Utilisation de la brique LEGO EV3 avec Automgen

Using EV3 brick with Automgen

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Ce manuel décrit l'utilisation de la brique LEGO Ev3 avec Automgen.

This manual describes the use of EV3 LEGO brick with Automgen.

Le post-processeur JAVA d'Automgen est utilisé pour générer un source JAVA à partir d'Automgen. Ce source est ensuite compilé et transféré vers la brique à partir du logiciel Eclipse utilisant le plugin ev3. Le micro logiciel leJOS est utilisé sur la brique pour exécuter le code Java. Une carte mémoire micro SD est nécessaire pour ceci. Le mode de mise au point est supporté entre Automgen et la brique ev3 par USB ou WIFI.

The Java Automgen post-processor is used for generating a JAVA source from Automgen. This source code is then compiled and uploaded to the LEGO brick by using Eclipse software and ev3 plugin for Eclipse. The leJos firmware is used on the brick side to run the Java code. A micro SD card is required for this. Debug mode is supported between Automgen and the ev3 brick over USB or WIFI.

Les points 1 à 5 ne sont à réaliser qu'une seule fois.

Point #1 to #5 have to be done only one time.

1- installation d'Eclipse, installing Eclipse

Installer Eclipse depuis ce lien : Install Eclipse from this link:

http://www.eclipse.org

Allez dans la section "téléchargement" puis téléchargez et installez "Eclipse IDE for Java Developers"

Go to the "download" section and then download and install " Eclipse IDE for Java Developers".

2- installation du plugin ev3 pour Eclipse, installing the ev3 plugin for Eclipse

Lancez Eclipse, ouvrez le menu "Help/Install new software"

Launch Eclipse and open the "Help/Install new software" menu.



Entrez "http://lejos.sourceforge.net/tools/eclipse/plugin/ev3" dans l'élément "work with" puis cochez "leJOS EV3 support" puis "Next".

Enter "http://lejos.sourceforge.net/tools/eclipse/plugin/ev3" in the "work with" item then check "leJOS EV3 support", then "Next".

🚺 Install				
Available Software Check the items that you wish to install.				
Work with: http://lejos.sourceforge.net/tools/eclipse/p	lugin/ev3 vare by working wit	h the <u>"Available</u>	Software Sites	<u>A</u> dd
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Show only software applicable to target environment				
Contact all update sites during install to find required so	oftware			
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3- installation de leJos, installing leJOS.

Télécharger leJOS beta 0.8.1 (attention de bien choisir cette version) et installez le depuis ce lien :

Download and install leJOS beta 0.8.1 (please us only this version) from this link:

http://sourceforge.net/projects/lejos/files/lejos-EV3/



Pour plus d'informations sur l'installation de leJOS, vous pouvez consulter ce site :

For more informations on leJOS installation, please follow this link:

http://sourceforge.net/p/lejos/wiki/Windows%20Installation/

A la fin de l'installation, un utilitaire est lancé pour copier les fichiers nécessaires sur la carte mémoire SD. Après ceci, insérez la carte SD dans la brique puis mettez la sous tension. Après un petit moment, le leJOS doit s'initialiser. Des messages indiquent l'avancement sur l'écran LCD de la brique.

At the end of the installation, a tool is launched for copying required files to the SD card. After this, insert the SD card into the brick and power on the brick. After a few time, leJOS firmware should initializes. Messages show progress on the brick LCD screen.

4- création d'un projet dans Eclipse pour recevoir le code généré par Automgen, creating a project into Eclipse for importing code generated from Automgen

🚯 New LeJOS EV3 Project	
New LeJOS EV3 Project Create a new LeJOS Project for programs running on the EV3	
Project name: myproject	
Use default location	
Location: C:\worklejos\myproject	Browse
JRE	
© Use an execution environment JRE: JavaSE-1.7	•
O Use a project specific JRE: jre7	V
O Use default JRE (currently 'jre7')	Configure JREs
Project layout	
\bigcirc $\underline{U}\!\!\!$ se project folder as root for sources and class files	
• Create separate folders for sources and class files	Configure default
Working sets	
Add project to working sets	
Working sets:	Select
? < Back Next >	Einish Cancel

()) New Le	IOS EV3 Project			
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	Run As Debug As Profile As Team Compare With Restore from Local Histo IeJOS EV3	ry	Cther	Ctrl+N



😝 New Java Class	
Java Class A Type name is discouraged. By convention, Java type names usually start with an uppercase letter	C
Source folder: myproject/src	Browse
Pad <u>k</u> age: mypackage	Bro <u>w</u> se
Endosing type:	Bro <u>w</u> se
Name: myclass Modifiers: © public C default C prigate C protected abstract final statig	
Superdass: java.lang.Object	Browse
Interfaces:	<u>A</u> dd <u>R</u> emove
Which method stubs would you like to create? Vipublic static void main(String] args) Constructors from superclass Inherited abstract methods	
Do you want to add comments? (Configure templates and default value <u>here</u>)	
?	Cancel

5- Installez le driver de communication USB, install the USB driver

Uniquement si vous souhaitez communiquer avec la brique via le câble USB, suivez ce lien pour les explications:

Only if you want to communicate with the brick over USB, follow this link for explanations:

https://www.youtube.com/watch?v=_SAaQq8omeQ

6- Ouvrir un projet depuis Automgen, open a project from Automgen

Vous pouvez ouvrir un exemple depuis le répertoire "exemples/post-processeur/java" du répertoire d'installation d'Automgen.

You can open an example from the "examples/post-processor/java" of the Automgen installation directory.

7- Compiler depuis Automgen, compile from Automgen

Cliquez sur pour compiler le projet.

Click on to compile the project.

A la fin de la compilation, ouvrez l'élément "Fichiers générés/Java/Passe 2", sélectionnez l'ensemble du code java généré et copiez le dans le presse papier.

When compilation is over, open the "generated files/Java/Pass 2" item, then select the whole code and then copy it to the clipboard.



8- Transférer le programme vers Eclipse, transfer the program to Eclipse

Collez le code dans l'élément myclass.java dans Eclipse. Remplacez la totalité des lignes existantes.

Paste the code into the myclass.java item inside Eclipse. Replace all the existing lines.

File Edit Source Refactor leJOS EV3 Navig	ate Search Project Run	Window Help	
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🛱 Package Explorer 😒	E \$	~	🛿 *myclassjava 🕱
Border State			<pre>package mypackage; import java.net.*; import java.nio.ByteBuffer; public class myclass { static boolean []out; static boolean []out; static boolean []out; static boolean []out; static intolean [lout; static intolean i]out; static float []red; public static final int NUTPTS = 128; public static final int NUTPTS = 2048; public static volt debugsendtrame(char []data, int len) { figock!=null) { for cont; trame=new char[len+4]; char cnc; int count; crc=(char)(!cr'+(char)(len&&xff)+(char)(len>>8)); trame[]=[-char)(len&&zff); trame[]=[-char)(len&ZSD); for(count=0;count!e]; crc==data[count]; for(count=0;count!e]; for(count=0;count!e]; for(count=0;count!e]; for(count=0;count!e]; bataOutputStream out =new DataOutputStream(sock.getOutputStream()); byte []b; bataOutputStream out =new DataOutputStream(sock.getOutputStream()); bataOutputStream out =new DataOutputStream(sock.getOutp</pre>

9- Transférer le programme vers la brique, transfer the program to the brick

Cliquez avec le bouton droit de la souris sur l'élément myproject et sélectionnez "Run as/leJOS EV3 program".

🚯 Java - myproject/src/mypackage/myclass.java - Eclipse File Edit Source Refactor leJOS EV3 Navigate Search Project Run Window Help 🍄 🌽 🗐 🖬 📮 🗹 🗸 诸 🤜 秒 💷 🕪 💷 📑 🛛 🔚 🗟 🖻 l Package Explorer 🛛 🚺 *myclass.java 🔀 🗆 😂 myproject package mypackage; import java.net.*; import java.io.*; import java.nio.Byte 🗄 🕮 src Go Into 🗄 🖶 n ÷...[Open in New Window public class myclass Open Type Hierarchy static boolean []in;
static boolean []out F4 🗄 🛋 LeJO Show In Alt+Shift+W static boolean []bit static short []word; Copy Ctrl+C static int []dword; static float []real; public static final Copy Qualified Name Ctrl+V 🖹 Paste 💢 Delete public static final public static final Delete Build Path public static final Alt+Shift+S . public static final Source public static final Refactor Alt+Shift+T public static final 占 Import... static boolean run=t static boolean step= 🛃 Export... private static Serve private static Socke lefter Refresh E5 public static void r Close Project Assign Working Sets... if(sock!=null) Run As Alt+Shift+X, A 😇 1 Java Applet Þ []trame; Debug As 🗊 2 Java Application Alt+Shift+X, J new char[1 Profile As 🤳 3 LeJOS EV3 Program crc; Team ount; Compare With Run Configurations.. (char)('Z'+(
trame[0]='Z'; Restore from Local History... trame[1]=(char)(
trame[2]=(char)(leJOS EV3 Properties Alt+Enter for(count=0;coun trame[3+coun crc+=data[co tname[3+count]=(

Right click on the myproject item and select "Run as/leJOS EV3 program".

Le programme se transfère sur la brique puis est lancé.

The program is uploaded to the brick and then launched.



10- Mettre au point le programme depuis Automgen, debug the program from Automgen

Cliquez sur GO, vérifiez les paramètres de communication, l'adresse TCP-IP peut devoir être modifiée si vous utilisez une connexion WIFI avec la brique, autrement, laissez 10.0.1.1 pour USB.

Click on GO, verify the communication parameter: TCP-IP address may have to be changed if you used a WIFI connection, otherwise, let 10.0.1.1 for USB.

