

# Tizen: The Lesser Known Gem

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**Abstract**—With the major players in the OS world – Windows and MacOS for desktop and Android and iOS for mobile – there is a lesser known player Tizen. Was once backed by big companies and now loved by the community. Tizen OS is a promising take for mobile OS on low to high end devices.

**Keywords**—mobile; operating systems; tizen

## I. INTRODUCTION

It was the 2010 when news are buzzing with two big companies -Intel and Nokia – joined together to combine their mobile OS assets Moblin and Maemo to create a new Linux based open source operating system called MeeGo revealed during the Mobile World Congress (MWC) [1]. But MeeGo was presented differently until the MWC 2013 as Tizen OS by Samsung and Intel [2]. This operating system has a rather colorful history but also has an obvious potential in showcasing HTML5-powered applications plus capability to run native Android apps too. ...

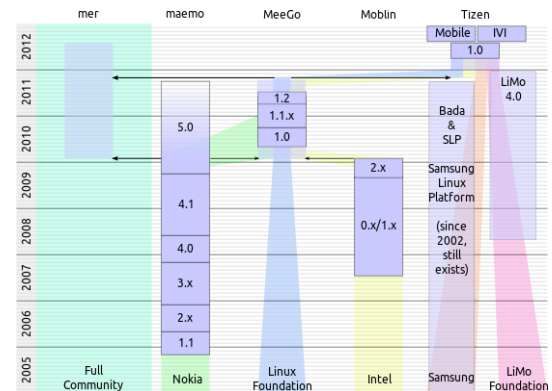
## II. HISTORY AND DEVELOPMENT

### A. Major Companies

Nokia's Maemo and Intel's Moblin decided to merge and build MeeGo [2]. At this time as well, Samsung is on the works of building an operating system of its own apart from Android called Bada [3]. When Intel left MeeGo didn't took long and was abandoned. Since then, the community of developers and supporters urged to migrate to a new operating system that is Tizen. In 2012, Samsung announced the merging of Bada into the Tizen project. A year later, Samsung abandoned Bada and continue the development to Tizen [4][5][7].

### B. Ecosystem and Community

The complex history of projects merging into Tizen brought a lot of advantages to the OS especially in supporting apps that were originally written for Bada [5] apart from its unique approach that is HTML-powered mobile applications. This is made possible by the efforts of the open source development community and the Linux Foundation. [6]



MeeGo timeline by [Nobelium](#)

## III. DEVELOPING IN TIZEN

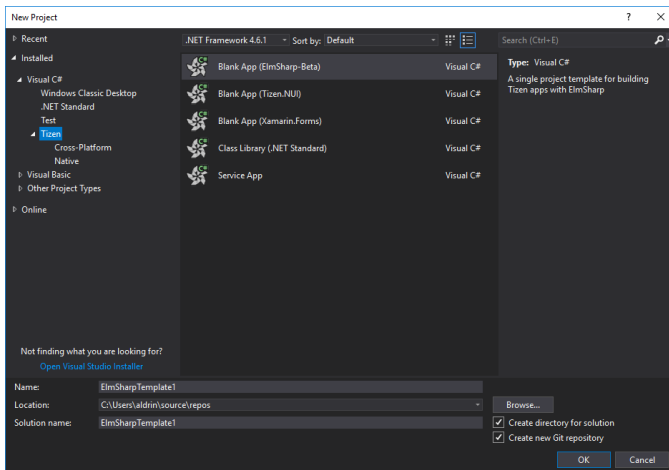
Today, Tizen OS does not only dwell on mobile devices anymore but also to other broad spectrum of devices such as Smart TVs and wearable devices [8]. It's only becoming more exciting for developers seeking to widen their knowledge and skills on OSes. The developer experience is just expanding.

### A. Development Environment

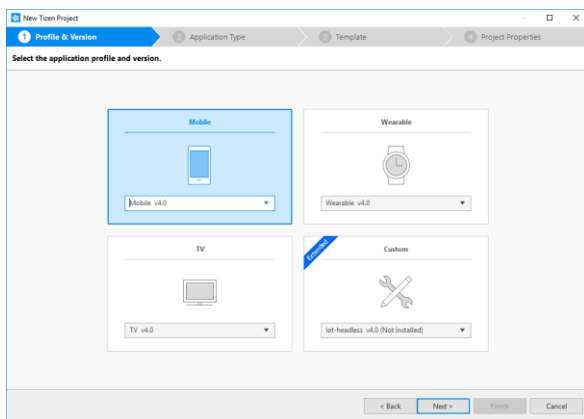
Tizen ships with its own Tizen SDK and a Tizen Studio IDE available at the [official developer website](#).

For .Net developers, there is also a [Visual Studio Tools for Tizen](#).

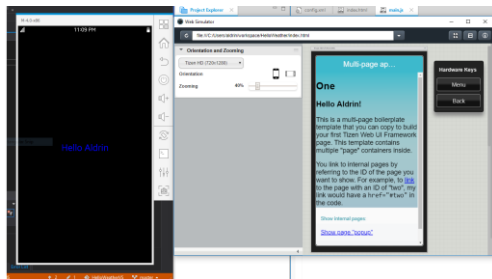
The similarities between the two is that they require Java JRE/SDK to be installed first as a prerequisite of the Tizen SDK. The difference between the two development environments is that the .Net tool only supports native app development but also offers cross-platform development using Xamarin.Forms. On the other hand, Tizen SDK offers both native and web development.



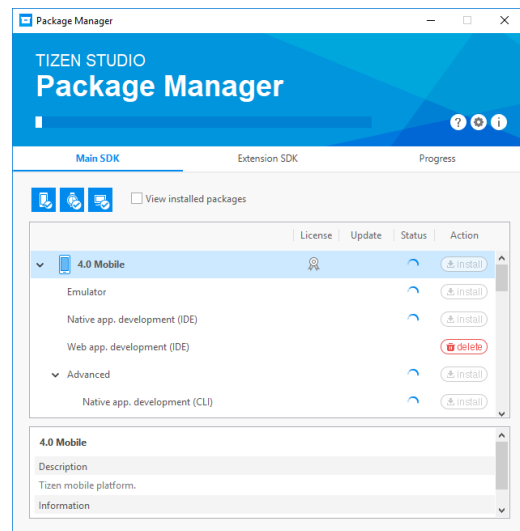
*Projects provided by Visual Studio Tools for Tizen*



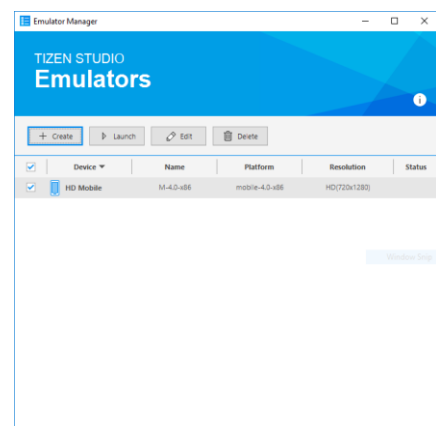
*Complete Tizen application profiles*



*Left is a native app sample on Visual Studio running on a device emulator. On the right is a web app sample on Tizen Studio running on a web simulator device (Chrome).*

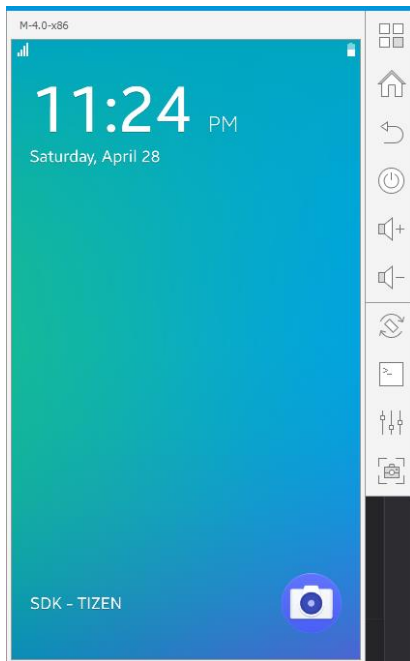


Just like Android and iOS mobile development, Tizen also ships with **Emulators** where you can create and customize mobile device emulators with different specifications.

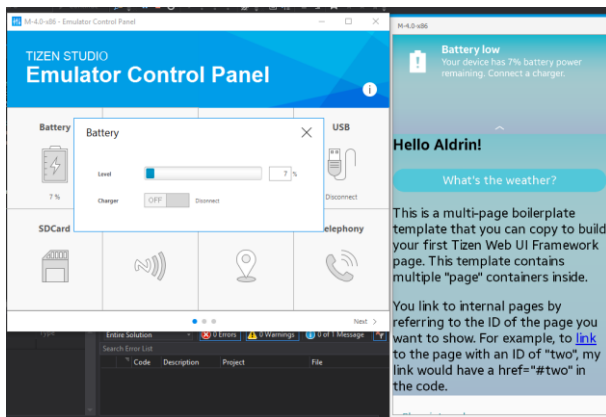


## B. Know the tools

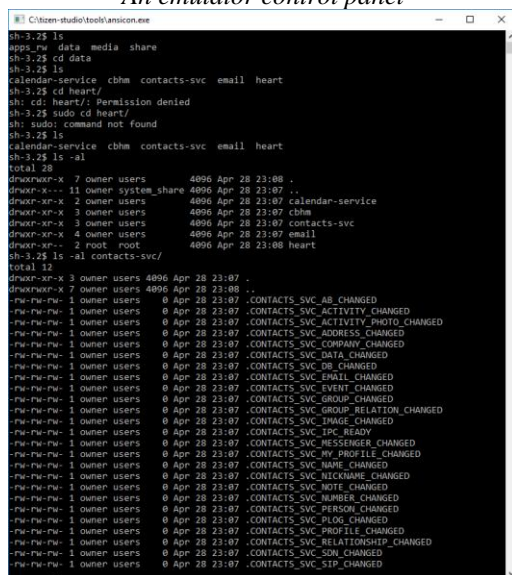
Tizen Studio comes with a **Package Manager** that you can use to install SDK components such as an emulator device, package certificates, a command line interface, etc.



*A running Tizen emulator*



*An emulator control panel*



*An adb-like device shell interface*

#### IV. DEVELOPING A SIMPLE WEATHER APP

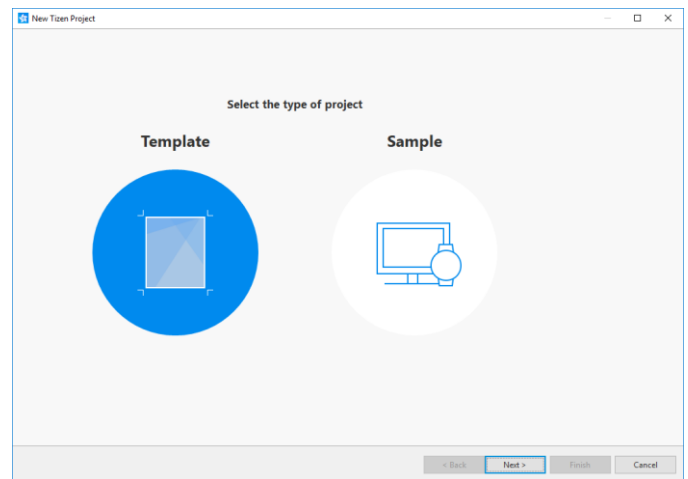
Being a developer, I can't let this opportunity to slip and not try this platform. I decided to create a simple app that tells the user weather information.

For this app you will need:

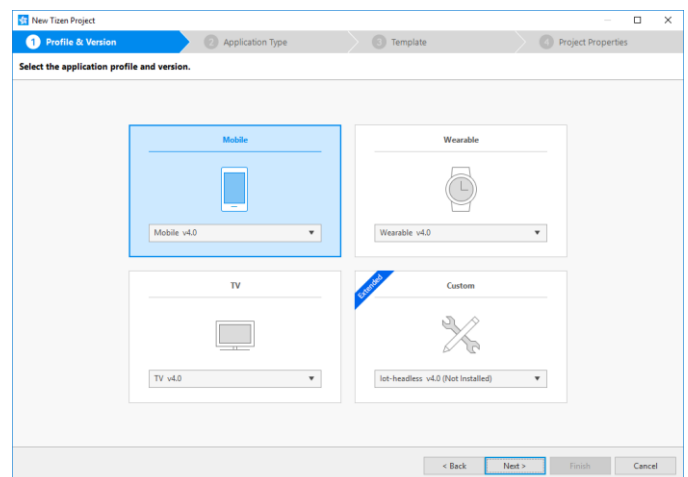
- OpenWeatherMap API Key from <https://openweathermap.org/api>
- Basic HTML and Javascript knowledge

##### A. Starting a Project

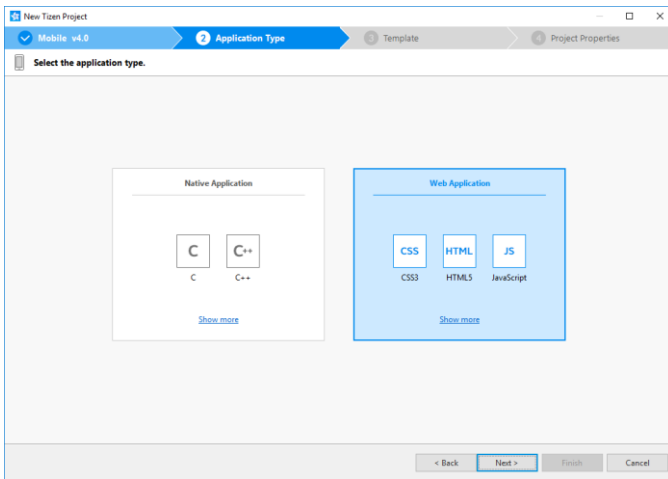
To start a project, press **Alt+Shift+N** or click **File > New > Tizen Project**.



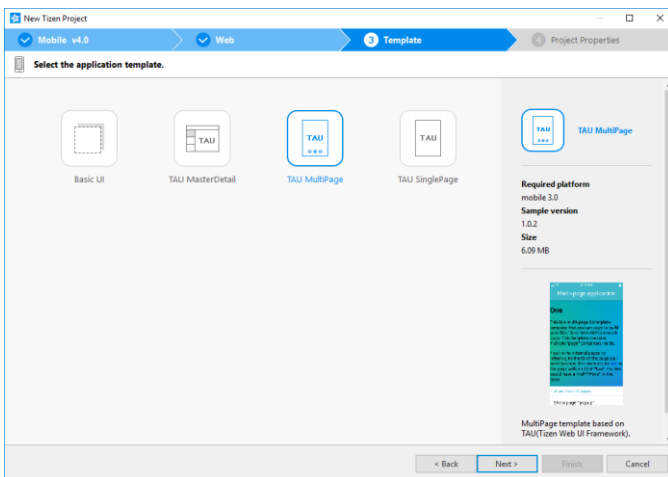
I happen to select **Sample** and build on it. For your case, you can choose **Template**. It's the same. Click Next.



Here, select **Mobile**. Then click Next.



Choose **Web Application** and click Next.



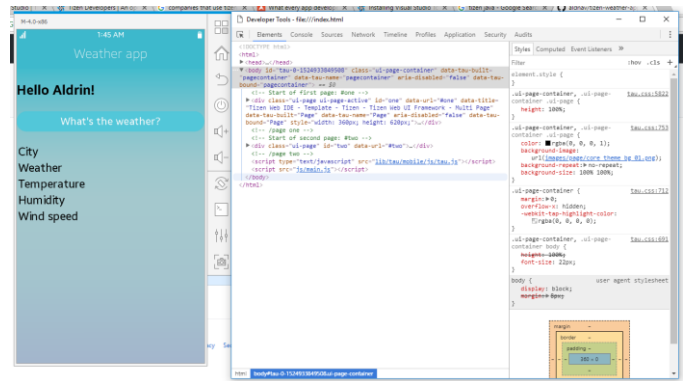
Select the template that you want and hit next. On the Project Properties page set an application name and finally hit **Finish**. The next screen will be the IDE itself with all the files in the project loaded and ready for you work on.

## B. Debugging

From this moment, it's important for you to know your options in debugging. Ultimately, every build will be run on the emulator and just use the integrated Chrome Devtool to debug the application.

Hit Run > Debug As > Tizen Application

Wait for the emulator to load your application and it will open a dev tool that looks like this. Then you will be able to debug the application just like a normal application.



## C. Completing the Application

Insert the following code snippets to complete the application.

```
// main.js
window.onload = function() {
    var page = document.getElementsByClassName("ui-page-
active")[0];
    page.querySelector("#weather-
btn").addEventListener("click", getWeather);

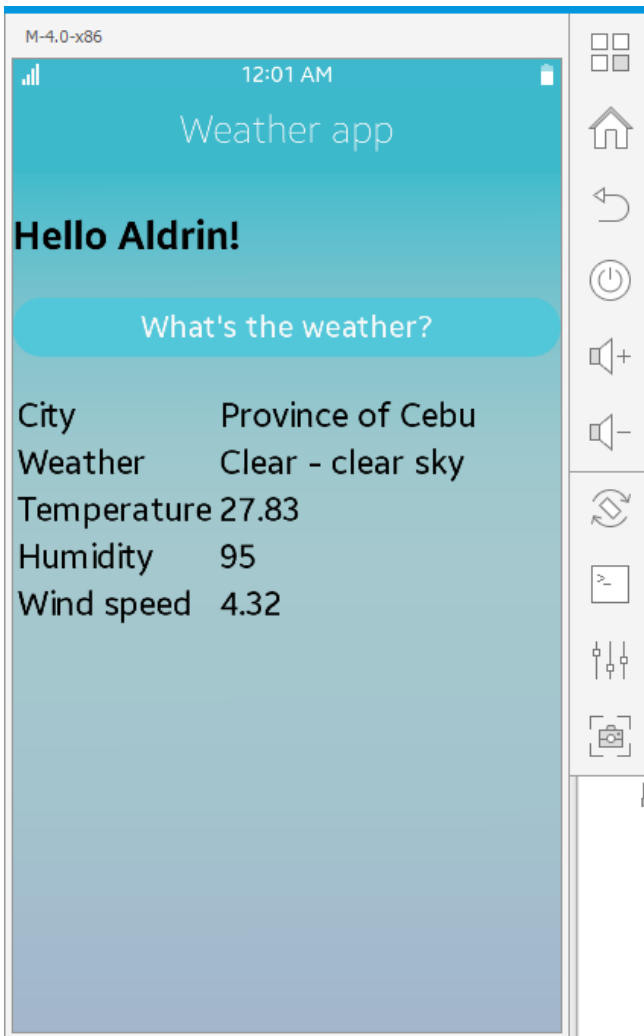
    function reqListener () {
        var result = JSON.parse(this.responseText);
        page.querySelector("#city").innerHTML =
result.name;
        page.querySelector("#weather").innerHTML =
result.weather[0].main + " - " +
result.weather[0].description;
        page.querySelector("#temp").innerHTML =
result.main.temp;
        page.querySelector("#humidity").innerHTML =
result.main.humidity;
        page.querySelector("#wind").innerHTML =
result.wind.speed;
    }

    function getWeather() {
        var oReq = new XMLHttpRequest();
        oReq.addEventListener("load", reqListener);
        oReq.open("GET",
"http://api.openweathermap.org/data/2.5/weather?id=1717511</p>
&units=metric&appid={{appid}}");
        oReq.send();
    }
};

# index.html
<button id="weather-btn">What's the
weather?</button>
<p id="weather-result">
    <table>
        <tr>
            <td>City</td>
            <td id="city"></td>
        </tr>
        <tr>
            <td>Weather</td>
            <td id="weather"></td>
        </tr>
        <tr>
            <td>Temperature</td>
            <td id="temp"></td>
        </tr>
        <tr>
            <td>Humidity</td>
            <td id="humidity"></td>
        </tr>
        <tr>
            <td>Wind speed</td>
            <td id="wind"></td>
        </tr>
    </table>
```

The complete application looks like this.

```
# config.xml
<access origin="*"
subdomains="true"></access>
<tizen:privilege
name="http://tizen.org/privilege/internet"/>
```



## ACKNOWLEDGMENT

I would like to thank my colleagues and friends for giving me encouragement and contribute in the discussion of mobile development.

## REFERENCES

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- [2] <https://www.xda-developers.com/tizen-os-brief-history-roots-and-current-status/>
- [3] <https://web.archive.org/web/20101223231522/http://www.bada.com/samsung-wave-first-bada-smartphone-hits-the-market/>
- [4] <https://web.archive.org/web/20130228062542/http://www.fiercemobilecontent.com/story/samsung-scraps-bada-os-folds-it-tizen/2013-02-25>
- [5] <https://web.archive.org/web/20130228003853/http://www.theverge.com:80/2013/2/25/4026848/bada-and-tizen-to-merge>
- [6] <https://www.tizen.org/ko/about/about-linux-foundation?langredirect=1>
- [7] <https://www.theverge.com/2011/9/28/2456253/meego-is-dead-resurrected-as-tizen-another-new-linux-based-open>
- [8] <https://developer.tizen.org/ko?langredirect=1>

Complete code is available on my github <https://github.com/alldnav/tizen-weather-app>