L2 Exercise

Module	Sub-components	Time	Notes
Macro Module	Inflation Component, Growth Component, Economic Regime Component	5-8h	Develop inflation and growth pipeline to economic regime. Preprocessing, indexing, z scores
External Signals Module	Value Signal Component, Momentum Component, Sentiment Component, Merge	5-8h	Integrate various signals from different sources
Portfolio Optimization Module	-	20-25h	Optimize the portfolio. Aggregate everything together and compute optimal portfolio as well as optimal portfolio performance.

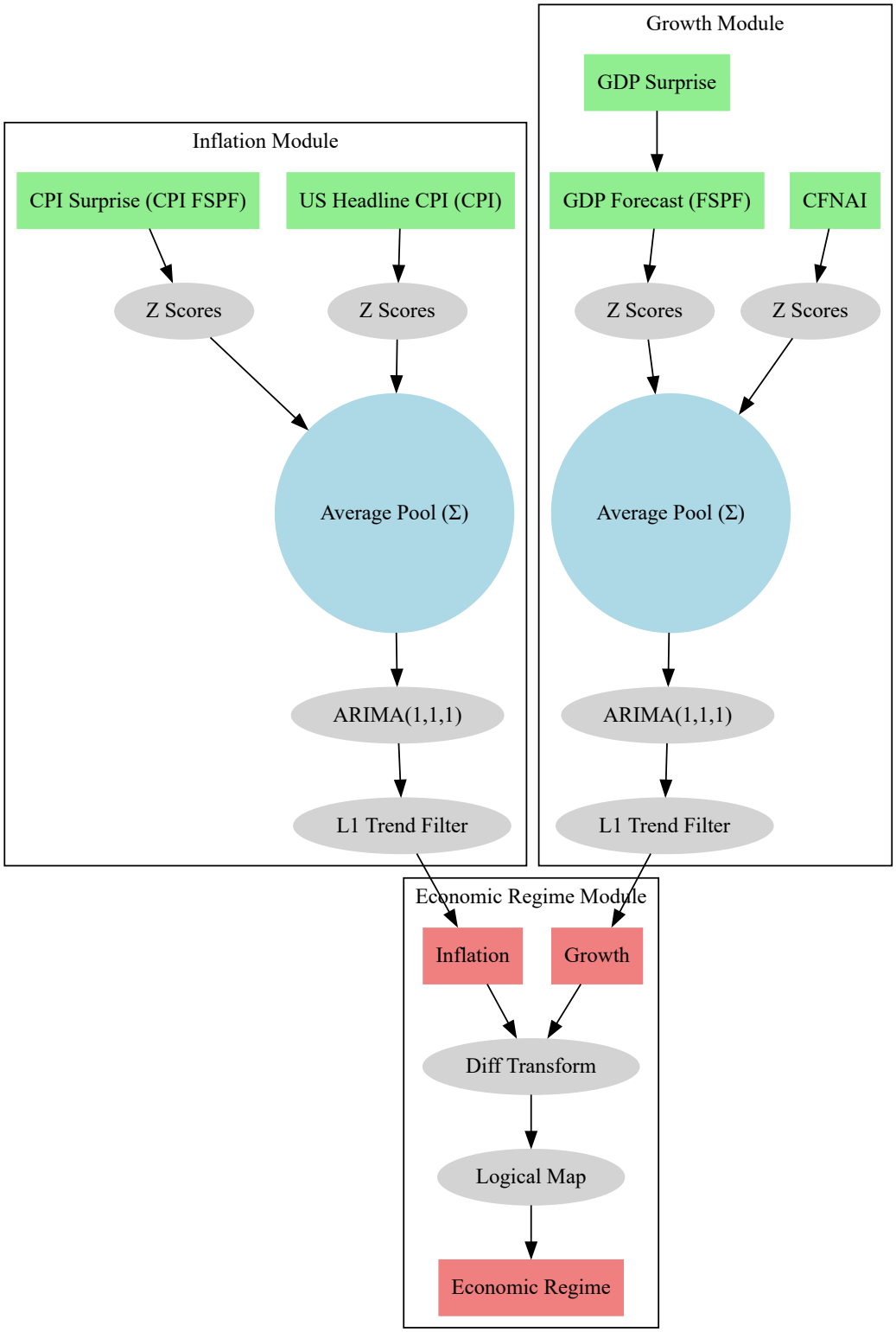
Best case scenario: 30h ~ 225 - 50 = 175 €
Worst case scenario: 41h ~ 307.5 - 50 = 257.5 €
Most likely: I would say around 35ish h. The macro module and external signals are clear to me. The optimization isn't so clear, there is a lot of "cheating" he does to adjust his data to achieve the results he wants. These transforms aren't clear in his thesis, so I assume its cheating 😛

Expectations: The system should be build and you should be able to reproduce the notebook with your own assets.

- Sentiment and macro algorithm will be fixed
- Limited visualizations (the visualizations should be only to help us trouble shoot), we can build better visualizations after
- Data comes from excel sources
- A lot of tweaking in the optimization will be needed: the data is trimmed using quantiles, expected returns from mean historical values, the weight of each technical indicator, etc. These weights are not clear to me and they seem arbitrary.

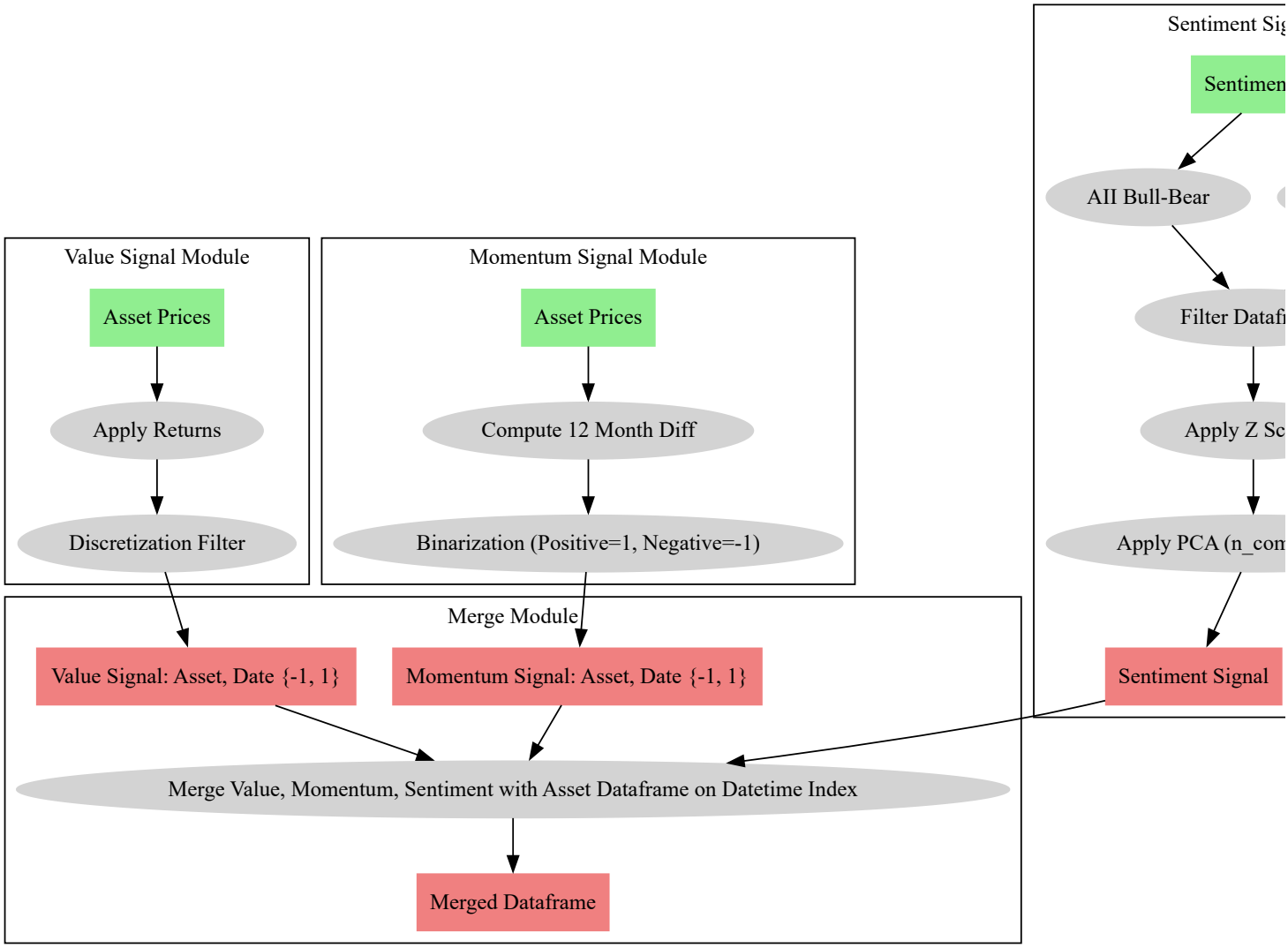
Outputs: Weights of optimal portfolio; return, volatility and sharpe

Once this is done, we can add/change features at your request incrementally.



This diagram now uses:

- Light green for input nodes.
- Light coral for output nodes.
- Light grey ellipses for operations.
- A light blue circle for the Average Pool.


Sentiment Sig
Sentimen
AII Bull-Bear
Filter Datafi
Apply Z Sc
Apply PCA (n_com
Sentiment Signal
Value Signal Module
Asset Prices
Apply Returns
Discretization Filter
Momentum Signal Module
Asset Prices
Compute 12 Month Diff
Binarization (Positive=1, Negative=-1)
Merge Module
Value Signal: Asset, Date {-1, 1}
Momentum Signal: Asset, Date {-1, 1}
Merge Value, Momentum, Sentiment with Asset Dataframe on Datetime Index
Merged Dataframe