

Readme

1. Preparation

To run the NPD Game of iOS verison, the following preparations are required:

1. Xcode v.6.3.2 or above.

Download address: <https://developer.apple.com/xcode/downloads/>

2. Apache-tomcat v7.0.56 or above

Download address: <https://tomcat.apache.org/download-70.cgi>

3. MySQL Community Edition (GPL) and MySQL Workbench

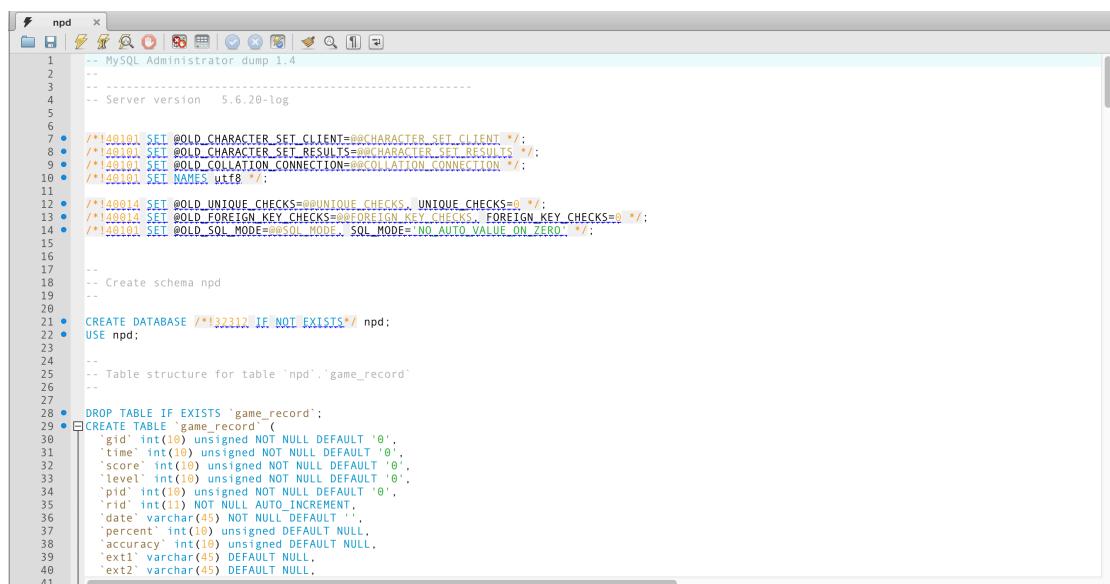
Download address: <http://www.mysql.com/downloads/>

Install all programs above, and then follows next steps to configure database and server side.

2. Configuration

2.1 Create database

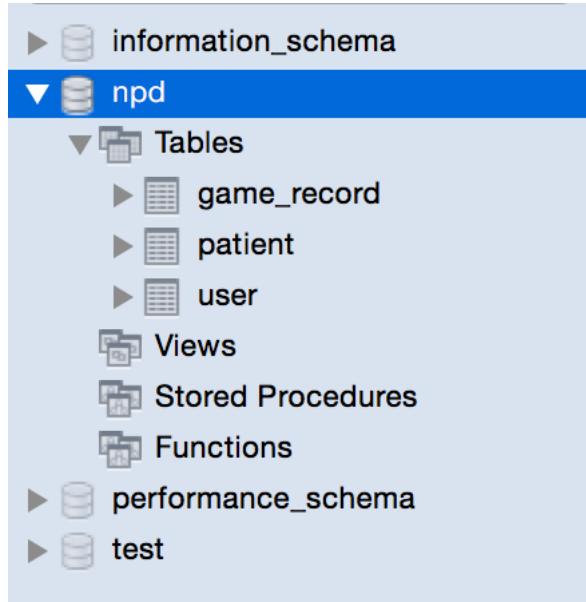
Open MySQL Workbench, go to menu **File -> Open SQL Scripts...** and then select the file **npd.sql** in the directory **Database Script**. It looks like this:



```
1 -- MySQL Administrator dump 1.4
2 --
3 --
4 -- Server version      5.6.20-log
5 
6 
7 /*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
8 /*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
9 /*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
10 /*!40101 SET NAMES utf8 */;
11 
12 /*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
13 /*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;
14 /*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
15 
16 
17 -- Create schema npd
18 --
19 
20 
21 CREATE DATABASE /*!32312 IF NOT EXISTS*/ npd;
22 USE npd;
23 
24 
25 -- Table structure for table `npd`.`game_record`
26 --
27 
28 DROP TABLE IF EXISTS `game_record`;
29 CREATE TABLE `game_record` (
30   `gid` int(10) unsigned NOT NULL DEFAULT '0',
31   `time` int(10) unsigned NOT NULL DEFAULT '0',
32   `score` int(10) unsigned NOT NULL DEFAULT '0',
33   `level` int(10) unsigned NOT NULL DEFAULT '0',
34   `pid` int(10) unsigned NOT NULL DEFAULT '0',
35   `rid` int(11) NOT NULL AUTO_INCREMENT,
36   `date` varchar(45) NOT NULL DEFAULT '',
37   `percent` int(10) unsigned DEFAULT NULL,
38   `accuracy` int(10) unsigned DEFAULT NULL,
39   `ext1` varchar(45) DEFAULT NULL,
40   `ext2` varchar(45) DEFAULT NULL,
41 )
```

Run the script, if successful, you will see a new directory named **npd** appears on the left of MySQL Workbench. Expand it, there are three tables: **game_record**, **patient**,

user. It looks like this:



2.2 Run server in tomcat

After the installation of tomcat, you need to start it through the command line. Just navigate into the directory **apache-tomcat-7.0.56/bin** and run the command **sudo sh startup.sh**. If the message shows like the following, you successfully start the tomcat service.

```
yaorugang:bin rugangyao$ sudo sh startup.sh
Password:
Using CATALINA_BASE:      /Storage/Software/apache-tomcat-8.0.15
Using CATALINA_HOME:      /Storage/Software/apache-tomcat-8.0.15
Using CATALINA_TMPDIR:    /Storage/Software/apache-tomcat-8.0.15/temp
Using JRE_HOME:           /Library/Java/JavaVirtualMachines/jdk1.8.0_05.jdk/Content
s/Home
Using CLASSPATH:          /Storage/Software/apache-tomcat-8.0.15/bin/bootstrap.jar:
/Storage/Software/apache-tomcat-8.0.15/bin/tomcat-juli.jar
Tomcat started.
yaorugang:bin rugangyao$
```

Open a browser, type the URL **http://localhost:8080/** in the address bar, then in the opened webpage click the button **Manager App** on the right side, you will see another webpage like this:

Tomcat Web Application Manager

Message: OK - Undeployed application at context path /npd						
Manager						
List Applications		HTML Manager Help			Manager Help	
Applications						
Path	Version	Display Name	Running	Sessions	Commands	
/	None specified	Welcome to Tomcat	true	0	Start	Stop Reload Undeploy
/docs	None specified	Tomcat Documentation	true	0	Start	Stop Reload Undeploy
/examples	None specified	Servlet and JSP Examples	true	0	Start	Stop Reload Undeploy
/host-manager	None specified	Tomcat Host Manager Application	true	0	Start	Stop Reload Undeploy
/manager	None specified	Tomcat Manager Application	true	1	Start	Stop Reload Undeploy
Deploy						
Deploy directory or WAR file located on server						
Context Path (required): <input type="text"/>						
XML Configuration file URL: <input type="text"/>						
WAR or Directory URL: <input type="text"/>						
Deploy						
WAR file to deploy						
Select WAR file to upload <input type="button" value="Choose File"/> No file chosen						
Deploy						
Diagnostics						
Check to see if a web application has caused a memory leak on stop, reload or undeploy						

In the **WAR file to deploy** section, click the **Choose File** button, select the file **npd-server.war** in the directory **Release** on the DVD, and then click **Deploy** button, you will see a new application called **npd** appear on the webpage, looks like this:

npd	None specified		true	0	Start	Stop Reload Undeploy
					Expire sessions with idle ≥ 30	minutes

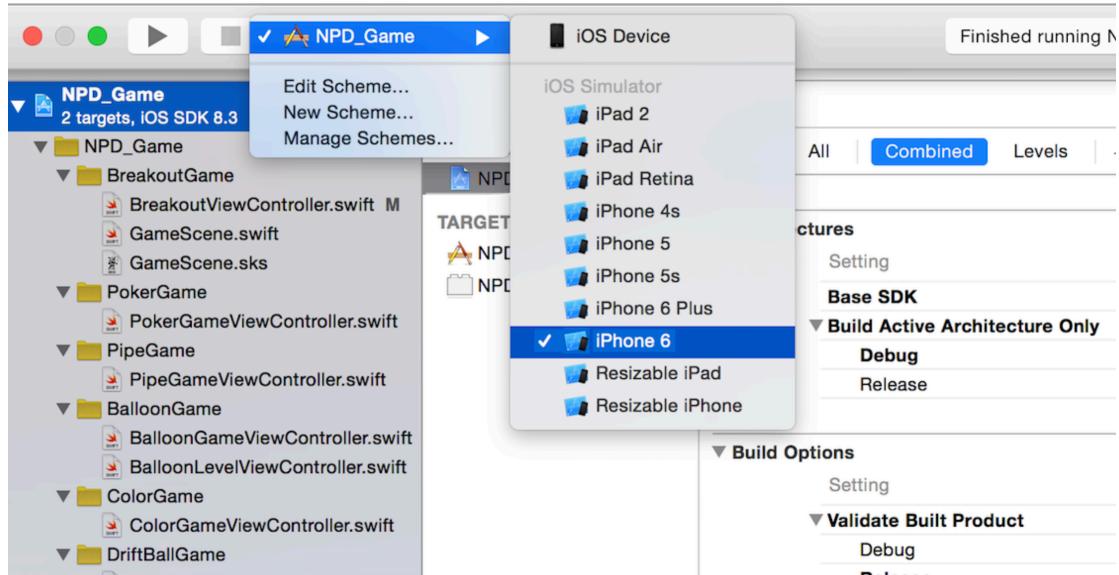
So far, you have successfully deployed the server program on your computer.

3 Run NPD Game

To run an iOS app on the real devices (iPhone or iPad), you need to have a developer account, which costs 99USD. Alternatively, we can run an app in iOS simulator, which is totally free.

3.1 Run in iOS simulator

Open the NPD Game source code in Xcode, source code is located in the directory **Source Code** on DVD. On the top of the Xcode, select the iOS simulator as iPhone6, as shown in the following snapshot.



Click the Run button you will see the NPD Game runs on the simulator.



You can use an existing username “**test**” to login and then play the game.

3.2 Run in mobile devices

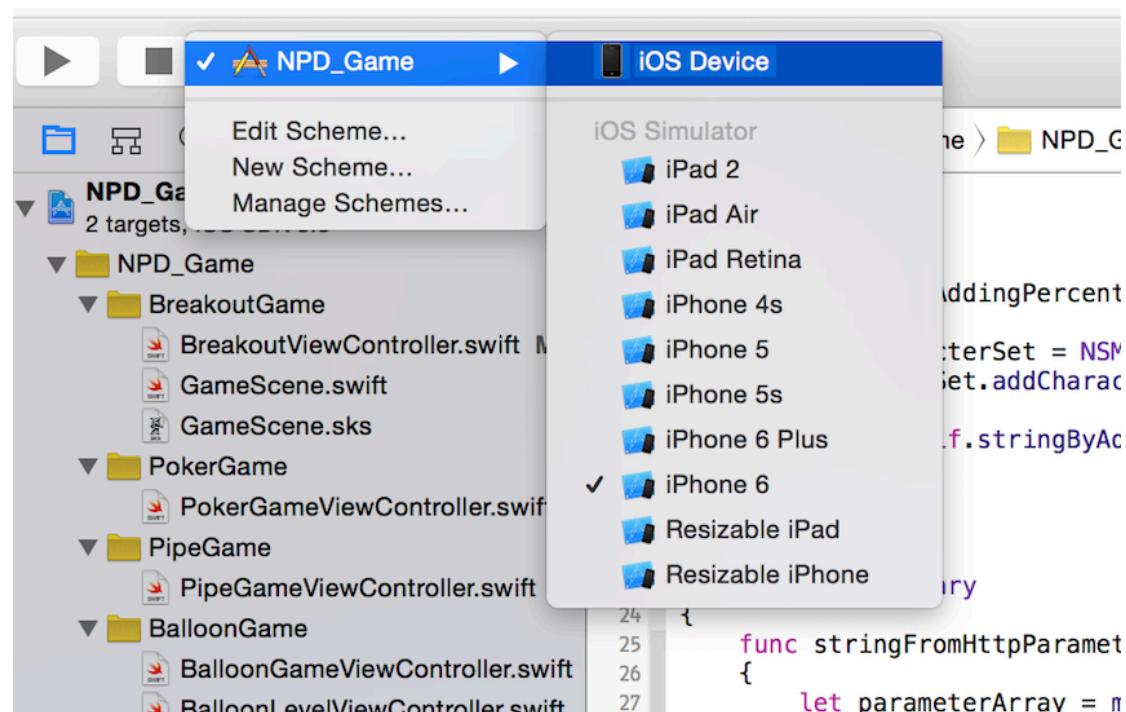
You will find the game “Drift Ball” does not work in the simulator, this is because the game rely on the built-in sensor accelerometer, but the simulator does not have sensors. So you have to test this game on a real device, and an apple developer account is necessarily required.

The NPD Game client requires the server IP address to send user's data. The default IP address is “localhost” in the code. When you run the NPD Game in the simulator, the client and server are actually running on the same computer, so the default value

works fine. But when you run the game on a real device, you need to change the default IP address. It is easy to do, find the source code file **DBAdapter.swift** in XCode, and then find the line 40, change the value “localhost” to the real IP address of the server program

```
37
38 class DBAdapter
39 {
40     let mServerIP: String          = "localhost"
41     let mServerPort: String        = "8080"
42     let mServerName: String        = "npd"
43     let mLoginServlet: String     = "LoginServlet_iOS"
44     let mGameRecordServlet: String = "InsertGameRecordServlet_iOS"
45 }
```

Finally, choose your connected iOS device in Xcode rather than an iOS simulator.



Build and run the game.