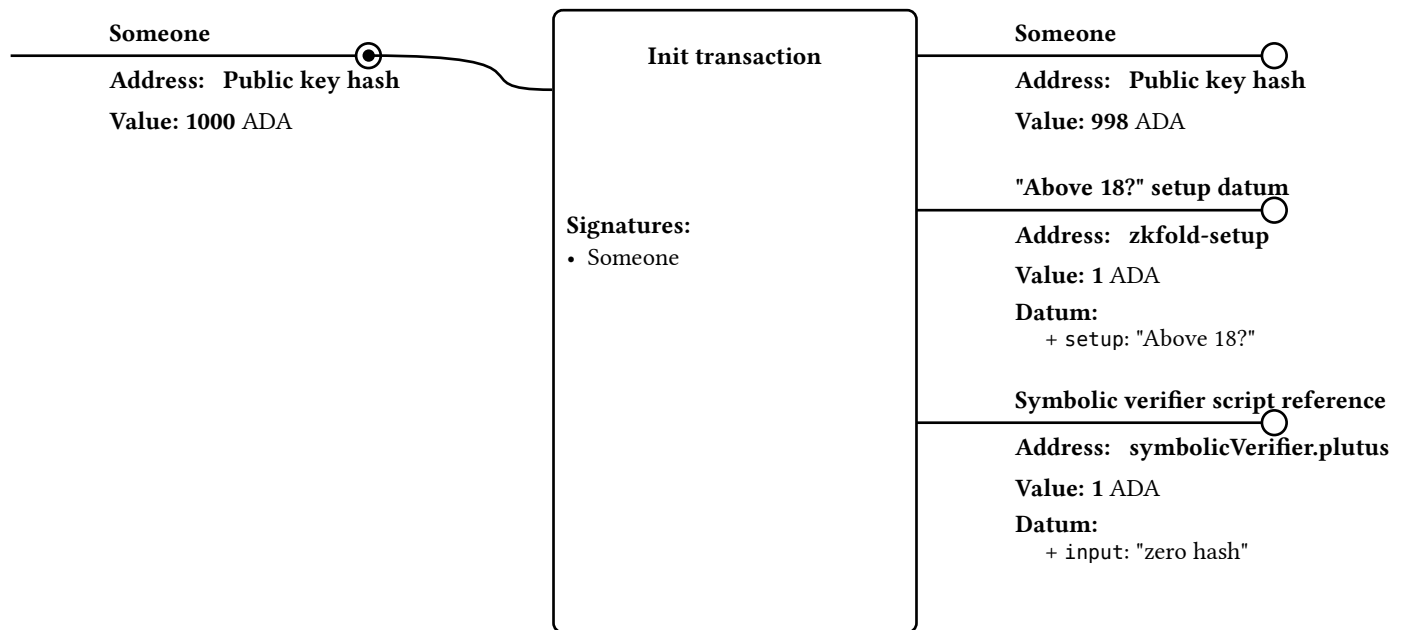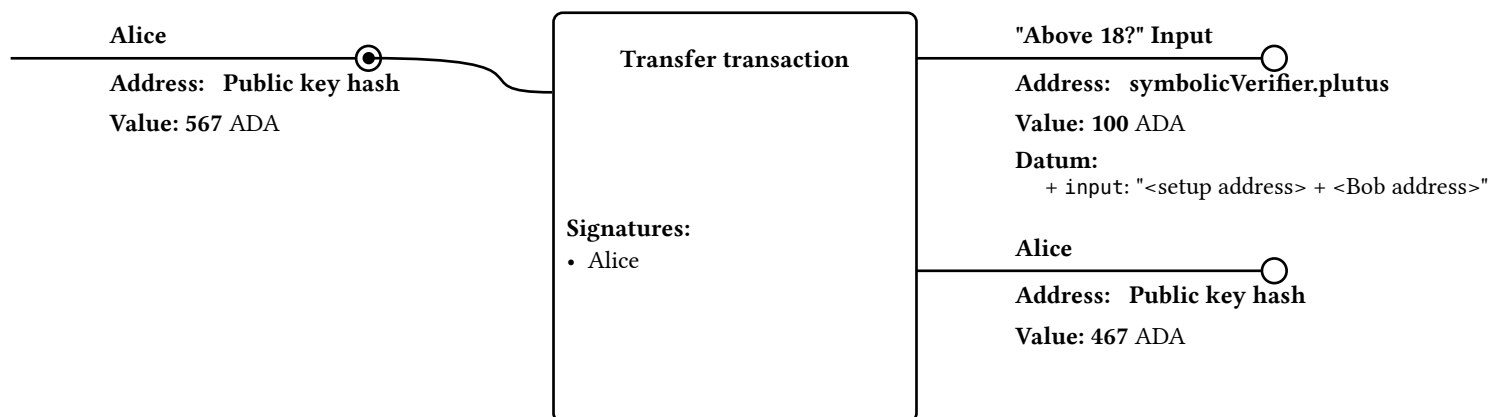# End-to-end zkFold Symbolic test

A ZK-KYC example: Alice wants to send ada to Bob, which he can then use on the condition that he is above 18 years old.
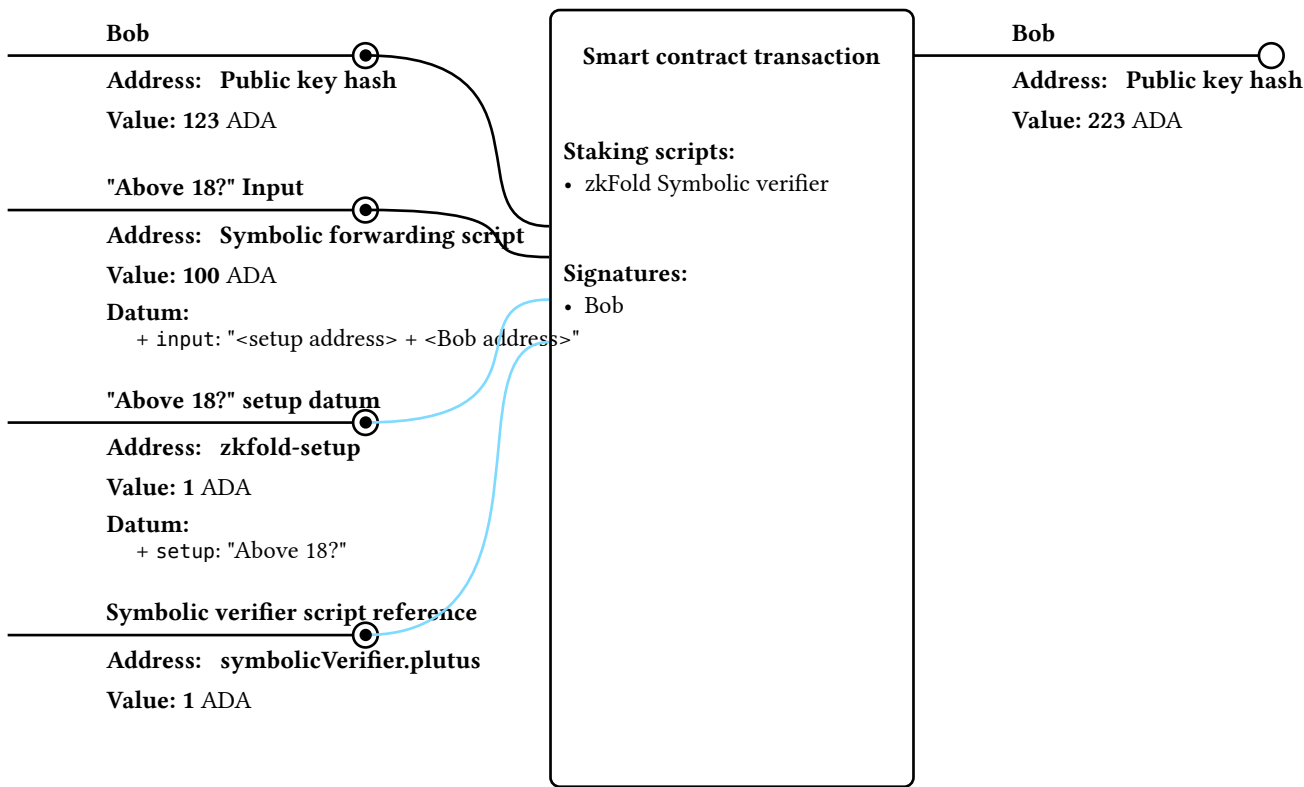
- The first transaction is a setup that needs to be performed only once for this application;
- In the second transaction, Alice sends ada to a smart contract;
- In the third transaction, Bob proves that he is above 18 year old and withdraws the funds to his wallet address.

Someone

Address: **Public key hash**

Value: 1000 ADA

Init transaction

Signatures:
- Someone

Someone

Address: **Public key hash**

Value: 998 ADA

"Above 18?" setup datum

Address: **zkfold-setup**

Value: 1 ADA

Datum:
    + setup: "Above 18?"

Symbolic verifier script reference

Address: **symbolicVerifier.plutus**

Value: 1 ADA

Datum:
    + input: "zero hash"

Note: Someone posts the Symbolic verifier script and the "Above 18?" forwarding script on-chain.

Alice

Address: **Public key hash**

Value: 567 ADA

Transfer transaction

Signatures:
- Alice

"Above 18?" Input

Address: **symbolicVerifier.plutus**

Value: 100 ADA

Datum:
    + input: "<setup address> + <Bob address>"

Alice

Address: **Public key hash**

Value: 467 ADA

Note: Alice sents ada to a smart contract address.

Bob

Address: **Public key hash**

Value: 123 ADA

"Above 18?" Input

Address: **Symbolic forwarding script**

Value: 100 ADA

Datum:
+ input: "<setup address> + <Bob address>"

"Above 18?" setup datum

Address: **zkfold-setup**

Value: 1 ADA

Datum:
+ setup: "Above 18?"

Symbolic verifier script reference

Address: **symbolicVerifier.plutus**

Value: 1 ADA

Smart contract transaction

Staking scripts:
• zkFold Symbolic verifier

Signatures:
• Bob

Bob

Address: **Public key hash**

Value: 223 ADA

Note: Bob must prove that he is above 18 to withdraw ada sent by Alice.