Minimally Working Version

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Halal Gamble: The Stock Simulation Game

0.1 Minimal Formal Grammar

```
<stock> ::= GOLD | SLVR | TSLA
<transactionAmount> ::= <d><transactionAmount> | <d>
<d> ::= 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

<command> ::=
    | buy(<stock>, <transactionAmount>)
    | sell(<stock>, <transactionAmount>)
    | initialCapital(<transactionAmount>)

<line> ::= <command> | <output>
<program> ::= <line> | <line><program>

<output> ::= output(<graph>)
<graph> ::= bargraph | timeseries | portfolio
```

0.2 Minimal Semantics

Syntax	Abstract Syntax	Type	P/A	Meaning
stock	Stock of string	string	N/A	A textual identifier for a stock, like 'GOLD', 'SLVR', 'TSLA'.
amount	amount of int	int	N/A	Quantity of stock for transactions, expressed as an integer.
buy(stock, amount)	Buy of {stock: string; buy: int}	Command	N/A	Initiates a buy transaction for a specified stock and amount.
sell(stock, amount)	Sell of {stock: string; sell: int}	Command	N/A	Triggers a sell transaction for a given stock and quantity.
initialcapital(amount)	InitialCapital of {initial: string; amount: int}	Command	N/A	Sets the initial capital for the investment simulation.
output(graph)	Output of {graphType: string}	Command	N/A	Outputs a graphical representation of the portfolio state.
next	Next	string	N/A	Proceeds to next step of the simulation.
exit	Exit	string	N/A	Terminates the simulation.

Table 1: Semantics of DSL elements