SENG 300

Assignment 1

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«interface»
Acceptor

+ accept(thing: T): void
+ hasSpace(): boolean

UnidirectionalChannel

- sink: Acceptor<T>

+ deliver(thing: T): void
+ hasSpace(): boolean

-sink

Coin

- value: BigDecimal
- currency: Currency

+ getValue(): BigDecimal
+ getCurrency(): Currency
+ toString(): String

AbstractDevice

listeners: ArrayList<T>

+ deregister(listener: T): boolean
+ deregisterAll(): void
+ register(listener: T): void
+ disable(): void
+ enable(): void
- notifyDisabled(): void
- notifyEnabled(): void
+ isDisabled(): boolean

«interface»
AbstractDeviceListener

+enabled(device: AbstractDevice): void
+disabled(device: AbstractDevice): void

#listeners

«Interface»
CoinValidatorListener

validCoinDetected(validator: CoinValidator, value: BigDecimal): void
invalidCoinDetected(validator: CoinValidator): void

CoinValidator

+ currency: Currency
- denominations: List<BigDecimal>
- storageSink: UnidirectionalChannel<Coin>
- rejectionSink: UnidirectionalChannel<Coin>

+ connect(rejectionSink: UnidirectionalChannel<Coin>, storageSink: UnidirectionalChannel<Coin>): void
- isValid(coin: Coin): boolean
+ accept(coin: Coin): void
+ hasSpace(): boolean
- notifyValidCoinDetected(coin: Coin): void
- notifyInvalidCoinDetected(coin: Coin): void

State diagram:

- (initial) → **Accept** : accept(Coin) /
- **Accept** → **Listener** (left) : isValid() [True] / notifyValidCoinDetected
- **Accept** → **Listener** (right) : isValid() [False] / notifyInvalidCoinDetected
- **Listener** (left) → self : / validCoinDetected()
- **Listener** (right) → self : / invalidCoinDetected()
- **Listener** (left) → **Check**
- **Check** → **Error** : hasSpace() [False] / exception
- **Check** → **Storage** : hasSpace() [True] / deliver(Coin)
- **Error** → **Accept** : accept(Coin) /
- **Storage** → **Accept** : accept(Coin) /
- **Listener** (right) → **Rejection** : / deliver(Coin)
- **Rejection** → **Accept** : accept(Coin) /