**Smart Contract Exercise**

**Tokenised Real Estate**

**Instructions:­­**

You have a client who is (overly) excited about blockchain, smart contracts and tokenisation-of-everything. They own a block of land they would like to sell using the Ethereum blockchain.

You received the following note:

*“Hi*

*I’ve read all about how blockchain and smart contracts can make all kinds of transactions happen almost instantly, with very little cost and without middle men.*

*I have a small block of rural land I’ve agreed to sell and I want to sell it “on the blockchain”, to an overseas buyer so I can minimize cost and delays.*

*I’ve exchanged emails with a buyer in China. They have agreed to pay me 50 Ether for the block.*

*The relevant details are as follows:*

* *Type of Property: stand-alone block (code type “0” in the software)*
* *Deposited plan #:1200*
* *Lot #: 21*
* *Sale price: 50 Ether*
* *Their Ethereum Address: 0x…..*
* *My Ethereum Address: 0x….*

*We’ve agree to use this smart contract code:* [*pastebin.com/raw/Y2CfB6yS*](https://t.co/VzrZ2Uj9TM?amp=1)*. He has already sent my .5 on an Ether as a “deposit” just to confirm the address is actually controlled by him.*

*I believe that you, as my lawyer have to act as the notary to confirm I own the property (assume you just do a title search etc) and you confirm everything is okay at the end of the transaction to finalise everything. So you’ll have to create an Ethereum address to do that.*

*I believe you can run and test the code here:* [*https://remix.ethereum.org*](https://t.co/f76o0DwzlH?amp=1)*. I’ve run a few tests. It all seems to work nice and fast. Can you please let me know how much you would charge - I assume not much, maybe a beer or two ;) - and whether there’s any last minute tweaks we need to make for the arrangement to go through smoothly and for me to be protected.*

*Cheers*

**Practical Component**

Follow these steps:

**Preparation**

View the instructional video available from the wattle site on how to “test” the contract. Copy and paste the code from*:* [*pastebin.com/raw/Y2CfB6yS*](https://t.co/VzrZ2Uj9TM?amp=1)in to<https://remix.ethereum.org>, and compile and deploy the code into the Etheruem test site.

**Roles and Addresses**

This contract assumes three roles/parties as follows:

* The Buyer – the person who wants to buy the land for 50 Ether
* The Seller – your client who claims they own the land and is selling it to the Buyer for 50 Ether
* The Notary – an independent person who verifies:
  + that the Seller owns the Land; and
  + the transaction is valid - the Buyer has become the owner of the Land and the Seller has received the 50 Ether

At the top left hand side you will see a drop down box for 5 addresses, each with 100 Ether credited. Whichever address you have selected at the time is the address/owner the software regards as taking the specified activity. If an action spends Ether or gas it will be deducted from the Ether in the selected address.

Make a note now to treat one address as the Buyer, Seller, and Notary during your simulation.

**Actions**

Using the remix.ethereum.org site, run the following test transactions:

1. Using Seller’s Address, Register the Property’
2. Using Notary’s Address, Confirm Property Is Registered;
3. Using Notary’s Address, Validate Registration of Property;
4. Using Seller’s Address, Confirm Validation of Property Registration;
5. Using Seller’s Address, make Conditional Offer to Sell Property Buyer For 50 Ether;
6. Using Notary’s Address, allow the Conditional Transfer;
7. Using Buyer’s Address, Complete the Transfer.

**Theoretical Component**

Write an advice/report to your client covering the following:

* What is you are assessment of the suitability of the smart contract as a means for selling real property and why?
* What changes (if any) can or should be made to the code to better support a property transaction?
* What documents and steps in the real world should the client complete to better protect themselves?
* Would you be prepared to act as the Notary?
* How would your advice change if they were the Buyer?