# Simple AES Problem

Yasmin has intercepted email traffic between the Master and one of their agents. See if you can decrypt the message.

Master: Agent 4, execute instructions contained in the attached message MastersOrder1563.b64. As usual, the message is encrypted with AES in ECB mode, without padding, and then Base64 encoded (The Master is too busy to deal with nonces and tags.) Use the 42nd entry in your book of keys.

Master: Agent 4, you have not executed my order. Why?

Agent 4: Uh, I can’t find my book of keys.

Master: You idiot! Look harder!

Agent 4: Sir, the book of keys was accidentally burned.

Master: Accidentally!? By whom!? Idiot! I’ll get you the key.

Master: Dual hearts rule

This is the content of the file MastersOrder1563.b64

TGFj6ocA5LRj7lFX23zZLTJVZwIJ9ecPDeJ3zt98m8gZGlf0gzuHFRYXrqwOD+TdLbbx5GsUhl3m\nLLQBosBVwXGTOMi5PPaj6QkjLgukWAQcKAFRlFTlj00m7dgB2r+KCLF6i6PWrRU5jvHynL5vy1ut\nWCOtu70kG0wRpXIP4DxdJf2vOkrkJzJ5gq+5dim4Lungicy9LhN03v2WNHiz+q8zaEawXBktXQp+\ndw5nYgX3vLBDbKJ4H6bkSzCBvKScYXxBwNVQJFJABnRsBWtArA==

Hints are base64 encoded so you don't have to read them unless you want to. This is an easy way to decode them:  
<https://gchq.github.io/CyberChef/#recipe=From_Base64('A-Za-z0-9%2B/%3D',true,false)>

Hint 1:   
VGhpcyBzaG91bGQgYmUgYWxtb3N0IGlkZW50aWNhbCB0byB0aGUgQUVTLk1PREVfRUNCIGV4YW1wbGUgaW4gQ3J5cHRvIEhvbWV3b3JrIDQu

Hint 2: SWYgeW91IGFyZSBwYXN0aW5nIHRoZSBiYXNlNjQgaW50byB5b3VyIFB5dGhvbiwgbWFrZSBzdXJlIGl0IGlzIG9uZSBsb25nIHN0cmluZyB3aXRoIG5vIGNhcnJpYWdlIHJldHVybnMvbGluZSBmZWVkcy4=

Hint 3: Y29kZWNzIGFuZCBBRVMgYm90aCB3YW50IGlucHV0IG9mIHR5cGUgYnl0ZXMuICBVc2Ugc29tZXN0cmluZy5lbmNvZGUoKSB0byBjaGFuZ2Ugc3RyaW5nIHRvIGJ5dGVzLiAgVXNlIHNvbWVieXRlcy5kZWNvZGUoKSB0byBjaGFuZ2UgYnl0ZXMgdG8gc3RyaW5nLg==