Special Assignment: App Development with a Social Algorithm to Address Market Inefficiencies

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Due date: December 6th 2023.

Objective

To apply intermediate microeconomic concepts in identifying and resolving market inefficiencies through the creation of a social algorithm within an app, and understanding the role of decentralization in achieving market optimality.

1 Part 1: Identifying Market Inefficiencies

- **Task:** Identify a real-world market or situation characterized by inefficiencies.
- **Analysis:**
    - Describe the market structure and participants.
    - Explain the inefficiency in economic terms.
    - Provide data or research to support the existence of this inefficiency.
- **Deliverable:** A detailed report identifying the chosen market, its structure, and the implications of the inefficiency.

2 Part 2: Proposing a Social Algorithm

- **Task:** Develop a social algorithm that addresses the identified inefficiency.
- **Description of the Algorithm:**
    - Outline the algorithm's purpose.
    - Describe the inputs and outputs of the algorithm.
    - Detail the step-by-step process.
    - Use a hypothetical example to illustrate its function.
- **Deliverable:** A comprehensive description of the algorithm, supplemented by flowcharts or diagrams.

3   Part 3: Decentralization and Optimality

- **Task:** Explain how the algorithm uses decentralization to achieve market optimality.

- **Analysis:**

  - Define decentralization in the context of this algorithm and the market.
  - Discuss how decentralization contributes to efficient decision-making.
  - Analyze how the algorithm leads to a more optimal allocation of resources.
  - Address potential challenges of implementing a decentralized approach.

- **Deliverable:** An in-depth analysis of the role of decentralization in the algorithm.

Format

The assignment can be presented as a written report, or a presentation (slides), with a 10 minute video uploaded in Youtube (accessible by link, it does not need to be publicly listed). Creativity is encouraged.

Evaluation Criteria

The assignment can be done in groups of at most 2 individuals. The assignment is *fully optional*, it will be graded according to this rubric:

- Understanding of market inefficiencies and economic principles. (10 points)

- Creativity and feasibility of the proposed algorithm. (10 points)

- Depth of analysis in the role of decentralization. (10 points)

- Clarity, logic, and coherence in presentation and writing. (10 points)

- Quality of research and use of supporting data. (10 points)

There is a threshold of quality, if the quality is below 80/100, then it will not be considered. Above the threshold, only the best 2 projects per session (001, 002) will have the final exam waived with a grade of 100/100 for the final. The projects ranked 3rd-5th will be given 20 points to the final exam.