I want to use python to make a simulation about economics in the world, with a lot of individuals to find jobs at different companies. We need high quality code and high performance.

1. The total amount of money in this simulation does not change, meaning money cannot be made out of thin air, or destroyed.
2. Each individual is born with different talent values. Personal talent is like IQ, with a normal distribution across the population.
3. Each individual has a chance to spend money at each time step, and richer people tend to spend more money.
4. When a person spends money, they must be buying a product from a company, and the money goes towards that company. Richer people tend to buy products with higher quality while weighing less on price, and the opposite goes for poor people.
5. Each individual has a wallet, and they want to earn as much as possible, if the wallet is empty the person cannot spend more. To afford a comfortable living, a person must find a job to earn money. A person’s wallet may not go negative (can’t spend more than they have).
6. Individuals earn money on each time step from the job they are working (if there is one), people with higher talent value can find better paying jobs.
7. The owner of a company is also an individual, but they're capitalist, and they earn money from profit margin (Total revenue - salary and other costs). They cannot withdraw all money at once, instead they can withdraw some percentage as dividends from the profit.
8. The more talented the people are in a company, the more likely a company is going to generate money.
9. If a person is unemployed, they have a chance to find a job at every time step, the chance depends on the gap between the person's asking price and the salary the company is willing to pay.
10. A company’s product has 2 attributes: quality and price. The number of employees in a company positively affects the product’s quality, with a diminishing return in quality as the number of employees grows. Each employee’s talent value positively contributes to the product quality.
11. Every company has additional costs when making products (cost other than salary). For example: a restaurant needs to pay costs for food and rent besides salary. Such cost is paid to another company (i.e. to the food company and the real estate company). When the company buys products from other companies as materials for its own products, the quality of the materials positively contributes to the final product.
12. The products made by larger number of raw products tend to have higher quality (but also higher cost).
13. If a company perceives growth and hiring more employees or more talented people will contribute to more profit, it will try to recruit the people it needs.
14. When a company perceives decline and risk of bankruptcy, it will fire people to save itself. For simplicity, a company lays off people randomly, and the proportion of layoffs reflects the level of perceived risk. More specifically, when the company wants to hire or fire people, it’s really because the company’s owner perceives that this is more beneficial to themselves.
15. Even if the company is not at immediate risk of bankruptcy, it may still lay off employees and hire new ones to optimize costs (maybe more talented and more costly employees, or the opposite, both are possible).
16. When a company wants to hire, it wants the best employees with the lowest cost, but waiting also comes at a cost, the company cannot wait forever. The people trying to find jobs also cannot wait forever. For example: if many people are competing for the same job opening, anyone with a higher salary expectation than most other competitors are unlikely to get a job and will keep waiting for a long time if they don't lower their expectations. Similarly, if the company is offering much lower salary than all the job candidate's expectations, the company will have to keep waiting if it doesn't increase its offering and no candidate is lower their salary expectations. Basically, this is a game theory scenario, and the deadlock will only be broken if someone yields first, and someone will yield because time and survival have cost.
17. Companies and individuals have random initial funds, and companies have random people at the beginning. At the beginning of the simulation, some people are unemployed.
18. Company funds cannot go negative. When a company runs out of funds, it goes bankrupt, and all people in that company will be unemployed.
19. Companies are also in competition with each other, companies with high overlapping in their customers (including both individual buyers and company buyers) are competitors. Competing companies want to grab a larger share of the market and maximize profit, such as lowering the cost and prices for their products to attract more customers.
20. When an individual or a company wants to buy a product and there are multiple options available from different competing companies (as defined above), they tend to go with the one with lower prices.
21. Any individual can start a new company, its initial funds will be drawn from that person’s wallet. So usually only very wealthy people can start a new company. From the entrepreneur’s perspective, it is risky, but it is worth it if he perceives a profitable niche market. A profitable niche market can exist when there are a low number of competitors (companies) and there’s a perceived profitable margin between cost and the product price.