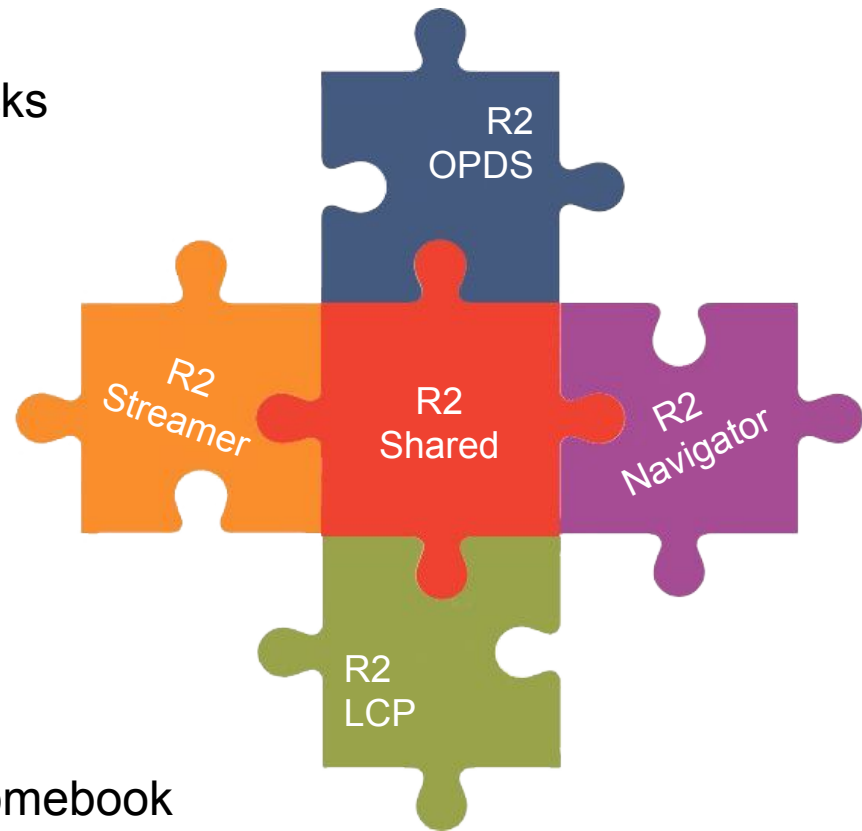




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Building Blocks

- Toolkit of 5 core modules / building blocks
- R2 Testapp (sample and test purpose)
- R2 Workspace (getting started quickly)
- Native Environment
 - Xcode 10.1 moving to 10.2
 - \Swift 4.2 moving to 5
 - iOS (min target 9.0)
 - Android Studio 3.4.1
 - Kotlin 1.3.31
 - Android (min sdk 21)

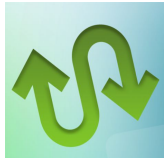


iPhone & iPad,
Android Phone, Tablet & Chromebook



Readium CSS

- Essential building block of R2 iOS, Android and desktop apps (can also be used in any reading system!)
- Some key features:
 - Pagination: Right-To-Left (e.g. Arabic), Vertical (e.g. Japanese)
 - Custom fonts (e.g. dyslexia)
 - Color themes (e.g. dark/night, sepia)
 - Text alignment, line height, word spacing, etc.
- <https://github.com/readium/readium-css>



Radium

“Web Publication Manifest”

- Optimized interface between:
 - “Server / backend” (produces JSON)
 - “Client / frontend” (consumes JSON)
- “Stream” publications in smaller chunks (e.g. individual chapters)
- Web features: HTTP caching, prefetching, integrity checking, etc.



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Where are we?

Mobile - Where are we?

	R2 Swift	R2 Kotlin
ePub 2 & 3 support	✓	✓
Custom Styling	✓	✓
CBZ support	✓	✓
PDF support	✓	
Radium Web Publication Manifest	✓	✓
RWPM EPUB	✓	✓
RWPM Audiobook		✓
OPDS 1 & 2 support	✓	✓

Mobile - Where are we? (cont.)

	R2 Swift	R2 Kotlin
Radium LCP ePub	✓	✓
FXL support (1 page)	✓	✓
FXL support (2 page)		✓
RTL support	✓	✓
Locators	✓	✓
Accessibility	✓	✓
Popup Footnotes		✓
TTS with Overlay		✓

So, is it ready yet?



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Mobile - Stable in Production (github.com/readium)

	R2 Swift	R2 Kotlin
R2-Shared	1.2.13	1.0.10
R2-Streamer	1.0.14	1.0.10
R2-Navigator	1.0.13	1.0.10
R2-OPDS	1.0.10	1.0.9
R2-LCP	1.0.10	1.0.10
R2 Test App	V2.0.0-beta.7	V2.0.0-beta.6
Public Beta	http://bit.ly/r2-ios-testing	http://bit.ly/r2-android-testing

Where are we going next?

Mobile - Where are we going?

	R2 Swift	R2 Kotlin
RWPM Audiobook	✓	✓
FXL support (2 page)	✓	✓
Popup Footnotes	✓	✓
PDF support	✓	✓
Radium LCP PDF	✓	✓
PositionList	✓	✓
Annotations (Highlights)	✓	✓
RWPM Digital Visual Narratives	✓	✓

Mobile - Where are we going? (cont.)

	R2 Swift	R2 Kotlin
Search	✓	✓
TTS with Sentence Highlighting	✓	✓
Media Overlay	✓	✓
More Accessibility	✓	✓

Mobile - Use Cases (github.com/readium)

	R2-Shared	R2-Streamer	R2-Navigator	R2-OPDS	R2-LCP
I want to read books located on my device offline	✓	✓	✓		
I want to read ePubs that are LCP protected	✓	✓	✓		✓
I want to read books that are not on my device but streamed from a remote server	✓		✓		
I want to download books from an OPDS feed and read them offline	✓	✓	✓	✓	
I want to listen to an audiobook that is provided through an OPDS feed and streamed from a remote server	✓		✓	✓	
I want to read a pdf that is LCP protected	✓	✓	✓		✓
I want to just browse an OPDS catalog	✓			✓	

✓ - modules you need

✓ - modules that are included in other modules

Mobile - Native Platforms

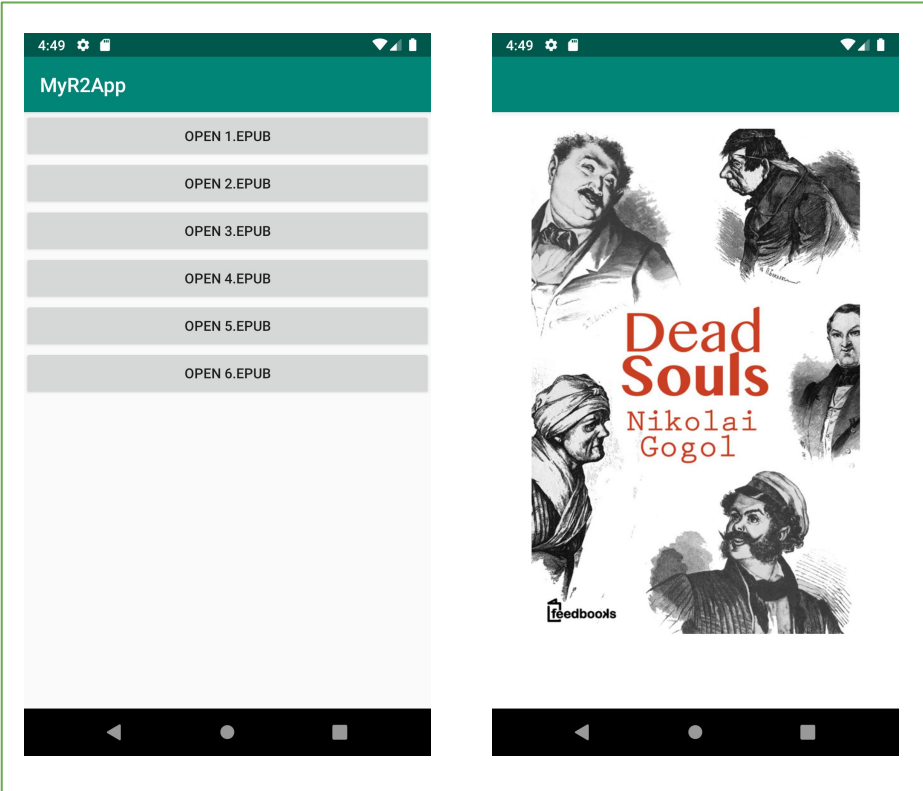
R2 Swift -> iOS, iPadOS?, MacOS?

	iPhone	✓	
	iPad	✓	
	Mac ?	✓	

R2 Kotlin -> Android

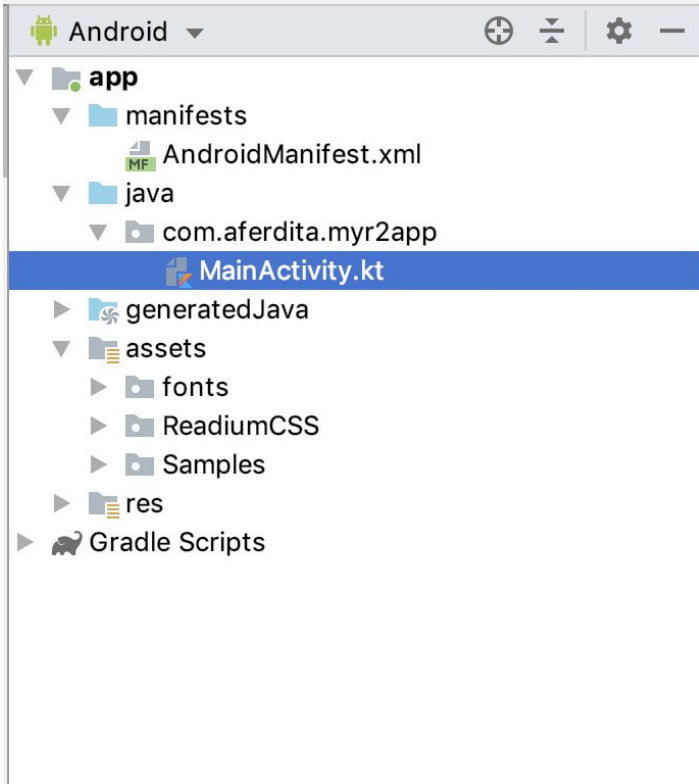
	Phone	✓	
	Tablet	✓	
	Chromebook	✓	

Mobile - How to? (Kotlin example)



?

Mobile - How to? (Kotlin example)



```
dependencies {
    implementation fileTree(dir: 'libs', include: ['*.jar'])
    implementation "org.jetbrains.kotlin:kotlin-stdlib-jdk7:$kotlin_version"
    implementation 'androidx.appcompat:appcompat:1.0.2'
    implementation 'androidx.core:core-ktx:1.0.2'
    implementation 'com.google.android.material:material:1.0.0'
    implementation 'androidx.constraintlayout:constraintlayout:1.1.3'
```

```
// Radium R2 Modules
```

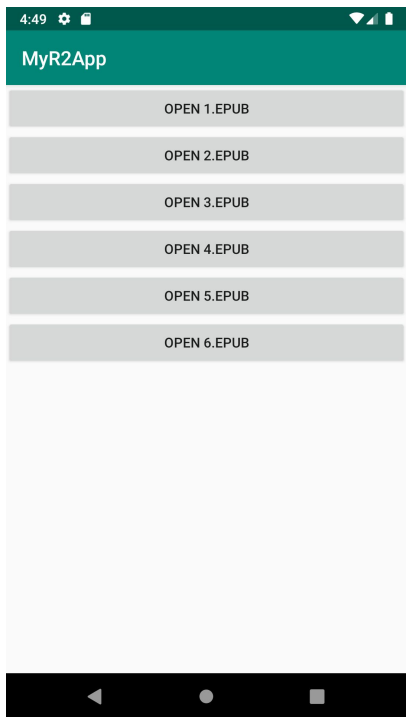
```
implementation "com.github.readium:r2-shared-kotlin:1.0.10"
implementation "com.github.readium:r2-navigator-kotlin:1.0.10"
implementation "com.github.readium:r2-streamer-kotlin:1.0.10"
```

```
implementation 'org.nanohttpd:nanohttpd:2.3.2-SNAPSHOT'
implementation 'org.nanohttpd:nanohttpd-nanolets:2.3.2-SNAPSHOT'
```

```
// Anko
```

```
implementation "org.jetbrains.anko:anko-commons:0.10.8"
implementation "org.jetbrains.anko:anko-sdk25:0.10.8"
implementation "org.jetbrains.anko:anko-appcompat-v7:0.10.8"
implementation "org.jetbrains.anko:anko-design:0.10.8"
implementation "org.jetbrains.anko:anko-sdk25-coroutines:0.10.8"
implementation 'org.jetbrains.anko:anko-appcompat-v7-coroutines:0.10.8'
```

Mobile - How to? (Kotlin example)



```
class MainActivity : AppCompatActivity() {
    private lateinit var server: Server
    private var localPort: Int = 0

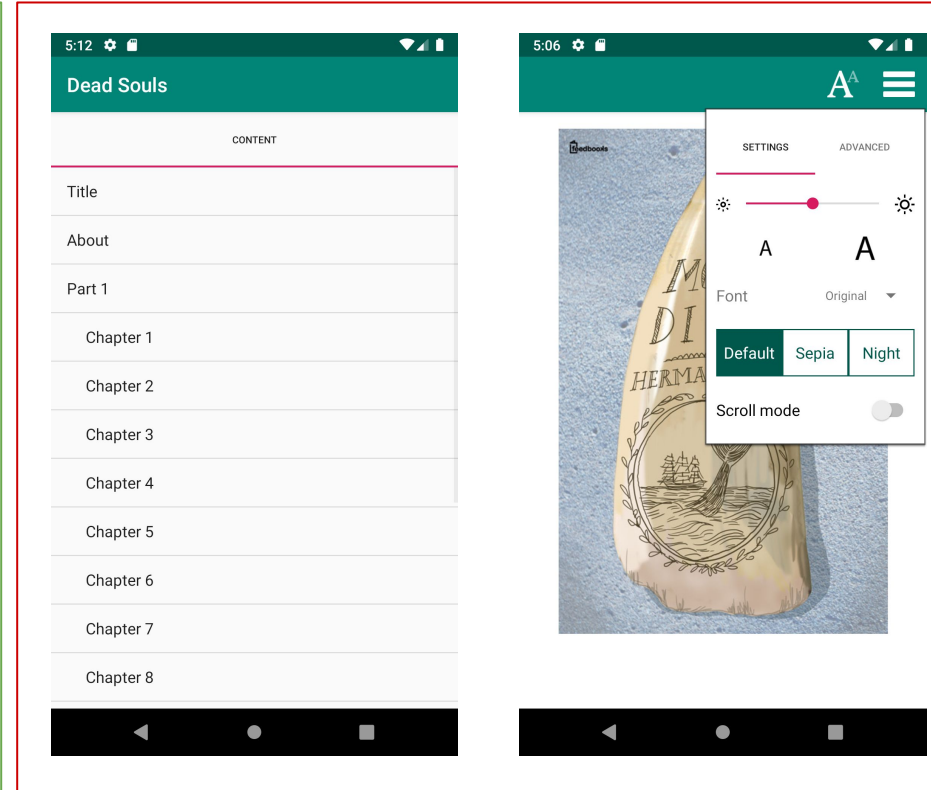
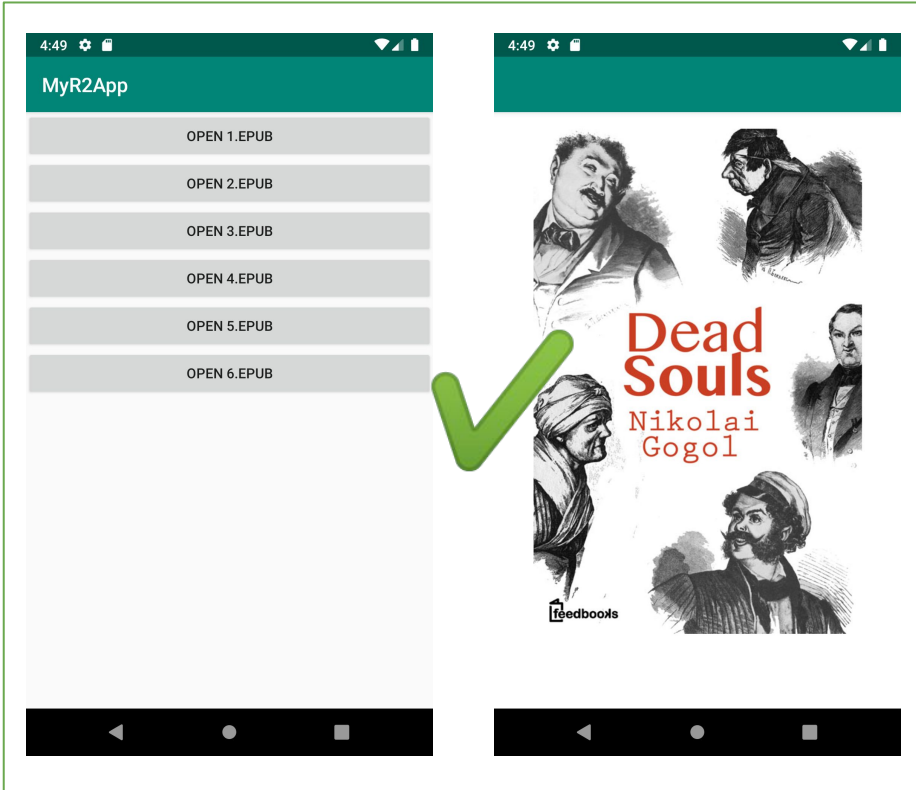
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)

        val s = ServerSocket(port: 0)
        s.localPort
        s.close()

        localPort = s.localPort
        server = Server(localPort)

        linearLayout { this: _LinearLayout
            orientation = LinearLayout.VERTICAL
            assets.list(path: "Samples")?.filter { it.endsWith(suffix: ".epub") }?.let { list: List<String!> ->
                for (element: String! in list) {
                    val input: InputStream = assets.open(fileName: "Samples/$element")
                    val fileName: String = UUID.randomUUID().toString()
                    val publicationPath: String = appPath + "/" + fileName
                    inputToFile(publicationPath)
                    button { this: Button
                        text = "open $element"
                        setOnClickListener { it: View!
                            val parser = EpubParser()
                            val pub: PubBox? = parser.parse(publicationPath)
                            pub?.let { it: PubBox
                                server.addEpub(pub.publication, pub.container, fileName: "/$fileName", userPropertiesPath: appPath + "/styles/UserProperties.json"
                            )
                            startActivity(
                                intentFor<EpubActivity>(params: "publicationPath" to publicationPath, "epubName" to fileName, "publication" to pub.publication )
                            )
                        }
                    }
                }
            }
        }
    }
}
```

Mobile - How to? (Kotlin example)



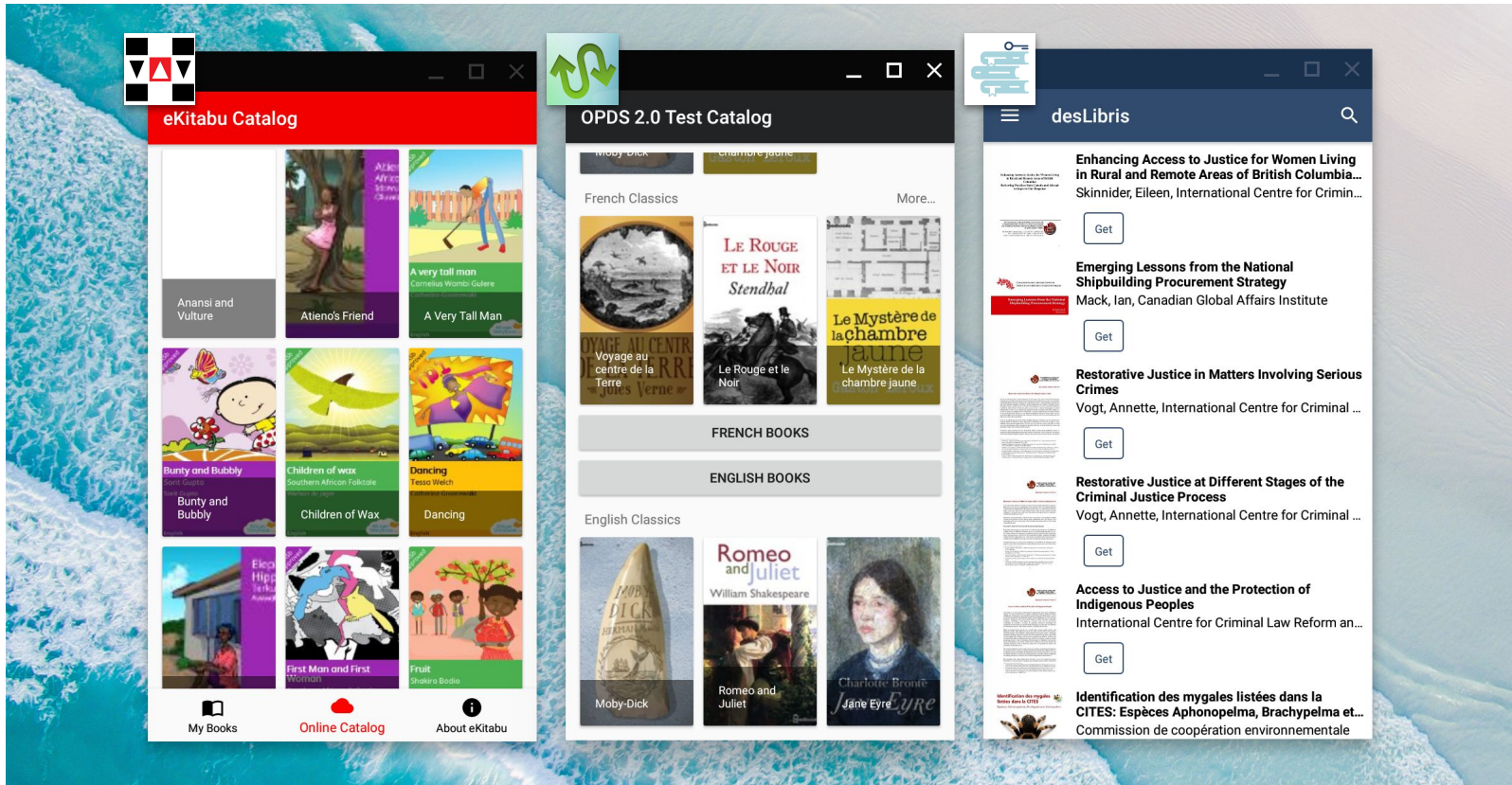


R2 Reader “test apps”

- Distributed via official stores, but only for tests / demos!
- Fluid user experience (instant rendering, fast page turns)
- Accessible user interface
- Minimal bookshelf functionality (basic OPDS browser)
- Minimal reader features (e.g. no shared annotations, dictionary, etc.)

Goal: facilitate the integration of R2 building blocks into publisher apps, vendor ecosystem, etc.

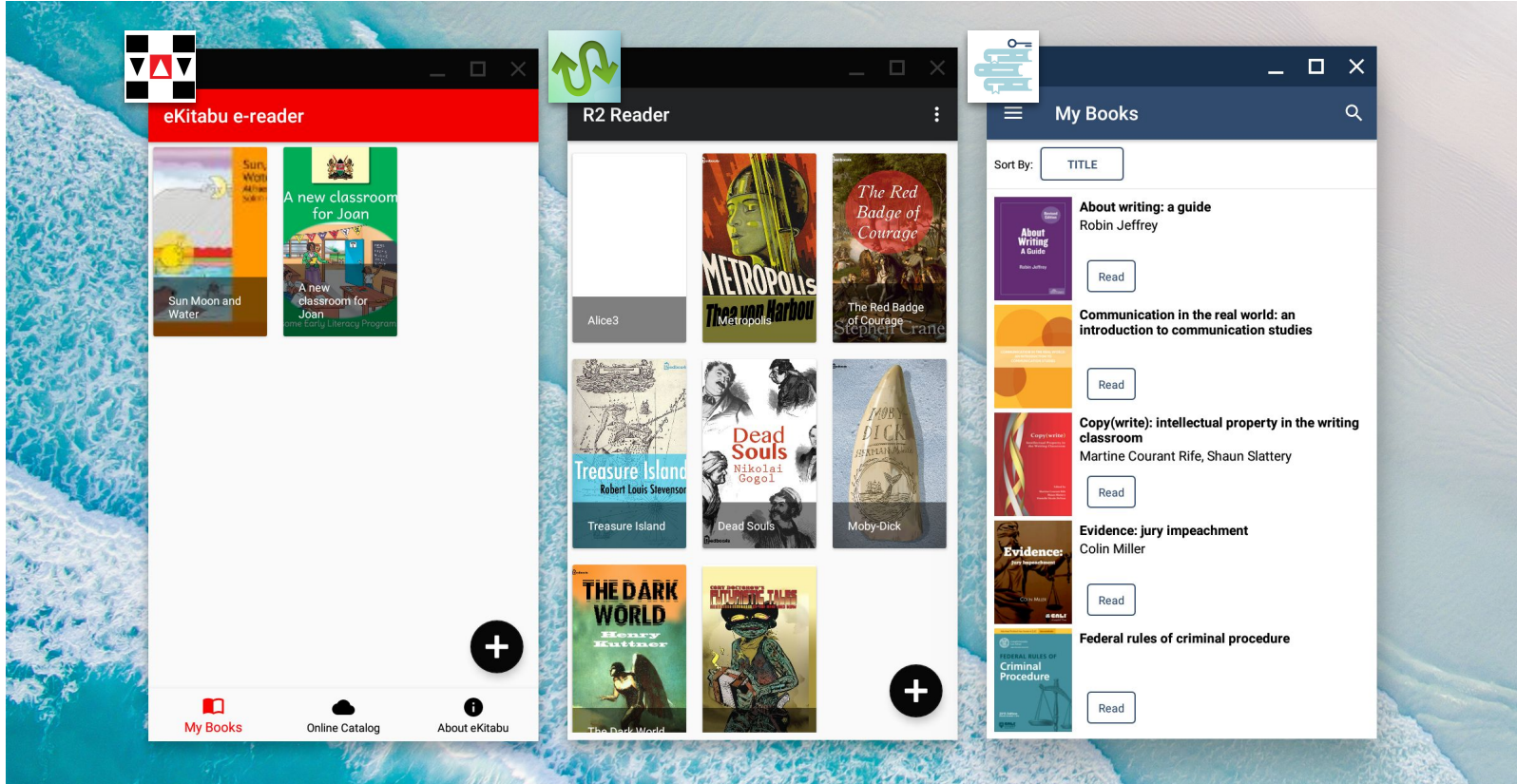
Mobile - Implementations (OPDS)



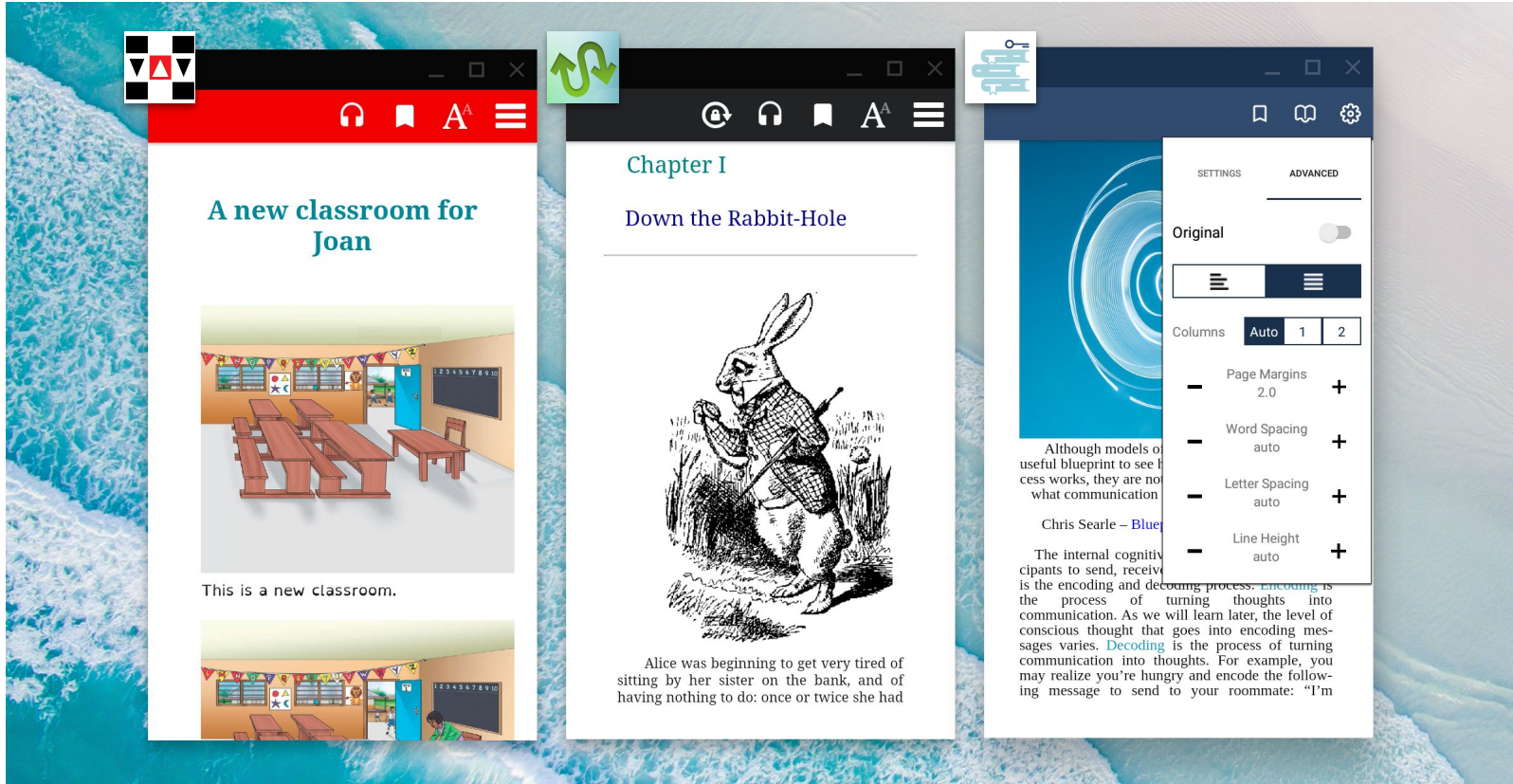
The image displays three mobile application interfaces for OPDS (Open Publication Distribution System) catalogs, set against a background of ocean waves.

- eKitabu Catalog:** Features a red header with a logo and a grid of colorful book covers. Titles include "Anansi and Vulture", "Alien's Friend", "A Very Tall Man", "Bunty and Bubbly", "Children of Wax", "Dancing", "First Man and First Woman", and "Fruit". A bottom navigation bar includes "My Books", "Online Catalog", and "About eKitabu".
- OPDS 2.0 Test Catalog:** Features a black header with a green circular arrow logo. It displays "French Classics" and "English Classics" sections with book covers for "Moby-Dick", "Le Rouge et le Noir", "Le Mystère de la chambre jaune", "Voyage au centre de la Terre", "Romeo and Juliet", and "Charlotte Brontë".
- desLibris:** Features a dark blue header with a search icon. It lists several articles or reports with "Get" buttons, such as "Enhancing Access to Justice for Women Living in Rural and Remote Areas of British Columbia...", "Emerging Lessons from the National Shipbuilding Procurement Strategy", "Restorative Justice in Matters Involving Serious Crimes", "Restorative Justice at Different Stages of the Criminal Justice Process", "Access to Justice and the Protection of Indigenous Peoples", and "Identification des mygales listées dans la CITES: Espèces Aphonopelma, Brachypelma et...".

Mobile - Implementations (bookshelf)



Mobile - Implementations (Navigator)



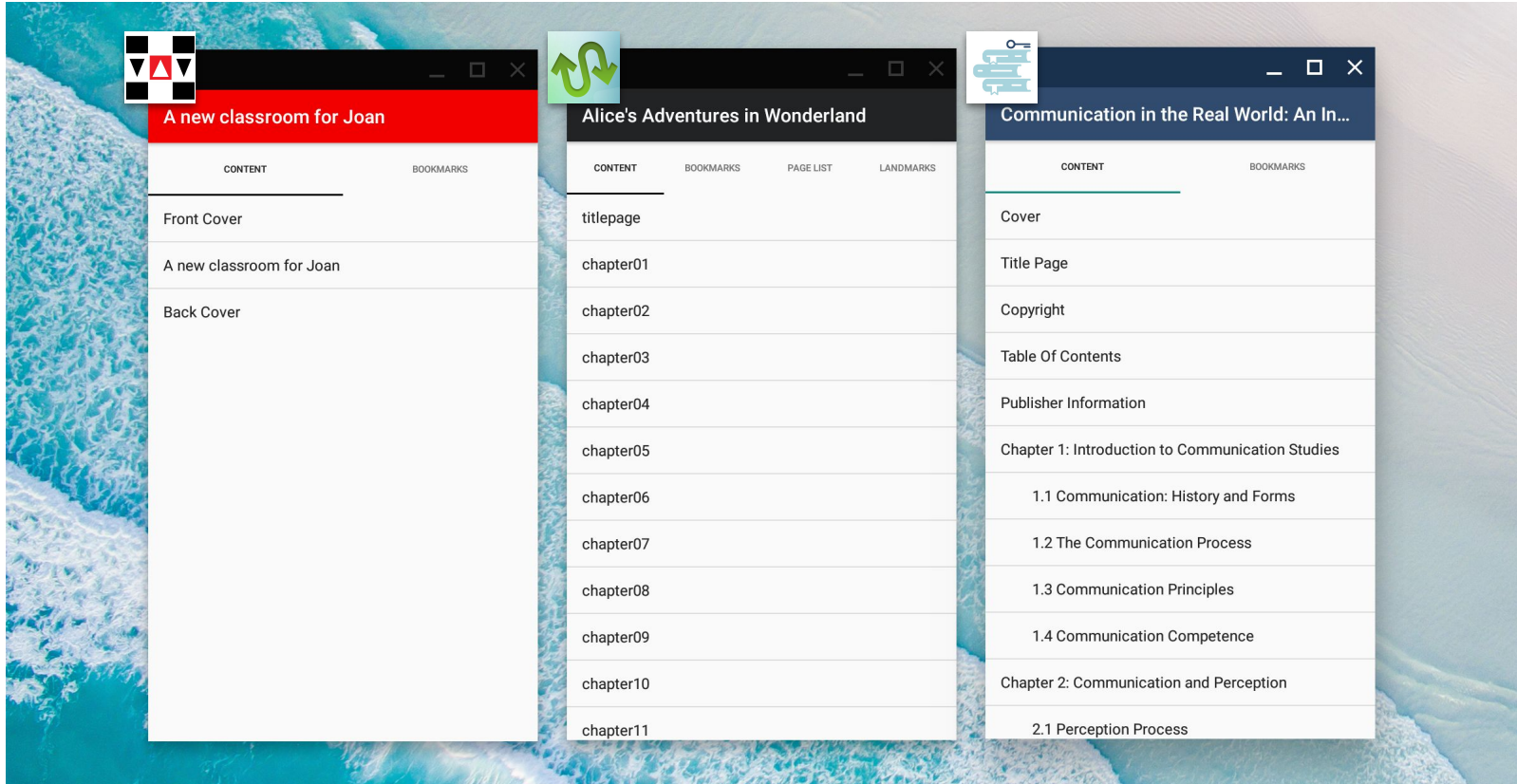
The image displays three mobile application screenshots against a background of blue waves. Each screenshot has a small icon above it: a black and white geometric pattern, a green circular arrow, and a blue key icon.

Left Screenshot: Shows a document titled "A new classroom for Joan". It features a red header bar with navigation icons (back, forward, search, menu). Below the header is a large illustration of a classroom with desks and a chalkboard. The text below the illustration reads: "This is a new classroom."

Middle Screenshot: Shows a document titled "Chapter I" with the subtitle "Down the Rabbit-Hole". It features a black header bar with navigation icons. Below the header is a large illustration of a rabbit in a checkered coat. The text below the illustration reads: "Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had

Right Screenshot: Shows a settings menu for a document. The menu is titled "SETTINGS" and "ADVANCED". It includes a "Original" toggle switch, a "Columns" section with options "Auto", "1", and "2", and a list of formatting options: "Page Margins" (2.0), "Word Spacing" (auto), "Letter Spacing" (auto), and "Line Height" (auto). The background of the settings menu is a blue circular graphic.

Mobile - Implementations (Navigator)





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Mobile - Implementations (OPDS)



← Open Textbooks Catalog

PLACING THE HISTORY OF COLLEGE WRITING: STORIES FROM THE INCOMPLETE ARCHIVE Placing the history of college writing: stories from the incomplete archive	Foundations of Computation Foundations of Computation	DC Circuits DC Circuits	Field Trials of Health Interventions: A Toolbox Field Trials of Health Interventions: A Toolbox	LIFESPAN DEVELOPMENT: Psychological Perspective Lifespan Development: A Psychological Perspective	ELOQUENT JAVASCRIPT Eloquent JavaScript: A Modern Introduction to Programming	About Writing A Guide About writing: a guide	Understanding media and culture: an introduction to mass communication Understanding media and culture: an introduction to mass communication	Law of Wills Law of wills	Communication in the real world: an introduction to communication studies Communication in the real world: an introduction to communication studies	Information Systems for Business and Beyond Information systems for business and beyond	Evidence: Jury Impeachment Evidence: jury impeachment	Copy (write): Intellectual Property in the Writing Classroom Copy (write): intellectual property in the writing classroom
FEDERAL RULES OF CRIMINAL PROCEDURE Federal rules of criminal procedure	Evidence: Rape Shield Rule Evidence: Rape Shield Rule	A Different Road to College A different road to college: a guide for transitioning non-traditional students	ORGANIZATIONAL BEHAVIOR Organizational behavior	Principles of Microeconomics Principles of microeconomics	BEYOND ARGUMENT: ESSAYING AS A PRACTICE OF (EX)CHANGE Beyond argument: essaying as a practice of (ex)change	CRIMINAL LAW Criminal law	Sources of American Law Sources of American law: an introduction to legal research	Torts: Cases and Context Torts: cases and contexts	Spatial Thinking in Planning Practice Spatial thinking in planning practice: an introduction to GIS	THE CENTRALITY OF STYLE The centrality of style	B.C. in a Global Context British Columbia in a global context	Torts: Cases and Context Torts: cases and contexts
Research Methods in Psychology Research methods in psychology	Introduction to Psychology Introduction to Psychology 1st Canadian Edition	Social problems: continuity and change Social problems: continuity and change	FINANCIAL ACCOUNTING Financial Accounting	Stand up, speak out: the practice and ethics of public speaking Stand up, speak out: the practice and ethics of public speaking	American government and politics in the information age American government and politics in the information age	Introductory Business Statistics Introductory business statistics	Sociology: understanding and changing the social world Sociology: understanding and changing the social world	Project management for instructional designers Project management for instructional designers	BEYOND DICHOTOMY: SYNERGIZING WRITING CENTER AND CLASSROOM PEDAGOGIES Beyond dichotomy: synergizing writing center and classroom pedagogies	American Government American government	ECONOMICS Principles of economics	
Project Management from Simple to Complex Project management from simple to complex	Media Studies 101 Media studies 101	Civil Procedure: Pleading Civil procedure: pleading the plaintiff's complaint	Applied Probability Applied probability	Forest Measurements: An Applied Approach Forest measurements: an applied approach	Astronomy Astronomy	Financial Strategy for Public Managers Financial strategy for public managers	Web literacy for student fact-checkers Web literacy for student fact-checkers	An Introduction to Statistics An introduction to statistics	HUMAN RESOURCE MANAGEMENT Human resource management	The Story of Contract Law Formation The story of contract law: formation	United States Copyright Law United States copyright law: title 17 of the United States code	Introduction to Basic Legal Citation Introduction to basic legal citation
Sustainability: A		Psychology		Understanding	Wetlands Law		PORTUGUÊS	THE				

Mobile - Implementations (ePub reflowable)



Chapter 2

The next morning the youth discovered that his tall comrade had been the fast-flying messenger of a mistake. There was much scoffing at the latter by those who had yesterday been firm adherents of his views, and there was even a little sneering by men who had never believed the rumor. The tall one fought with a man from Chatfield Corners and beat him severely.

The youth felt, however, that his problem was in no wise lifted from him. There was, on the contrary, an irritating prolongation. The tale had created in him a great concern for himself. Now, with the newborn question in his mind, he was compelled to sink back into his old place as part of a blue demonstration.

For days he made ceaseless calculations, but they were all wondrously unsatisfactory. He found that he could establish nothing. He finally concluded that the only way to prove himself was to go into the blaze, and then figuratively to watch his legs to discover their merits and faults. He reluctantly admitted that he could not sit still and with a mental slate and pencil derive an answer. To gain it, he must have blaze, blood, and danger, even as a chemist requires this, that, and the other. So he fretted for an opportunity.

Meanwhile he continually tried to measure himself by his comrades. The tall soldier, for one, gave him some assurance. This man's serene unconcern dealt him a measure of confidence, for he had known him since childhood, and from his intimate knowledge he did not see how he could be capable of anything that was beyond him, the youth. Still, he thought that his comrade might

obscurity, but, in reality, made to shine in war.

The youth would have liked to have discovered another who suspected himself. A sympathetic comparison of mental notes would have been a joy to him.

He occasionally tried to fathom a comrade with seductive sentences. He looked about to find men in the proper mood. All attempts failed to bring forth any statement which looked in any way like a confession to those doubts which he privately acknowledged in himself. He was afraid to make an open declaration of his concern, because he dreaded to place some unscrupulous confidant upon the high plane of the unconfessed from which elevation he could be derided.

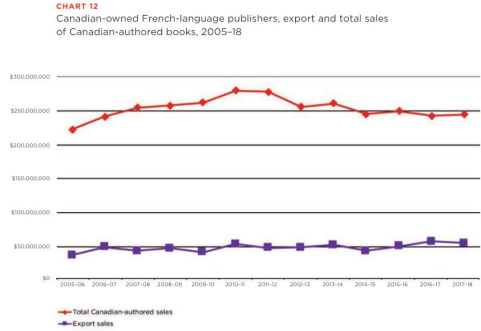
In regard to his companions his mind wavered between two opinions, according to his mood. Sometimes he inclined to believing them all heroes. In fact, he usually admitted in secret the superior development of the higher qualities in others. He could conceive of men going very insignificantly about the world bearing a load of courage unseen, and although he had known many of his comrades through boyhood, he began to fear that his judgment of them had been blind. Then, in other moments, he flouted these theories, and assured himself that his fellows were all privately wondering and quaking.

His emotions made him feel strange in the presence of men who talked excitedly of a prospective battle as of a drama they were about to witness, with nothing but eagerness and curiosity apparent in their faces. It was often that he suspected them to be liars.

He did not pass such thoughts without severe condemnation of himself. He dinned reproaches at times. He was convicted by himself of many shameful crimes against the gods of traditions.

In his great anxiety his heart was continually clamoring at what he considered the intolerable slowness of the generals. They seemed content to perch tranquilly

Mobile - Implementations (ePub fixed)

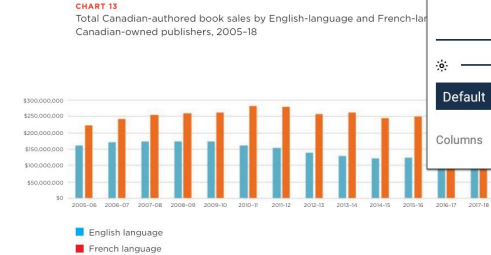


A quick comparison to the experience of French-language Canadian-owned publishers (see Chart 12) shows that they also have experienced a decline in total sales of Canadian-authored books in the domestic market, moving from \$250 million in 2011-12 to \$190 million in 2016-17. The decline was 17 per cent, considerably less than the 44 per cent in English Canada.

As with English-language books, exports have been strong but there has been no recent increase (Chart 13).

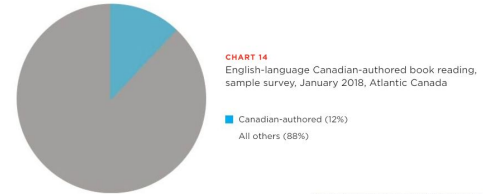
A decline in Canadian-owned publishers' sales of Canadian-authored books in Canada is a strong indicator of a decline in Canadian book reading. But it is an indirect indicator. The data that would provide a direct measure of this phenomenon is statistics on the leisure reading of Canadians, and in particular how much of what kinds of books Canadians are reading.

There is good survey data about the amount of time people spend on leisure reading of books – and this time commitment has held up well in the face of challenges from all forms of screen-based leisure activities. What is not measured is the authorship and other

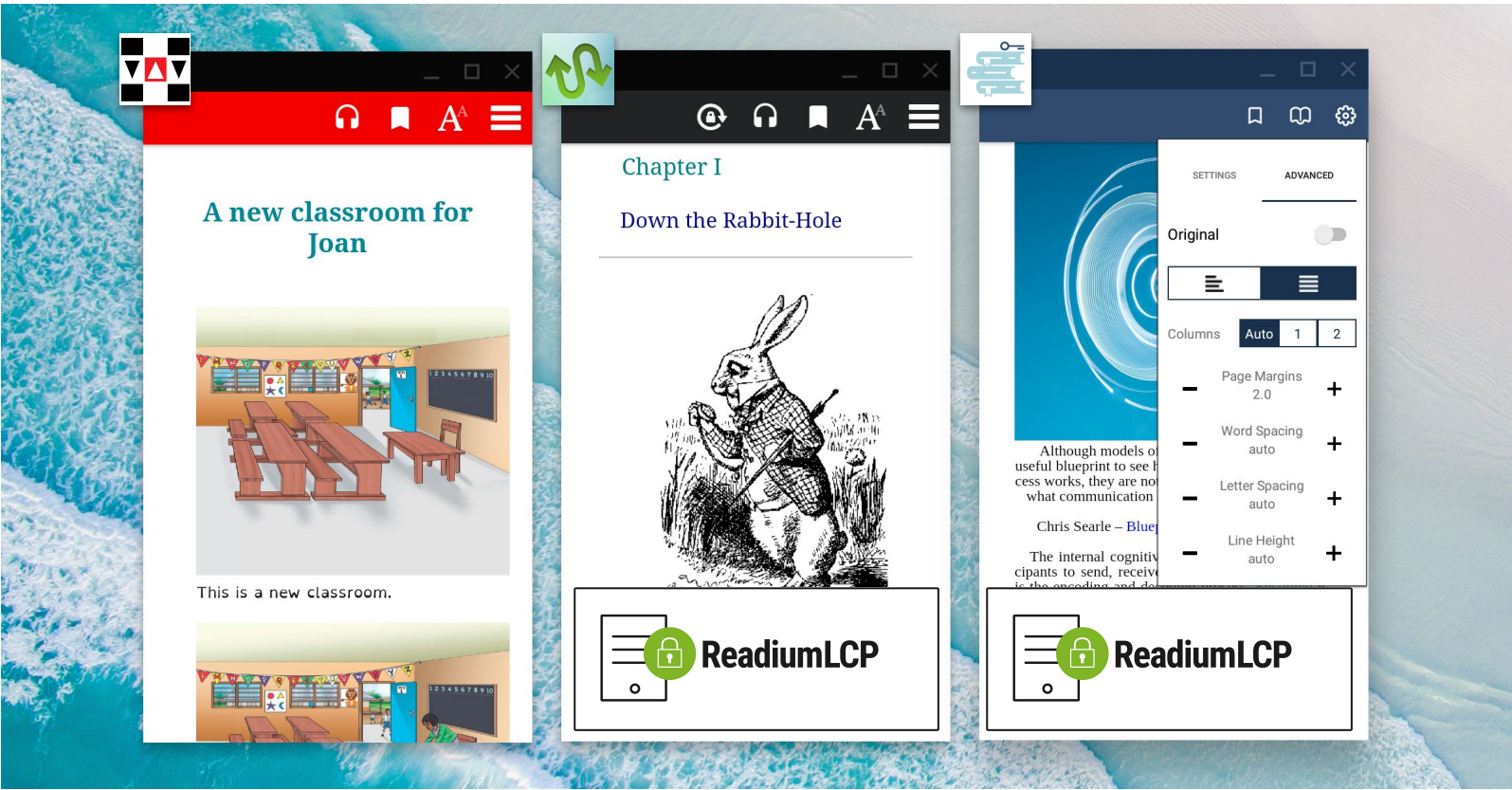


specifics of the books people are reading. There is currently no ongoing reporting on the types of books Canadians are reading, as opposed to what they are buying. We have to rely on a variety of one-time reader studies and surveys to answer this question.

A major Statistics Canada study of reading carried out with a very large sample in 1978 found that Canadian books then accounted for 1.6 per cent of reading. Studies in the 1980s and 1990s pointed to the fact that this number had increased significantly. However, in 2005 a major study put Canadian-authored books at 27 per cent of purchases and 12 per cent of reading. A small survey in December 2017–January 2018 put the number of Canadian-authored books read by that sample at 12 per cent for Atlantic Canadian readers (Chart 14).



Mobile - Implementations (LCP)



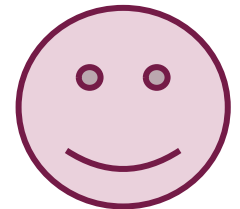


Thank you!



(2019)
June 25-26

- GitHub.com/readium
 - r2-`<module>`-swift, r2-`<module>`-kotlin
 - r2-testapp-swift, r2-testapp-kotlin
- ... get involved! :)
- <https://www.edrlab.org>





Questions?

DEMO : iOS: <https://github.com/readium/r2-testapp-swift>
Android: <https://github.com/readium/r2-testapp-kotlin>