Basic information about Eclipse Dirigible

Eclipse Dirigible is a cloud development toolkit providing both development tools and runtime environment. It is an open source project that provides Integrated Development Environment as a Service (IDEaaS) as well as runtime containers integration for the running applications. It supports full development life-cycle of on-demand applications by leveraging in-system programming models and rapid application development techniques. The environment itself runs directly in browser and therefore does not require additional downloads and installations. It packs all the needed components, which makes it self-contained and well integrated software bundle that can be deployed on any Java based Web Server.

Motivation to use the platform

The natural choice of a project like Dirigible targeting development scenarios in favor of the open-source community and at the same time to be respected by the enterprises is the Eclipse Foundation. Recent initiatives and projects related to the cloud development scenarios, such as Orion, Flux and Che, makes Eclipse the most viable organization in this context.

You can use the Dirigible for:

- **Education:**
  You can develop student projects, test different technologies and scenarios, learn popular programming languages, etc.
- **Development:**
  Eclipse Dirigible provides everything you need for your development project:
  - Application server: Eclipse Dirigible integrates a collection of execution engines covering all the aspects of a modern cloud application - database models, scripting RESTful services, user interfaces, work-flows, scheduled jobs, security definitions, and even template engines.
  - Content repository: Projects artifacts, which are authored via the Web IDE and executed by the engines of the App Server at runtime, are stored in the Content Repository. This simplifies the life-cycle management, governance, scaling, and other mission critical aspects of the cloud applications built with Eclipse Dirigible.

- Web IDE: Eclipse Dirigible provides full-fledged Web IDE with variety of Editors, Views, Wizards and Preference pages grouped in Perspectives - the same user experience that you are already familiar with.
- Variety of features.

❖ **Business:**
You can easily develop, document, and monitor your business applications, taking full advantage of the diverse selection of features and services offered by Eclipse Dirigible.

❖ **It is FREE to use:**
All the Eclipse Dirigible project's source code and sample applications are licensed under Eclipse Public License - v 1.0 and maintained at GitHub.

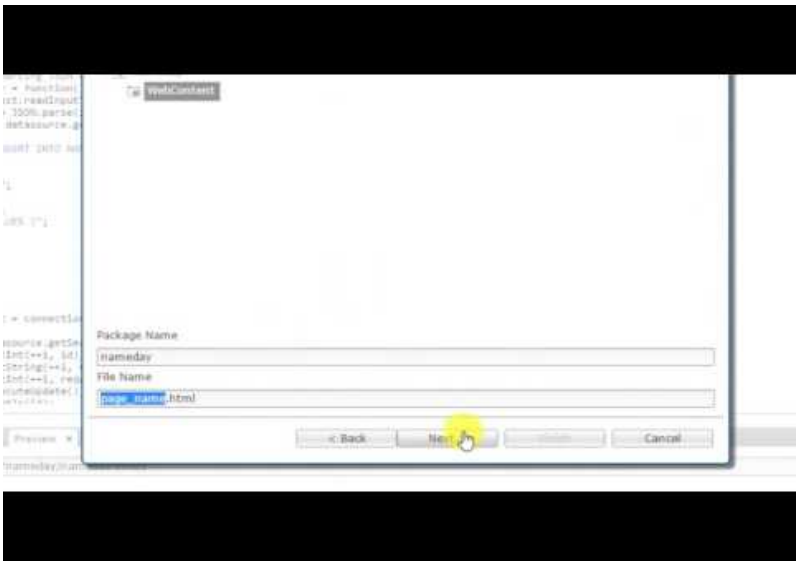
<u>An example of what can be developed on this platform</u>

Eclipse Dirigible allows us to create:

✓ create Back-End services with JavaScript, Groovy and Ruby or to generate fully compliant RESTful services.
✓ create Front-End interfaces with Bootstrap, jQuery, AngularJS and OpenUI5 for the RESTful services.
✓ create and manage database (e.g table creation and management, database explorer view, SQL console).
✓ create mobile applications for iOS and Android written entirely in JavaScript.

<u>Detailed description of the example</u>

Let`s say you want to create a database for educational purposes. First of all, you create a new project, name it and everything is ready for you. You can easily create all your data structures, creating the database table and it`s attributes, types, length if needed and keys. When you are ready you can publish your project. You can check this tutorial of mobile application – "*Register for nameday*".



We suggest you a written version of the video:

1. We go into the Eclipse Dirigible Web IDE. We'll start off by creating an empty project.
2. We click on New in the workspace explorer on the left and from the dropdown menu select Project.
3. In the new project wizard we give our project the name "nameday" as that's what we're going to use it for. Click next.
4. We can select one of the predefined project templates, but as we won't be needing that, we select Black application and click Finish.
5. In the left under the workspace explorer you see the basic structure of one Eclipse Dirigible Project. You have the DataStructures, MobileApplications, ScriptingServices and so on.
6. Right click on the project and under New select Data Structure.
7. We want to crate a Relational Database Table so we select it and click next.
8. The first column of the table will be the id: Click add to add a new column. For the column name type ID, give it an INTEGER type and check the not null and primary key boxes. The second column is the name of the person who's going to register for the party. Again, click Add and for the column name type NAME, select VARCHAR type and set it's length to 255. This time select only the not null checkbox. The last column we want to add is the age. Click Add and for name type AGE, select INTEGER type and again select the not null checkbox.
9. Give the table a name – we'll call it nameday.table
10. Now you see in the workspace explorer under DataStructures we have our table defined and in the editor in the right you can see it's definition in JSON format.
11. For this data structure we want to generate a scripting service providing CRUD database operations. For this purpose, right click on the project and under New select ScriptingService. From the available templates select JavaScript Entity Service on Table. On the next page we select our table that we created. It's called nameday. Give the service a name – we'll call it nameday.js and click finish.
12. As you can see in the workspace explorer, under ScriptingServices Eclipse Dirigible generated for us an entity based on the table, a RESTfull on the endpoint nameday.js, a swagger API documentation and a library providing CRUD database operations.
13. Okay, now we want to create the application, people are going to use to register for the nameday. Right click on the entity and under Generate select User Interface for Entity Service. From the predefined templates select Mobile Create Entities as this is the most appropriate template for our case where we want to register people. Click next and we have all the fields defined for this entity. We select the ones we want to be visible during registration and change the text of the labels that are displayed. For name we'll put "Your name" and for age – "Your age". Click next. Now we specify the main file that tabris.js is going to load our application from. We'll give it the name register.js and we'll put in under the package register. Click next and give the application the title "Register for nameday". Click on finish and now under MobileApplications in the workspace explorer we have the package register and a basic

tabris.js project created for us. Now for this to be more personalized we'll open the register.js file and change the message displayed when successfully created a new entity. On line 80 change the text to "You have successfully registered for the nameday" and click save.

14. I want a separate application in which I can view who's registered for the nameday. Again, right click on the nameday entity and under Generate select User Interface for Entity Service. Now from the predefined templates select Mobile List and Manage Entities. Select the columns that I want to view, click next and give the main file the name "manage.js" and put in under the package manage. Click next and give the application the title "View who's coming". When we select Finish, we have another application generated for us under the MobileApplications directory. This one is generated under the manage package.
15. Now we take out our phones, open Tabris.js and go to the URL tab. Enter the URL that I've typed here (MAKE SHORT-URL FOR REGISTRATION AND MANAGEMENT) and click Connect. You're prompted with the registration application. As you can see the labels and the title are the ones we've put. We'll register a fake user with the name George and we'll set his age to be 23. Click Save and as you can see we have the confirmation message we put a while ago.
16. Swipe from the right to the left end of the screen, click on the home icon and this time go into the manage application. Now in the URL we substitute 'register' with 'manage' and click connect. Now we see the people who've registered for the nameday. You see the id of the record on the top right of the row, George's name and his age. If we click on the row, we can edit this record, for example, we can change his age if we know he lied. Click save and the data is updated. We can pull to refresh if anyone has registered in the meantime and the new records will be displayed. You can swipe left or right to delete a record by pressing the Remove button.