第三篇 - EOS DAWN-V3.0.0 智能合约开发之Hello World

不管是 `C、C++、Java` 还是任何其他语言，一般刚开始学习的时候，我们都会从 `HelloWorld` 开始，这篇文章主要讲解 `EOS DAWN-V3.0.0` 智能合约开发之 `Hello World` 。

在看这篇文章之前，请先阅读下面两篇入门文章。

- 第一篇 - 手把手教你理清EOS各种开发环境搭建来龙去脉
- 第二篇 - EOS Currency 合约案例

1. 编写合约代码

在桌面创建一个文件夹，比如：`0418` ，用 `Atom` 打开 `0418` 文件夹。新建文件 `Hello.cpp` 文件，并将下面的源码拷贝到 `Hello.cpp` 文件中。

```cpp
#include <eosiolib/eosio.hpp>
#include <eosiolib/print.hpp>

// 视频网站: http://kongyixueyuan.com
// 个人博客: http://liyuechun.org
// 公众号: 区块链部落
// 进技术群，请加微信 (kongyixueyuan)

//用eosio命名空间
using namespace eosio;

//所有的智能合约都继承自contract类
class Hello : public eosio::contract {

  public:
      using contract::contract;

      /// @abi action
      void hi( account_name user ) {
         print( "Hello, ", name{user} );
      }

};
EOSIO_ABI( Hello, (hi) )
```

2. 生成 `.wast` 文件

```
liyuechun:Project yuechunli$ eosiocpp -o Hello.wast Hello.cpp
liyuechun:Project yuechunli$ ls
Hello.cpp          Hello.wast
liyuechun:Project yuechunli$
```

3. 生成 `.abi` 文件

```
liyuechun:Project yuechunli$ eosiocpp -g Hello.abi Hello.cpp
Generated Hello.abi ...
liyuechun:Project yuechunli$ ls
Hello.abi          Hello.cpp          Hello.wast
liyuechun:Project yuechunli$
```

- `Hello.abi` 文件内容如下：

```
{
    "____comment": "This file was generated by eosio-abigen. DO NOT EDIT - 2018-04-18T08:15:50",
    "types": [],
    "structs": [{
        "name": "hi",
        "base": "",
        "fields": [{
            "name": "user",
            "type": "account_name"
        }
        ]
    }
    ],
    "actions": [{
        "name": "hi",
        "type": "hi",
        "ricardian_contract": ""
    }
    ],
    "tables": [],
    "clauses": []
}
```

4. 创建钱包账号

4.1 创建钱包

```
liyuechun:Hello yuechunli$ cleos wallet create
Creating wallet: default
Save password to use in the future to unlock this wallet.
Without password imported keys will not be retrievable.
"PW5J3rx7Bfg9zb8Kf2owTytccFyJqtDTrqnUX8iBRRUvbwM8RyzRL"
```

PW5J3rx7Bfg9zb8Kf2owTytccFyJqtDTrqnUX8iBRRUvbwM8RyzRL 必须保存好，解锁钱包时需要使用到这个密码。

4.2 创建两组key

```
liyuechun:Hello yuechunli$ ./cleos create key
-bash: ./cleos: No such file or directory
liyuechun:Hello yuechunli$ cleos create key
Private key: 5K7QdknUZsF9apdBhD8TDMZGJjw8zJ8esYwS173YyFRv2453Z9t
Public key: EOS5RU8VsYBLnN5snGeUKmt1sDDzpvQbGyW7LPP6qEryaFctYieCK
liyuechun:Hello yuechunli$ cleos create key
Private key: 5J8kComGiQHZyNmH6VvkHgtFggeQemazLpihKR4QW75DNkWTVdA
Public key: EOS5fqiC3VFAJ1riMrKf8vzD28nqd4EpXvZGpXt6YewEBnH8DYinG
```

4.3 向钱包导入私钥

```
liyuechun:Hello yuechunli$ cleos wallet import 5K7QdknUZsF9apdBhD8TDMZGJjw8zJ8esYwS173YyFRv2453Z9t
imported private key for: EOS5RU8VsYBLnN5snGeUKmt1sDDzpvQbGyW7LPP6qEryaFctYieCK
liyuechun:Hello yuechunli$ cleos wallet import 5J8kComGiQHZyNmH6VvkHgtFggeQemazLpihKR4QW75DNkWTVdA
imported private key for: EOS5fqiC3VFAJ1riMrKf8vzD28nqd4EpXvZGpXt6YewEBnH8DYinG
```

4.4 创建账户

```
liyuechun:cleos yuechunli$ ./cleos create account eosio liyc111 EOS5RU8VsYBLnN5snGeUKmt1sDDzpvQbGyW7LPP6qEryaFctYieCK EOS5fqiC3VFAJ1riMrKf8vzD28nqd4EpXvZGpXt6YewEBnH8DYinG
```

5. 部署合约

```
liyuechun:build yuechunli$ cleos set contract liyc111 ./contracts/Hello
Reading WAST/WASM from ./contracts/Hello/Hello.wast...
Assembling WASM...
Publishing contract...
executed transaction: 21d891e425f3d65852432e2b6a78146e2e2992a267c9f28c8ce56cd5dbea98f2  1632 bytes  2200576 cycles
#         eosio <= eosio::setcode            {"account":"liyc111","vmtype":0,"vmversion":0,"code":"0061736d0100000001370b60027f7e0060027e7e006001...
#         eosio <= eosio::setabi             {"account":"liyc111","abi":{"types":[],"structs":[{"name":"hi","base":"","fields":[{"name":"user","t...
liyuechun:build yuechunli$ cleos get code liyc111
code hash: e387951f9a18870f2c151fbceea5b279a3861bdabab58ea87a67296a8a6583d0
liyuechun:build yuechunli$
```

6. 执行合约

6.1 解锁钱包

`PW5J3rx7Bfg9zb8Kf2owTytccFyJqtDTrqnUX8iBRRUvbwM8RyzRL` 是创建钱包是的密码。

```
liyuechun:build yuechunli$ cleos wallet unlock --password PW5J3rx7Bfg9zb8Kf2owTytccFyJqtDTrqnUX8iBRRUvbwM8RyzRL
Unlocked: default
```

6.2 执行合约

```
liyuechun:build yuechunli$ cleos push action liyc111 hi '{"user":"liyc1215"}' -p liyc111
executed transaction: 9abcaec2711ce31c693e5124af507f34aa666702bd5bb230ec31ddd6903248a8  232 bytes  102400 cycles
#       liyc111 <= liyc111::hi                {"user":"liyc1215"}
>> Hello, liyc1215
liyuechun:build yuechunli$
```

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