Getting Started with Tizen SDK: How to develop a Web app

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Introduction to Tizen SDK
Tizen Platform (2/2)
Tizen SDK Features – an Overview

• An Integrated set of Tools for Developing The Tizen App
  • IDE, GUI Builder, Emulator/Simulator, Debugging, Profiling, Add-On SDK
Features[1] - IDE for Web and Native Apps

- **Development Environment for generating Codes**
  - Project Management (Mobile-Web, Mobile-Native and Wearable-Web)
    - W3C based Web Application, C/C++ based Native Application
    - Mobile and Wearable Profile
- **Assisting Code Editing**
  - Code Navigation, Code Hovering, Code Complete

- Develop Web App UI with GUI builder
  - Edit Multi-resolution and Manage Multi aspect-ratio
  - Generate Code to HTML/CSS/JS

• Guide Reference Resolution for Multi devices
  • Can apply One App to Different resolution Screen
• N-Screen supports several layouts for multiple screen size
  • The App UI Can fit to various Aspect-Ratio Screen using CSS3 Media Query

Guide Reference Resolution

<table>
<thead>
<tr>
<th>Real device resolution</th>
<th>Reference Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>540 X 960</td>
<td>360 X 640</td>
</tr>
<tr>
<td>720 X 1280</td>
<td></td>
</tr>
<tr>
<td>1080 X 1920</td>
<td></td>
</tr>
</tbody>
</table>

Aspect-ratio conversion with CSS3

- 1:1
- 10:16
- 3:4
### Examples of Reference Resolution

<table>
<thead>
<tr>
<th>Device Categories</th>
<th>Physical Resolution</th>
<th>Reference Resolution</th>
<th>Device-pixel-ratio</th>
<th>Aspect-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wearable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>320 X 320</td>
<td>320 X 320</td>
<td>1</td>
<td>1:1</td>
</tr>
<tr>
<td></td>
<td>360 X 480</td>
<td>360 X 480</td>
<td>1</td>
<td>3:4</td>
</tr>
<tr>
<td></td>
<td>480 X 800</td>
<td>320 X 533</td>
<td>1.5</td>
<td>3:5</td>
</tr>
<tr>
<td>Mobile</td>
<td>540 X 960</td>
<td></td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>720 X 1280</td>
<td>360 X 640</td>
<td>2</td>
<td>9:16</td>
</tr>
<tr>
<td></td>
<td>1080 X 1920</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>800 X 1280</td>
<td>800 X 1280</td>
<td>1</td>
<td>10:16</td>
</tr>
<tr>
<td></td>
<td>1600 X 2560</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td>1280 X 720</td>
<td>1280 X 720</td>
<td>1</td>
<td>16:9</td>
</tr>
<tr>
<td></td>
<td>1920 X 1080</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>3840 X 2160</td>
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<td>2</td>
<td></td>
</tr>
</tbody>
</table>

- Launching Apps on Emulators without Devices
  - Emulator Manager set Resolutions and Launch Emulators
- Event Injector generate Real device Signal for Emulator

- Support various debugging tools
  - with GDB, Log tracer, Dynamic Analyzer
- Dynamic Analyzer
  - H/W Resource usage (CPU, GPU, Memory, Power, Network)
  - UI Event Point, Tracing Function Call stack, Used API Lists

![Dynamic Analyzer Screen](image.png)

- **Dynamic Analyzer for Profiling**
  - On Target/Emulator: Gathering HW and SW information
    - SWAP (System-Wide Analyzer of Performance)
  - On SDK: Displaying Visual Information in real time
Features[5] - Add-On SDK to extend services

- Providing Extended Features/Services using Add-On SDK
  - Server-Side services, HW Dependent APIs, Analysis Tools
  - Download from
    - www.tizen.org, Manufacturer, 3rd party site

![Tizen SDK and Add-On SDKs diagram](image)
How to Build Tizen Web Application
Visit Web Site

• Web Site: [http://www.tizen.org](http://www.tizen.org)
  • Register and Create New Account
• Online Help: [http://developer.tizen.org/documentation](http://developer.tizen.org/documentation)
  • For Tizen App developers and Tizen Platform Developers
Tizen Documents on Web Page and SDK

• Provide Help Content for Developing Mobile & Wearable App

- Getting Started with Tizen
  - Overview
  - Tizen SDK Installation
  - Development Environment

- Tizen Mobile Native App Programming
  - Basics of Native App Programming
  - IDE and Tools
  - Application Development Process
  - Multiple Screen Support Guide
  - Programming Guide
  - Tutorials
  - API Reference
    - Sample Applications

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- Tizen Wearable Web App Programming
  - Basics of Web App Programming
  - IDE and Tools
  - Application Development Process
  - UI Layout Guide
  - Programming Guide
  - Web IME Programming Guide
  - Tutorials
  - API References
    - Sample Applications
Download SDK

• Download SDK Installer at https://developer.tizen.org/sdk
  • Supported OS – Ubuntu 64/32bit, Windows 64/32bit and MacOS 64bit
Install SDK

- The Advanced Option Select the SDK images from
  - Downloaded SDK Image
  - Package server (http://download.tizen.org/sdk/packages-2.3b)
- Tizen 2.3 SDK change options
  - Typical installation – Select one of 2 profiles (Mobile/Wearable)
  - Custom installation – Web IDE, Native IDE, Emulator and Tools
Create Web Application Project

- Select Templates or Samples in Project Wizard
Set Web App Configuration (config.xml)

- Configuration File (config.xml) has
  - Widget, Feature, Privilege, Policy, Localization, Preferences, And **Tizen**
- Configuration Editor to modify config.xml easily
Design the application UI

- The Tizen SDK provides GUI Builder for Generating Web App UI

- Palette for widgets
- UI Editing Window
- Properties view
- Pages view
Run and debug your application

- Run Tizen App by click “Run As” Menu
- The Tizen App can be run on ...
  - Tizen Reference Targets
  - Tizen Emulator
  - Tizen Web Simulator (using Internal Web Browser)
Run Apps On Emulator & Simulator

- The emulator run App and the Tizen Platform
- Simulator run your application on web browser
  - further faster and more light-weight
Wrap-up: Tizen 2.3 SDK provide

- **Mobile** and **Wearable** Profiles of Tizen in One environment
- Developing **Web** applications and **Native** Applications
- GUI Builder Supporting Various **Resolution** and **Aspect Ratio Screens**
- **Emulators** Running for Mobile/Wearable profiles
- Debugging with GDB for Native and Web Inspector for Web
- Dynamic analyzer to analyze the application at runtime
Future Plan

• Integrating SDK of **TV** and **IVI** Profiles into **One SDK**
• GUI Builder for Native Application
• Advanced **Static Analysis tool** for Web App and Native App
• Automatic **App UI Tester**
• Enhanced **Documentation** at Tizen.org
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SHANGHAI
TIZEN开发者峰会（上海）