

# BitTorrent Rústico

## 1er Cuatrimestre 2022

**Polleria Rustiseria**

Matias Fusco

Tomás Szwarberg

Luciano Leon Trujillo Palomo

Maria Vazquez Navarro



# Agenda inicial

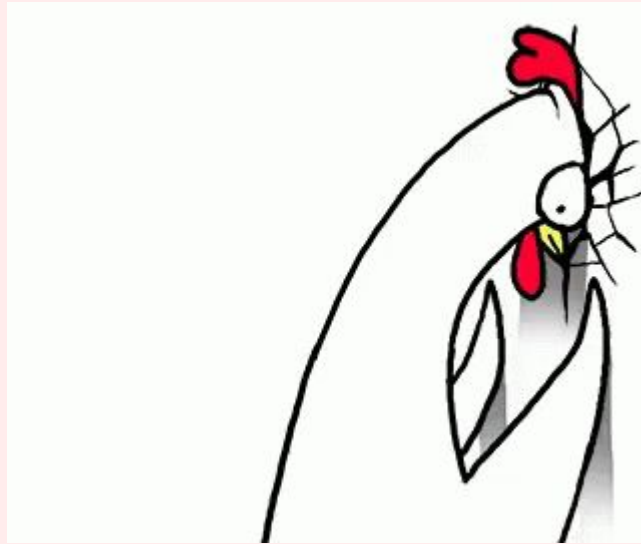
- Demo
- Concurrencia y Actores
- Cómo implementamos actores en Rust
- Panorama General de la solución
- Explicación de cada uno de los actores en el Bittorrent
- Funcionamiento del Servidor
- Obstáculos



# Demo



# Problemas de Concurrency



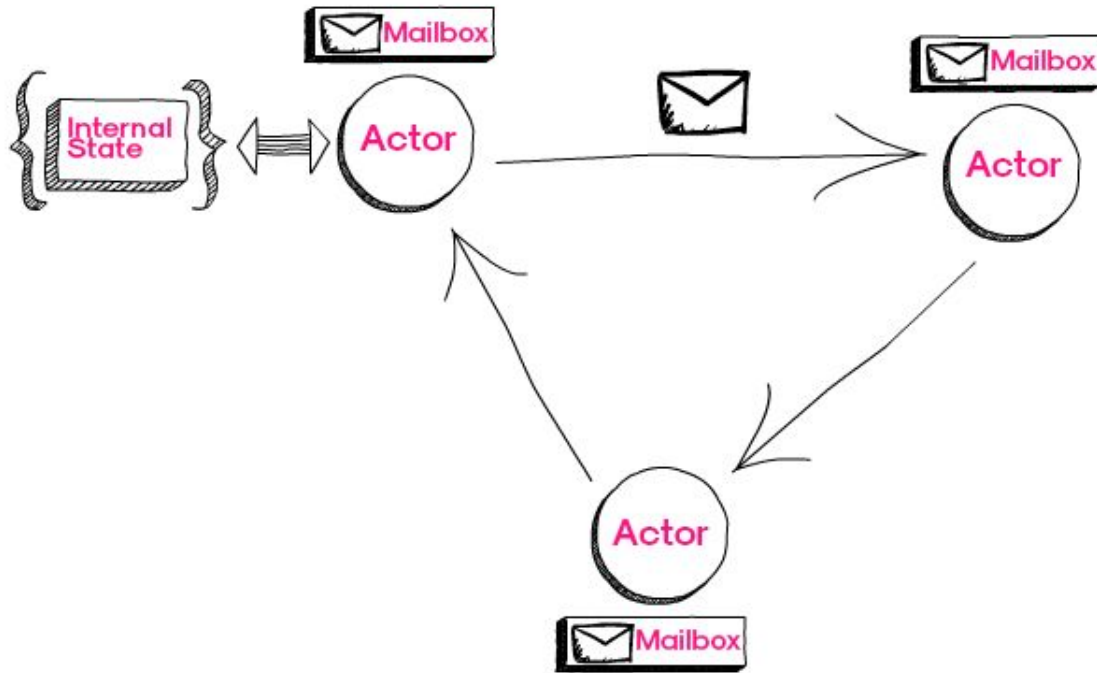
# Problemas de Concurrency

Escalabilidad

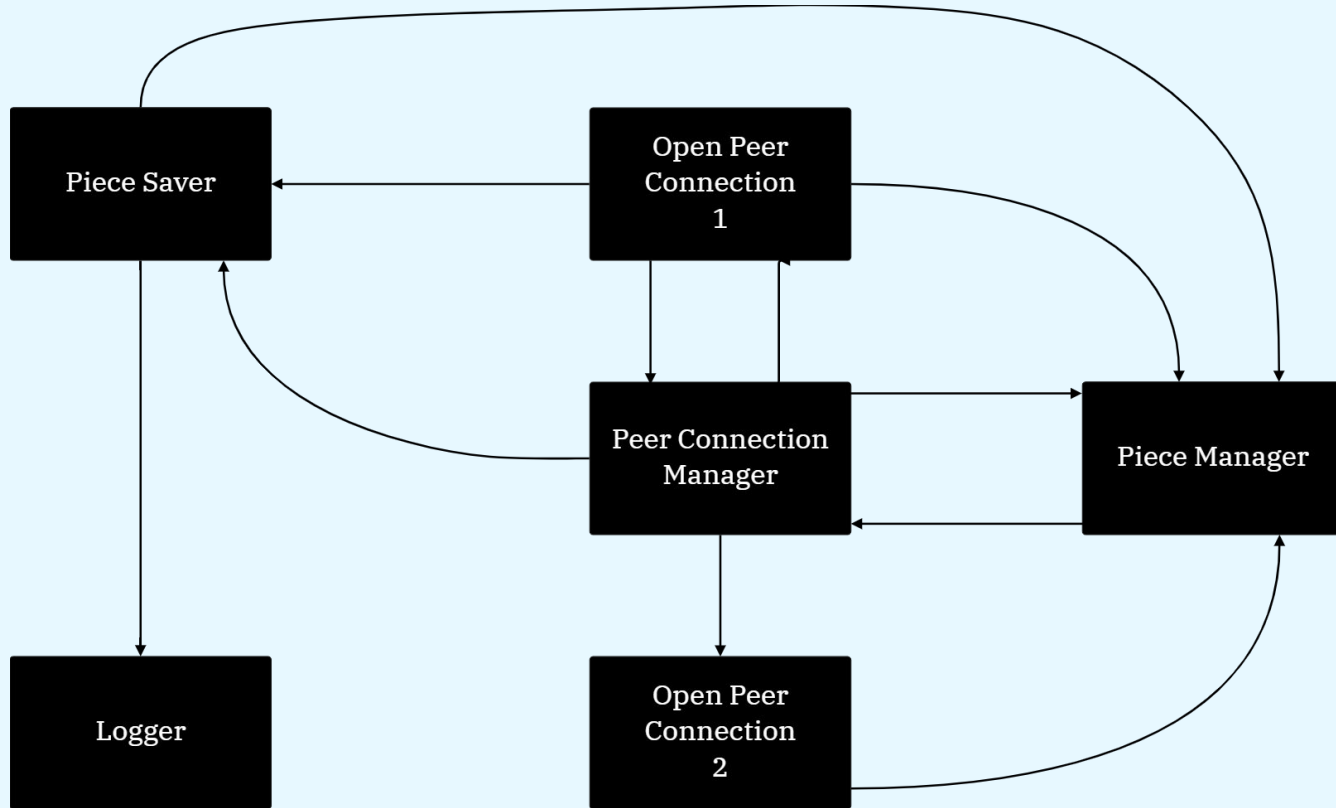
Modelo de la realidad

Predictibilidad

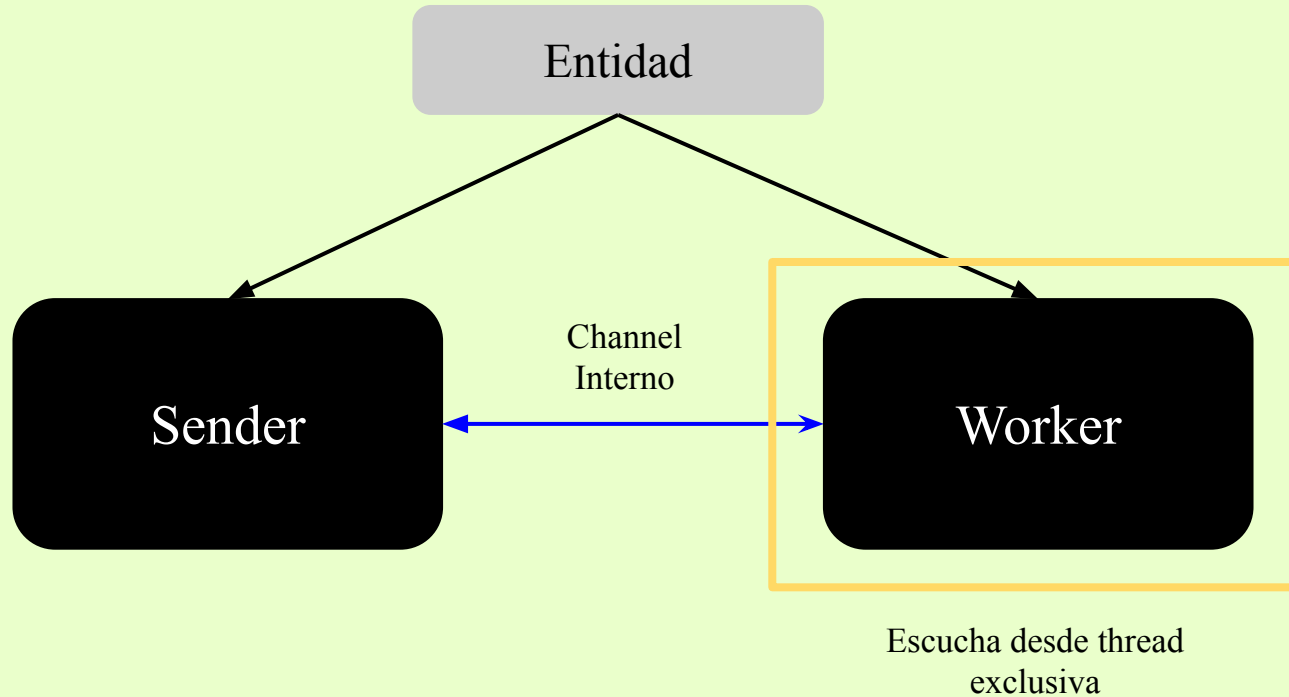
# Actores



# Funcionamiento general

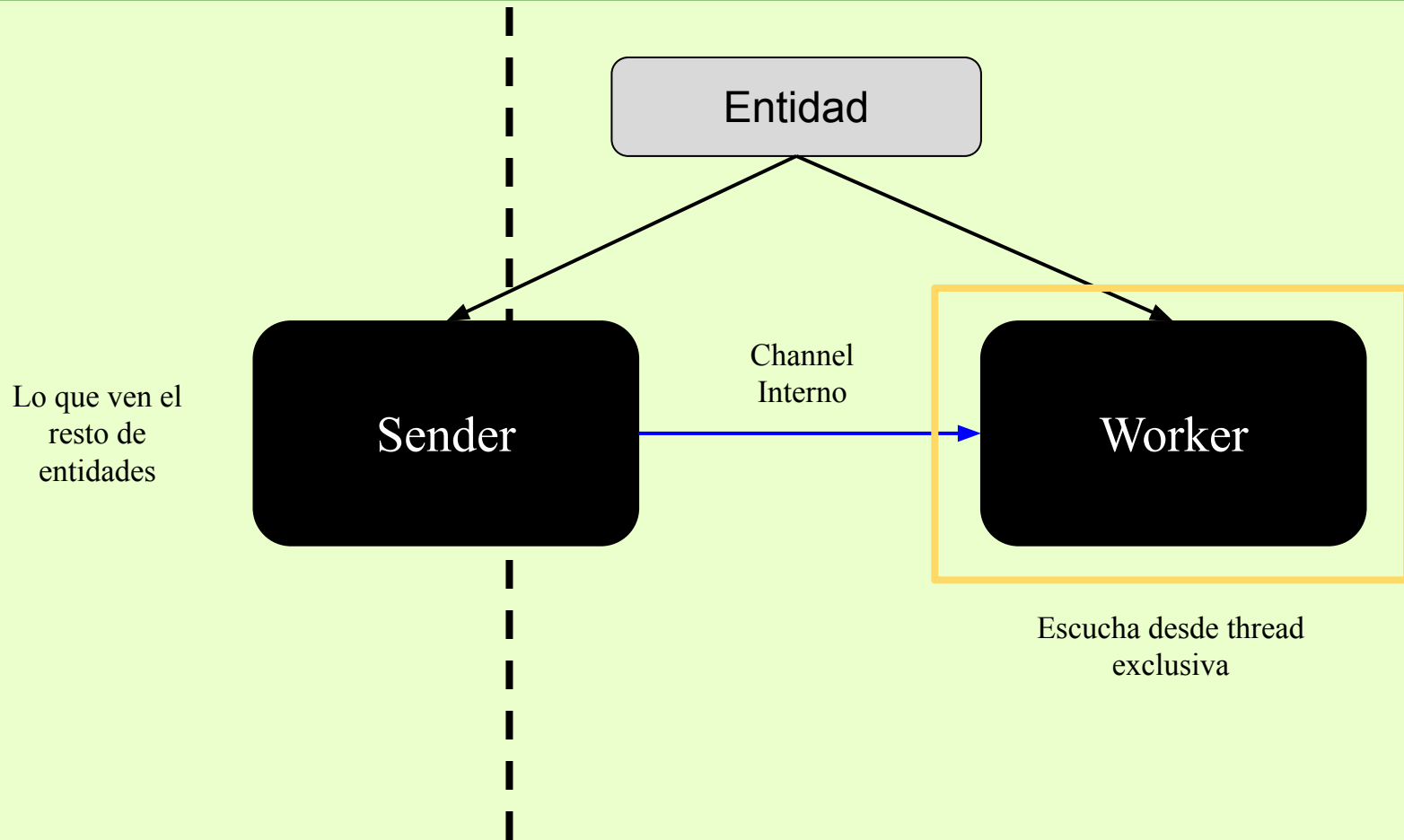


# Estructura Sender/Worker

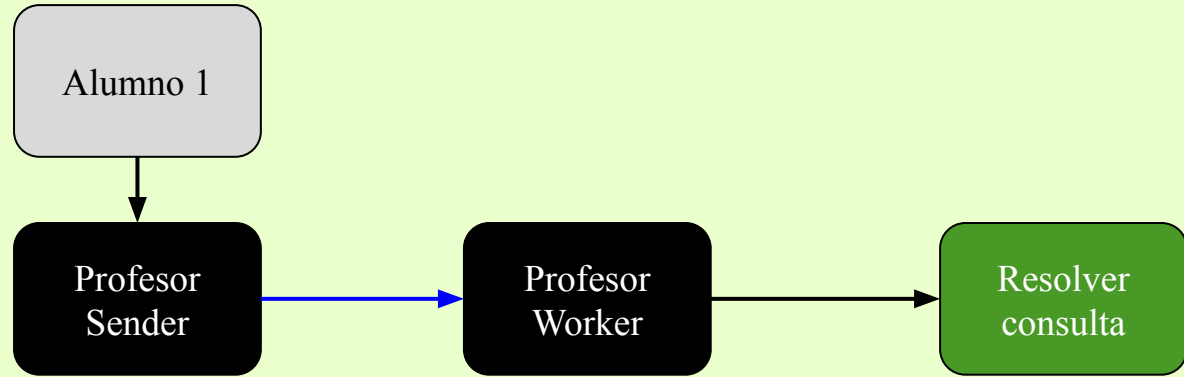




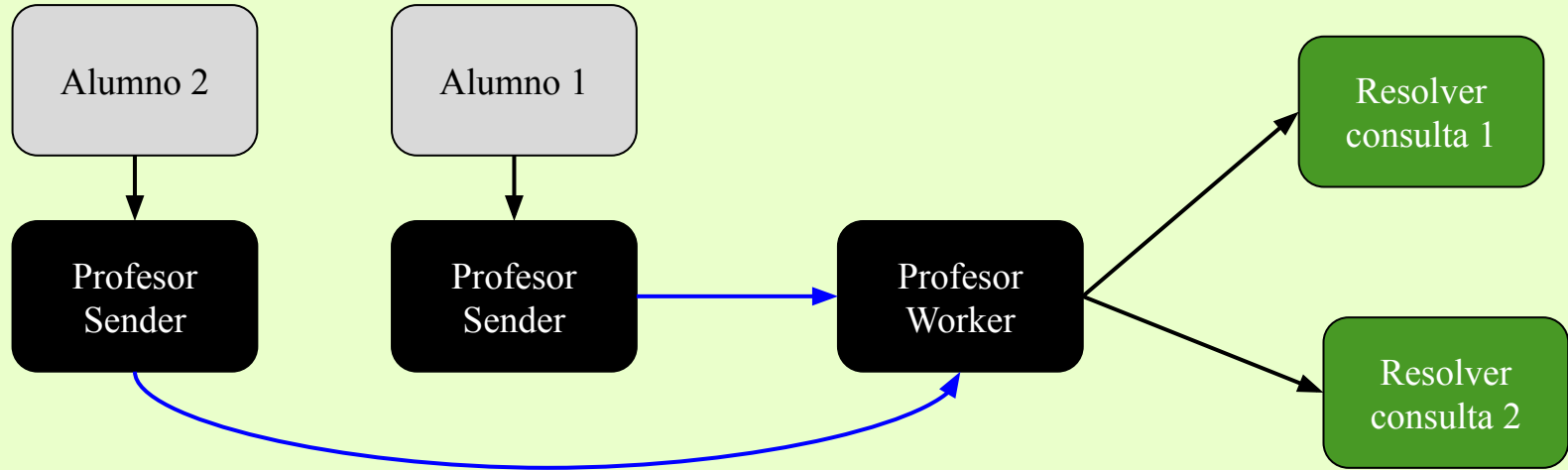
# Estructura Sender/Worker



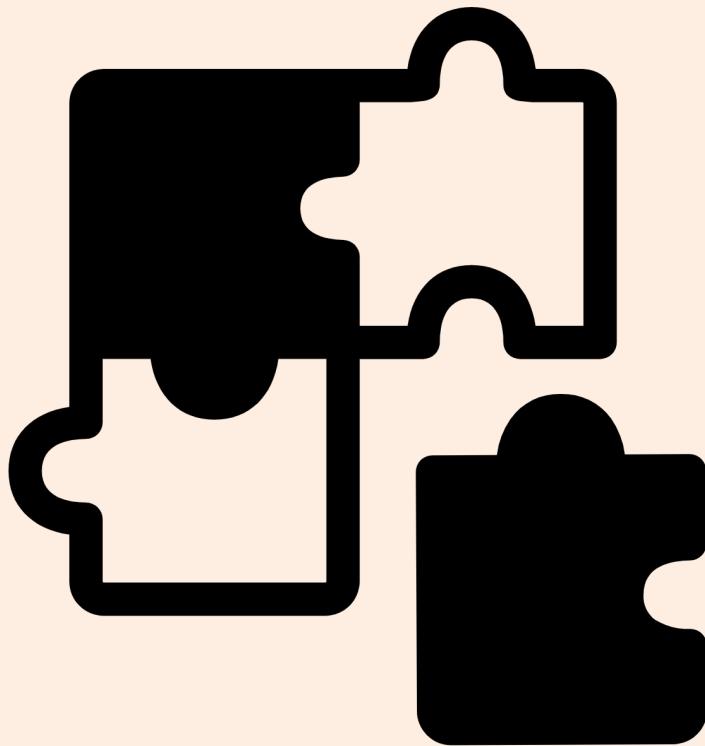
# Estructura Sender/Worker



# Estructura Sender/Worker



# Piece Manager



# Rarest Piece First

Pieza 1



Pieza 2



Pieza 3



Pieza 4



Pieza 5



# Rarest Piece First

Pieza 1



Pieza 2



Pieza 3



Pieza 4



Pieza 5



# Rarest Piece First

Pieza 1



Pieza 2



Pieza 3



Pieza 4



Pieza 5



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Pieza 3



Pieza 4



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Pieza 3



Pieza 4



Pieza 5



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Pieza 2



Pieza 3



Pieza 4



Pieza 5



# Rarest Piece First

Pieza 1



Pieza 2



Pieza 3



Pieza 4



Pieza 5



# Rarest Piece First

Pieza 1



Pieza 2



Pieza 3



Pieza 4



Pieza 5



# Fastest Peer First

Peer 1



Peer 2



Peer 3



Peer 4



Peer 5





# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4



Peer 5



# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4



Peer 5



# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4



Peer 5



# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4



Peer 5



# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4



Peer 5



# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4



Peer 5



# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4



Peer 5



# Fastest Peer First



Peer 1



Peer 2



Peer 3



Peer 4

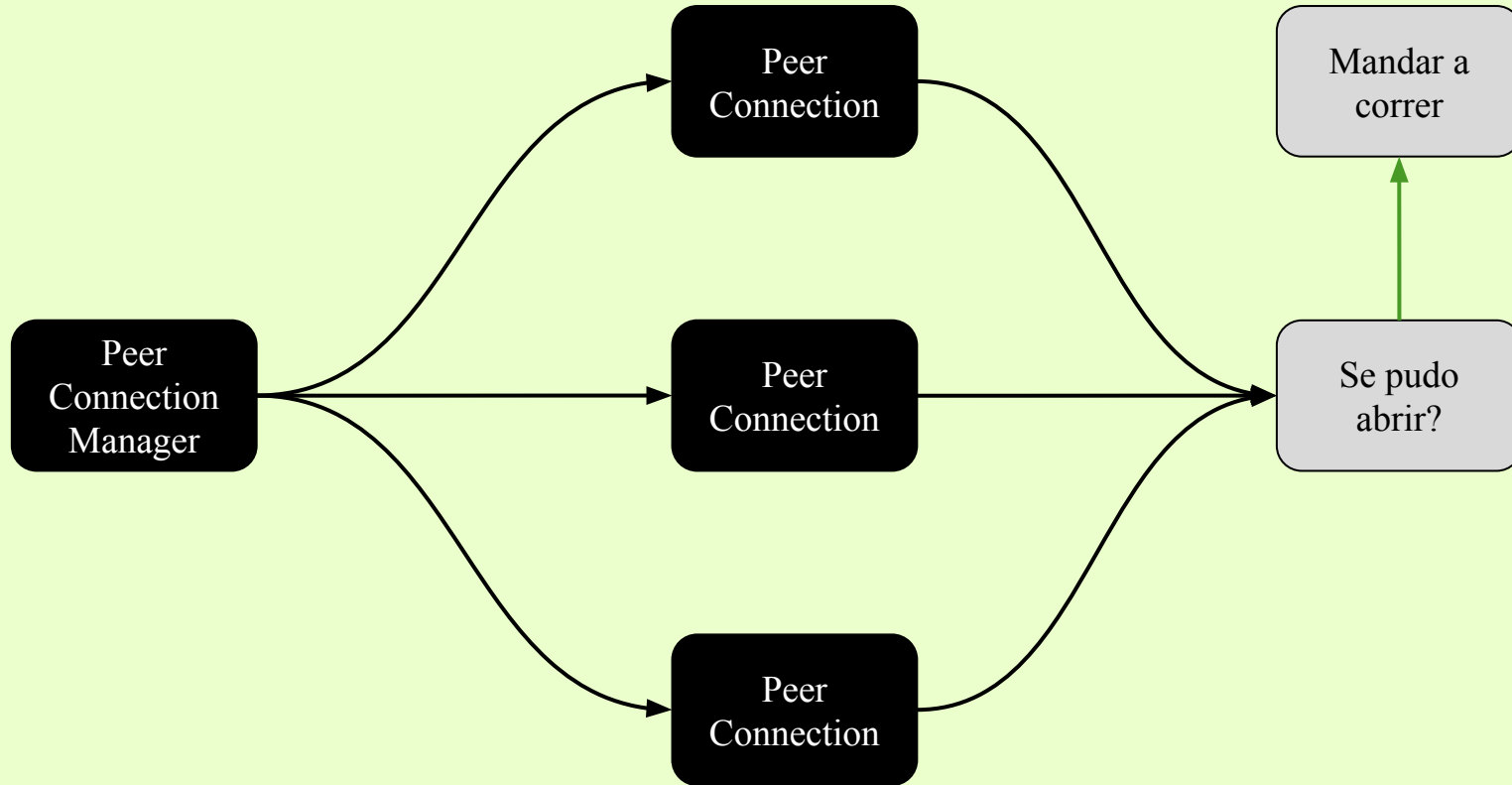


Peer 5

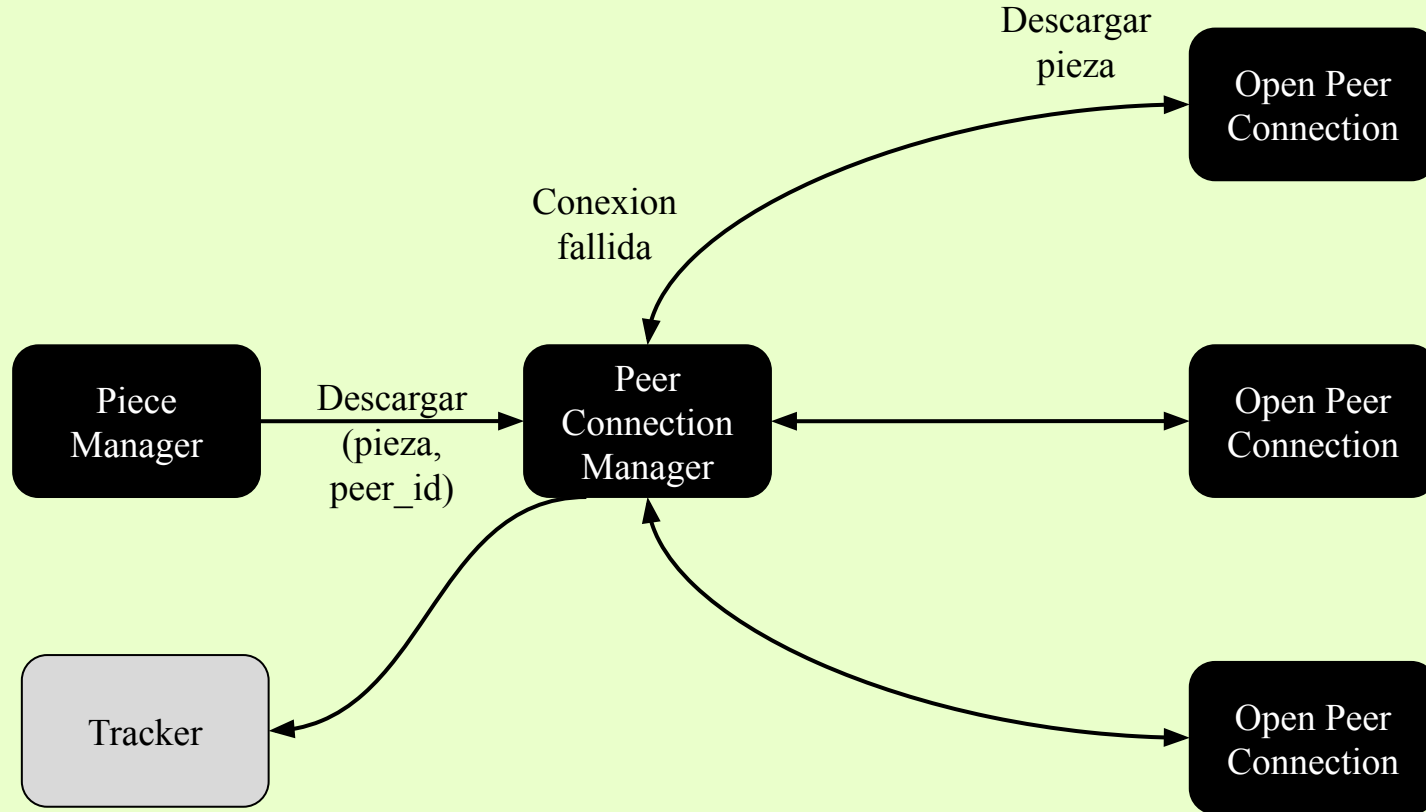




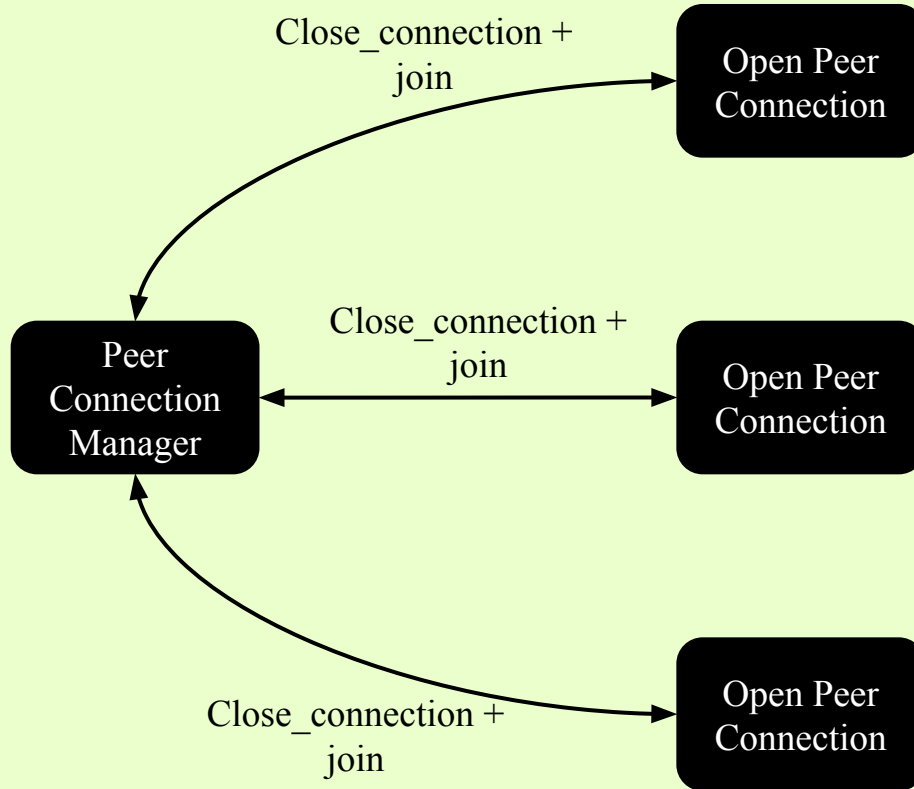
# Peer Connection Manager



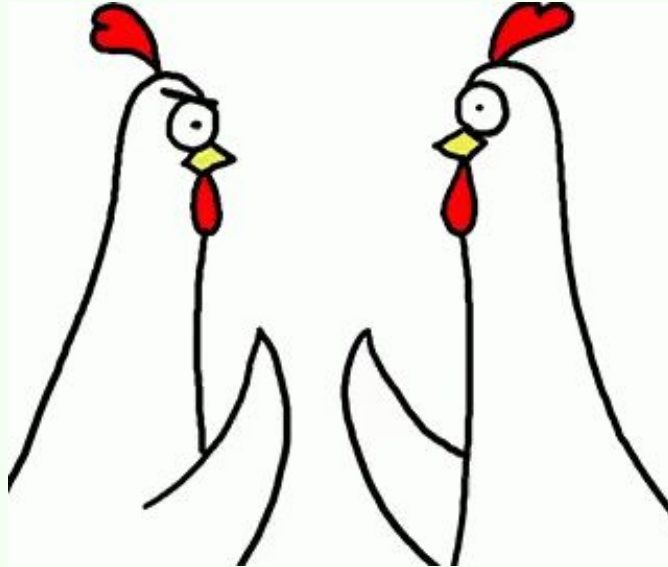
# Peer Connection Manager



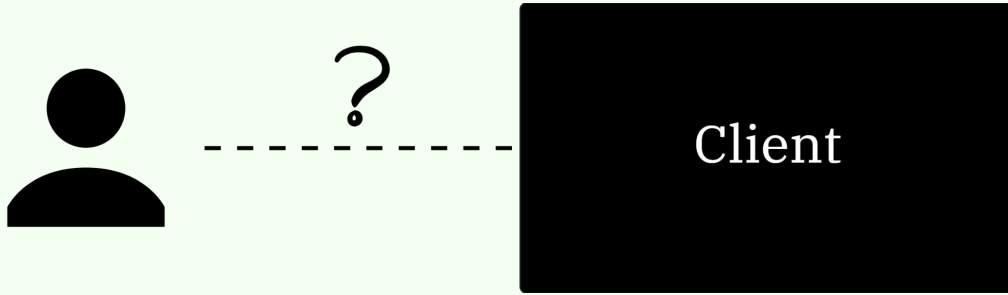
# Peer Connection Manager



# Open Peer Connection



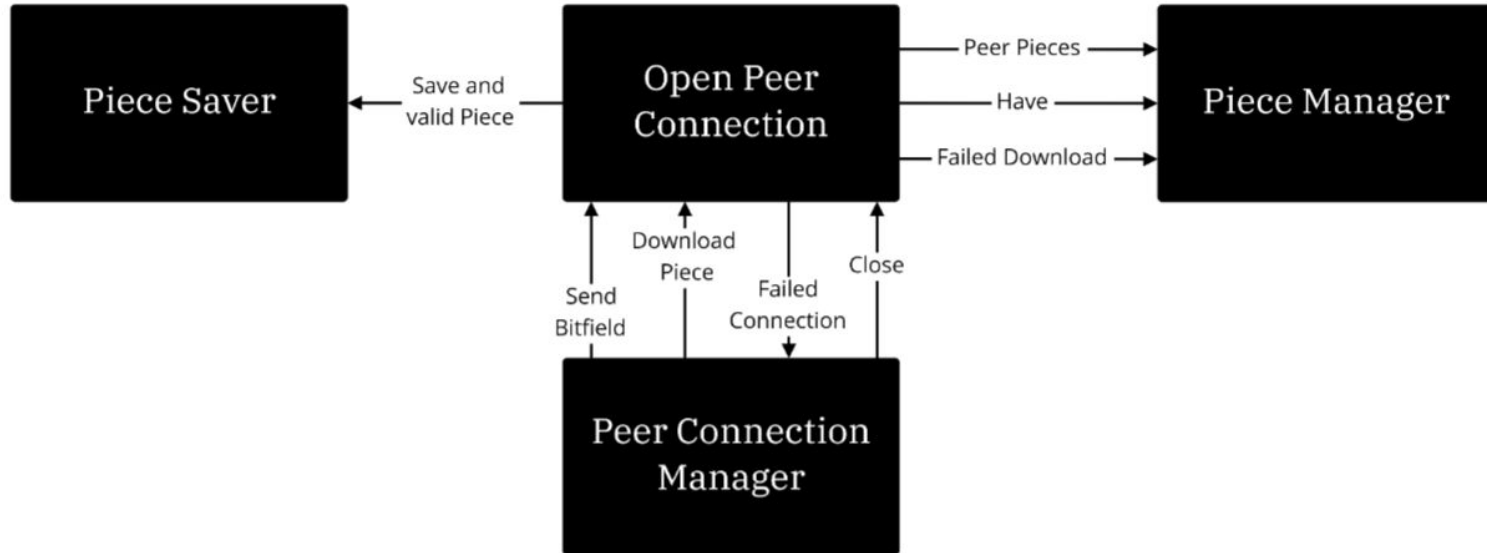
# Open Peer Connection



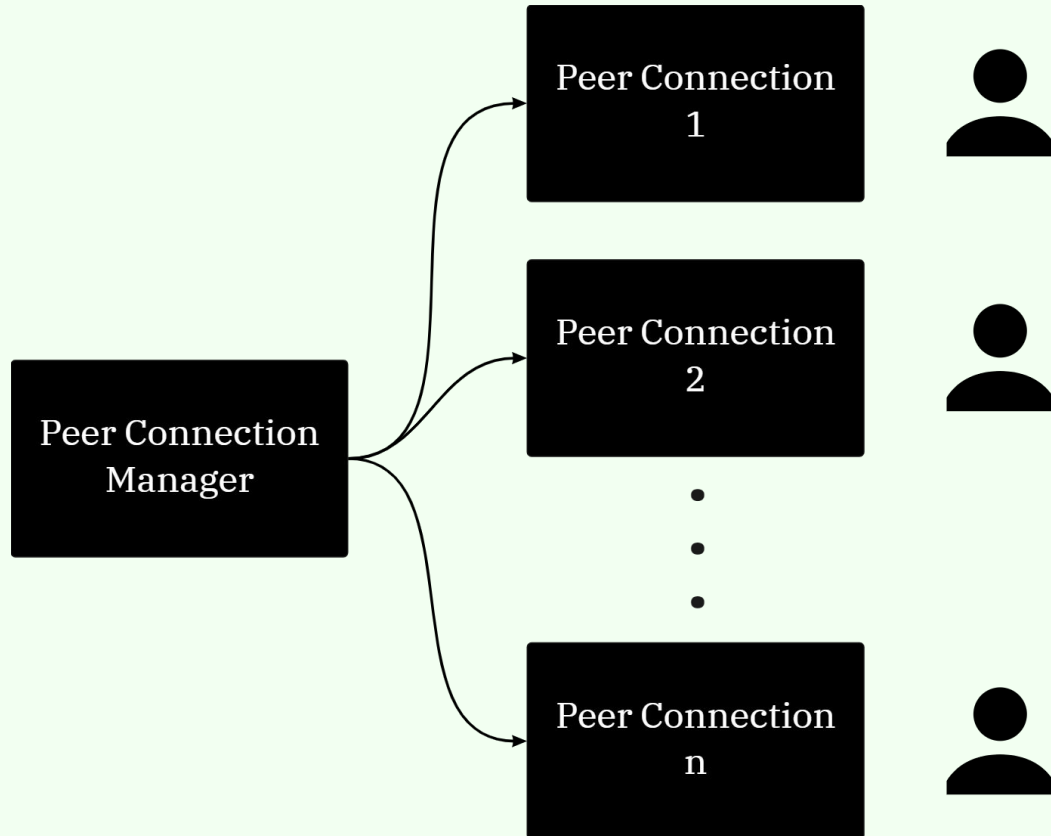
# Open Peer Connection



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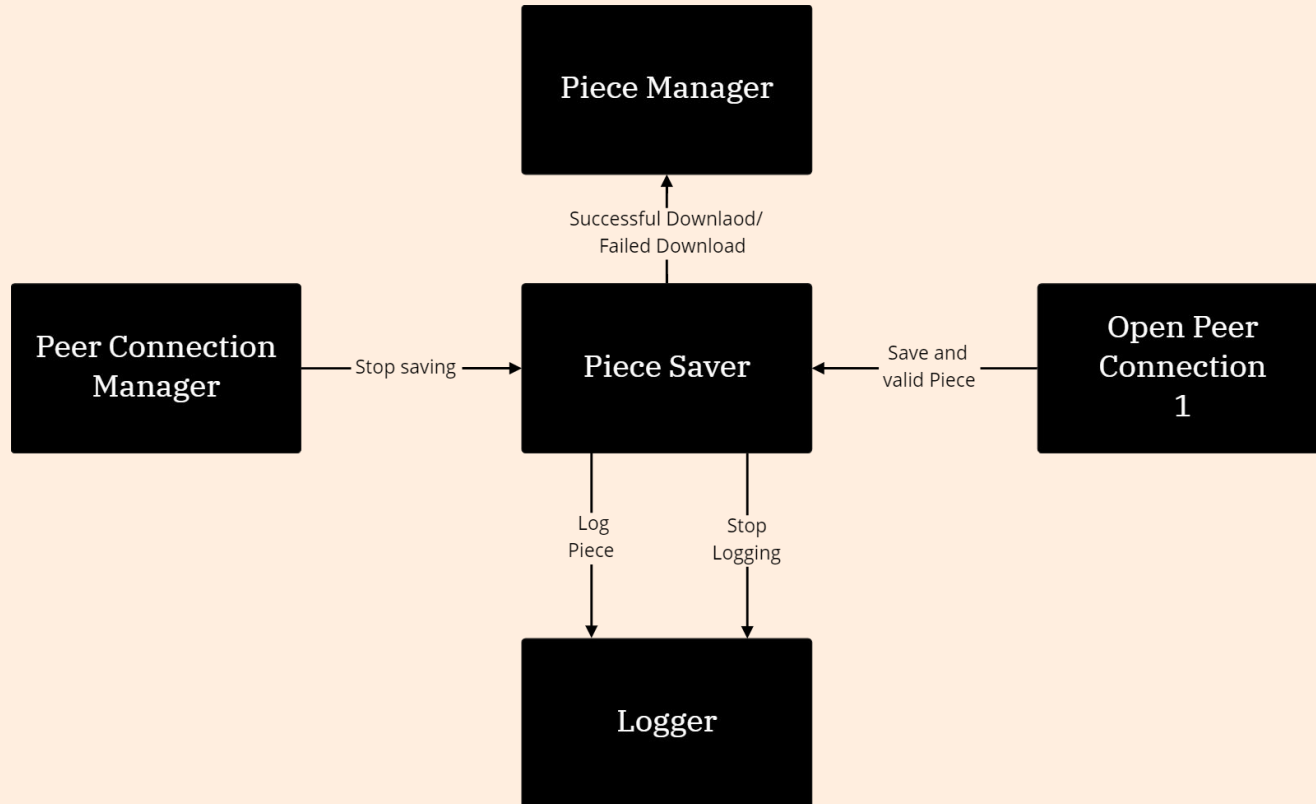


# Open Peer Connection

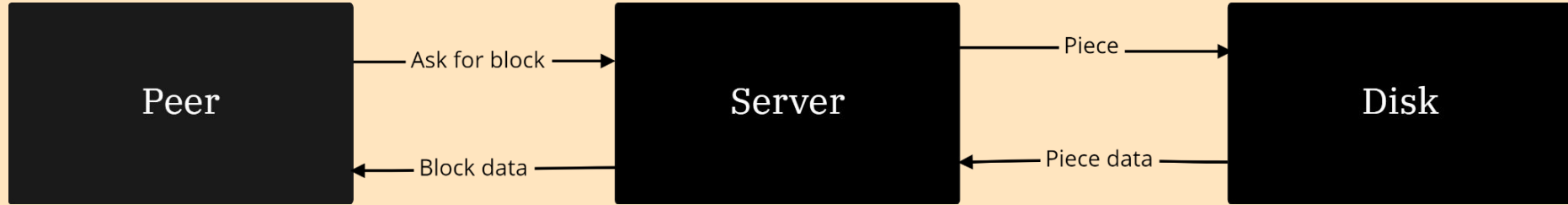




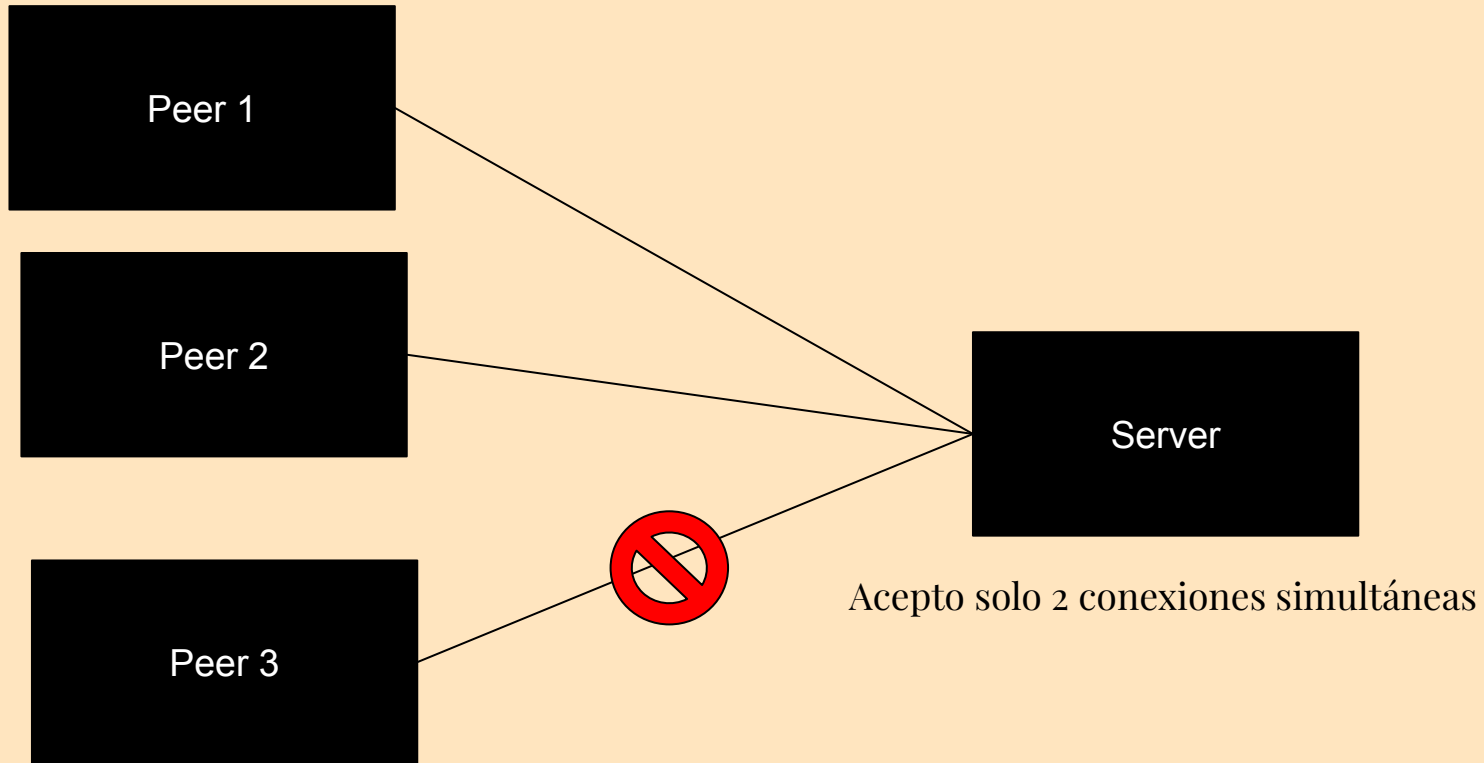
# Piece Saver



# Servidor



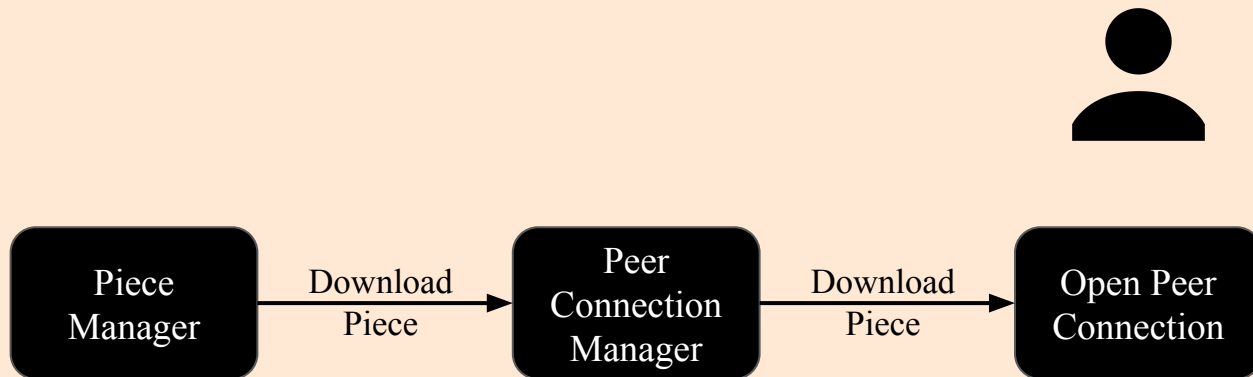
# Thread Pool



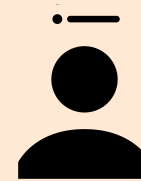
# Obstáculos encontrados



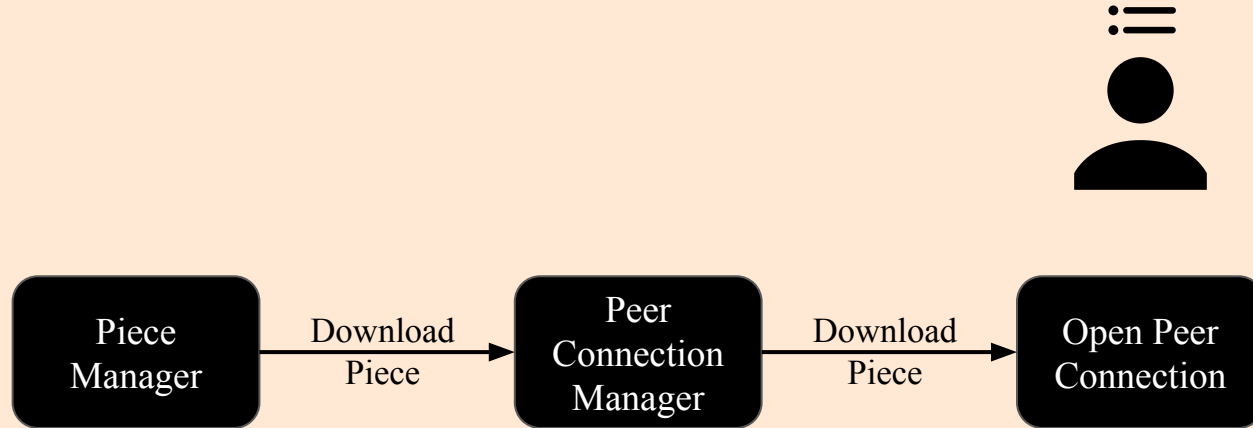
# Problemas de Concurrency



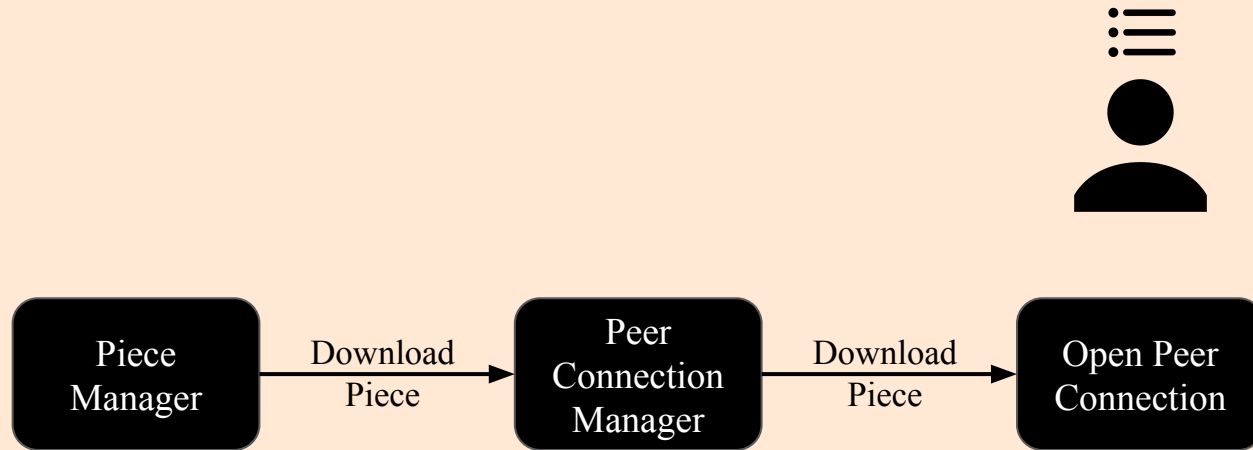
# Problemas de Concurrencia



# Problemas de Concurrency

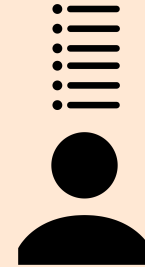


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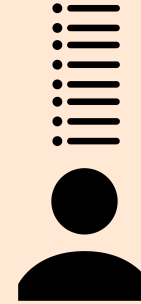




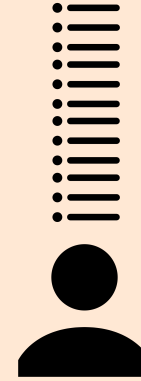
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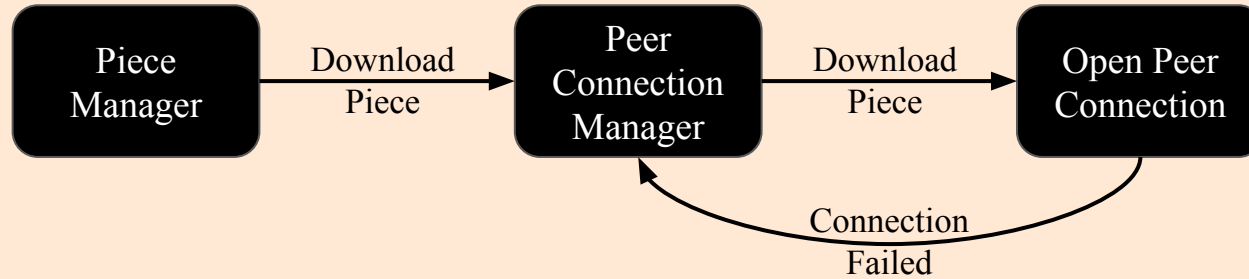
# Problemas de Concurrencia



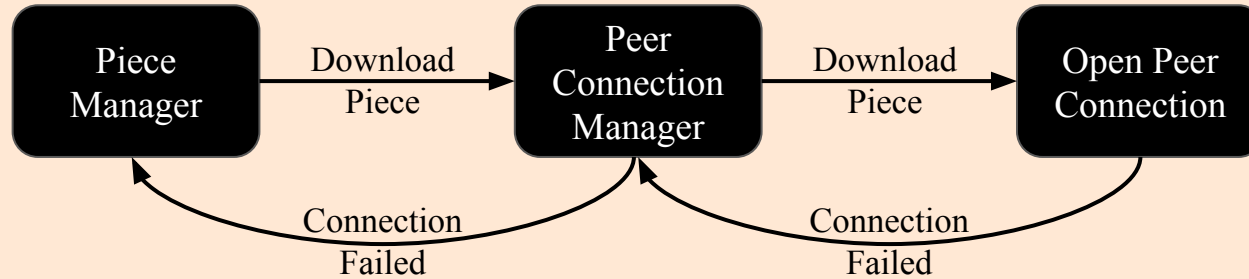
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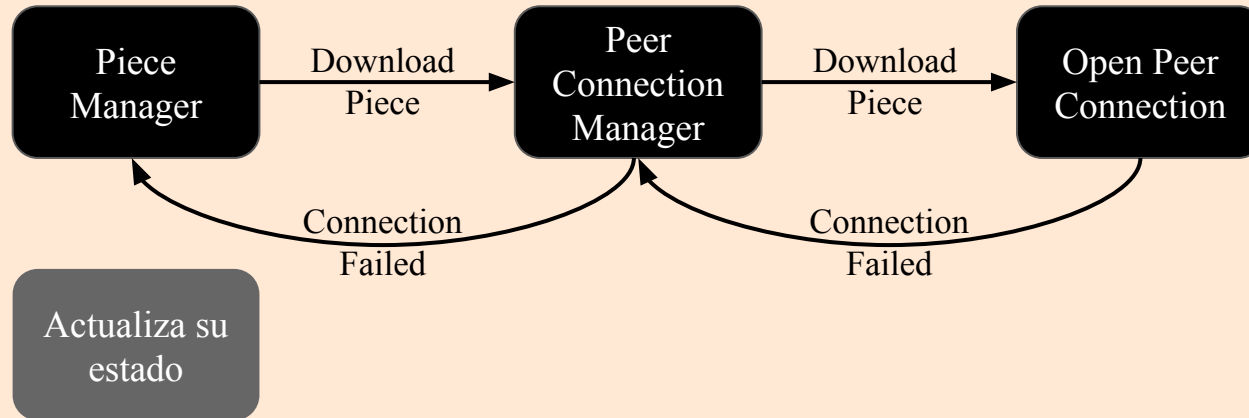
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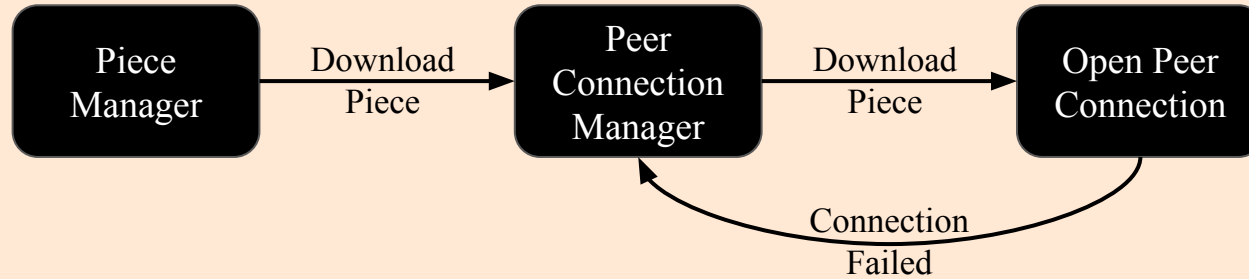
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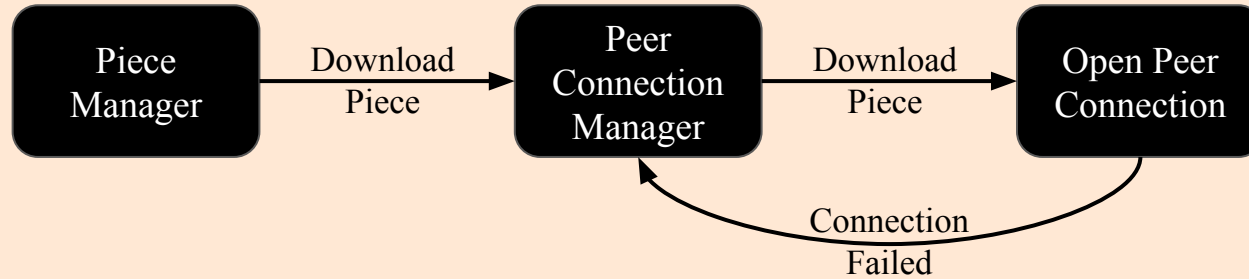


# Problemas de Concurrencia





# Problemas de Concurrency



# Problemas de Concurrencia

Piece  
Manager

Peer  
Connection  
Manager

Open Peer  
Connection



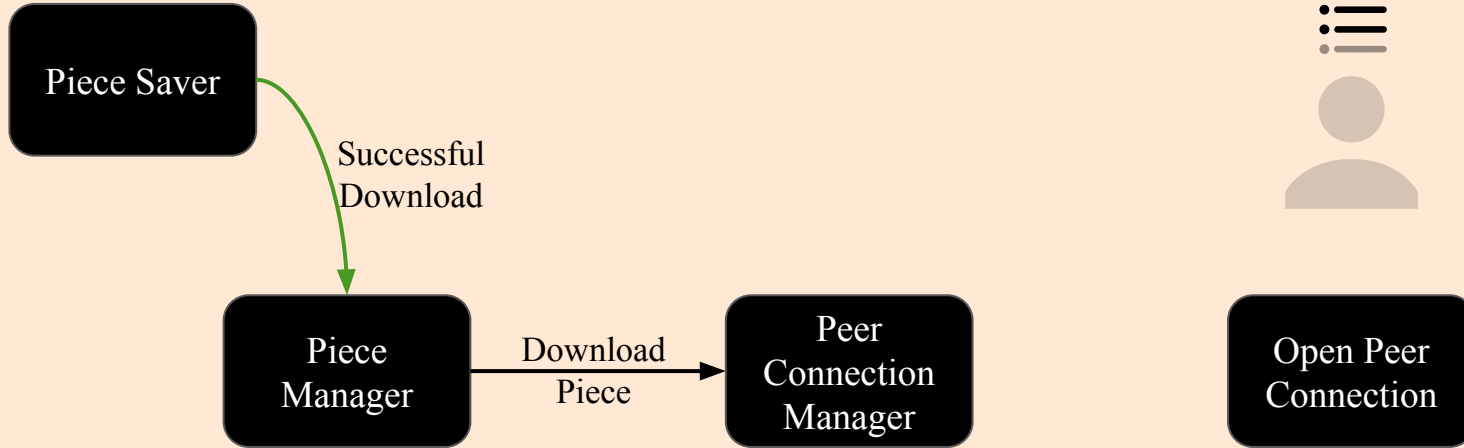
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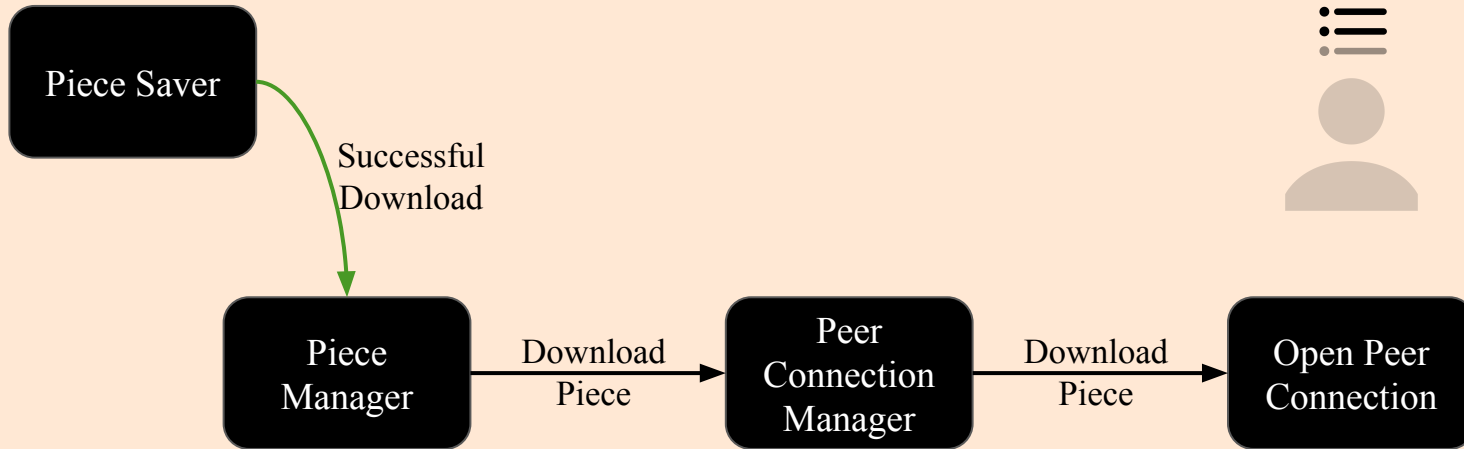
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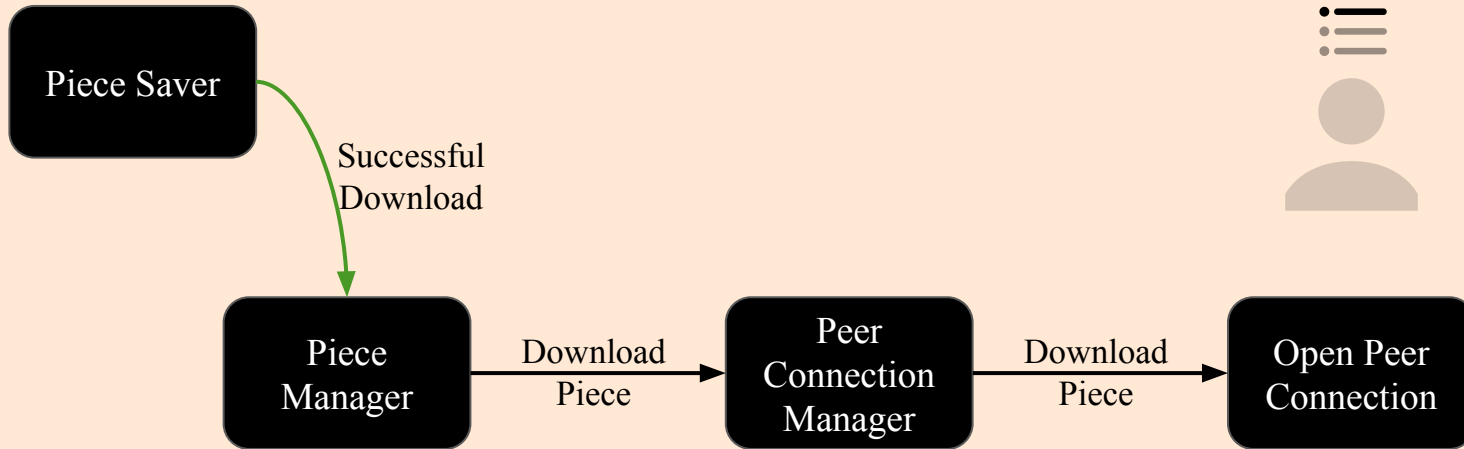
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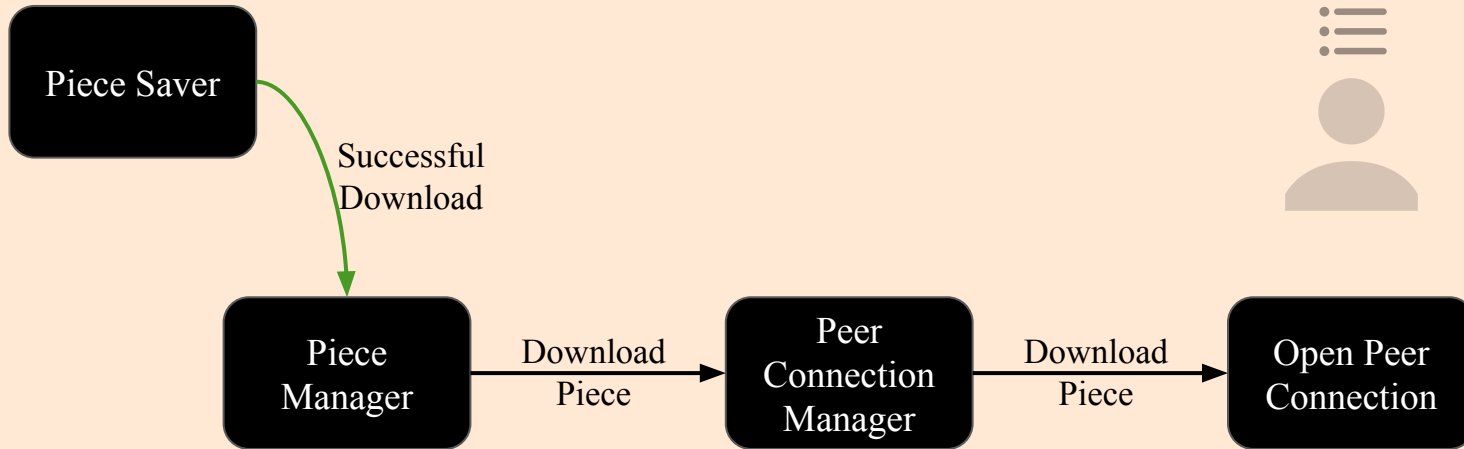
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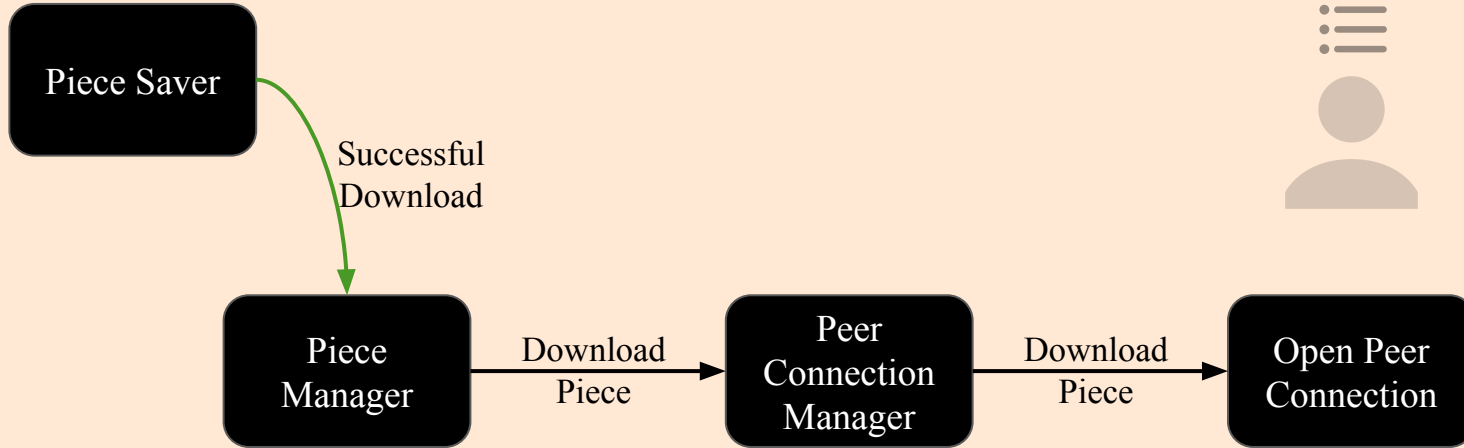


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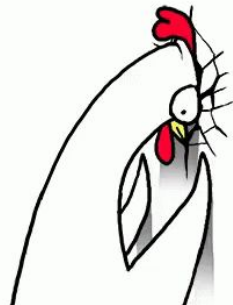
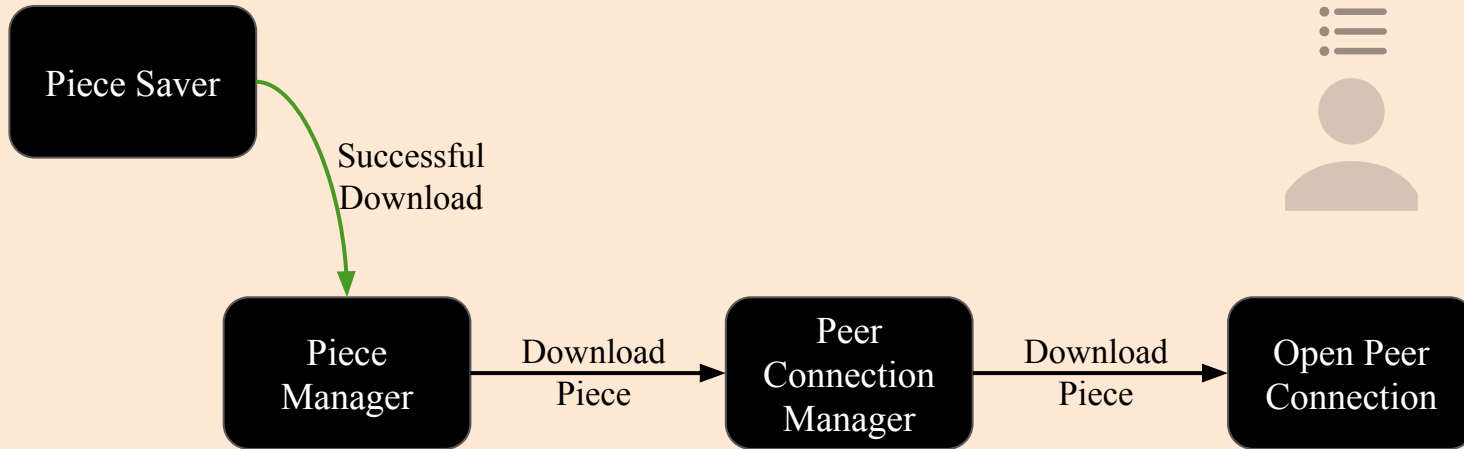




# Problemas de Concurrencia



# Problemas de Concurrency



# Problemas de Concurrency

Piece  
Manager

Peer  
Connection  
Manager

Open Peer  
Connection



# Problemas de Concurrencia



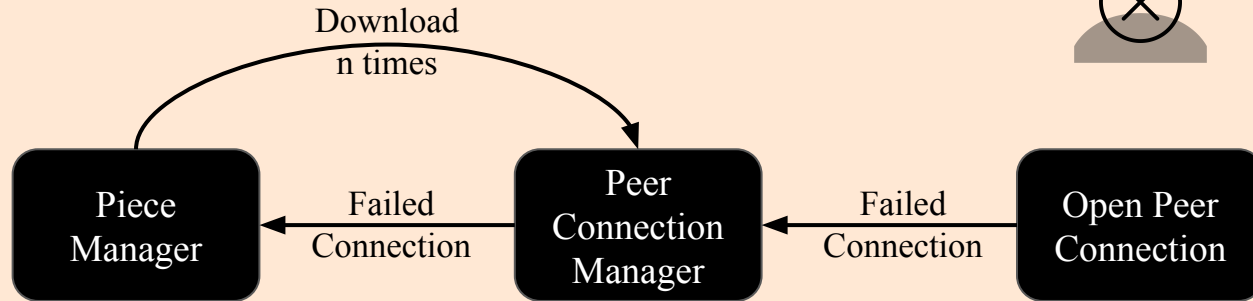
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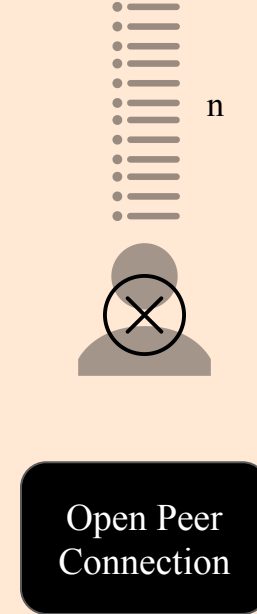
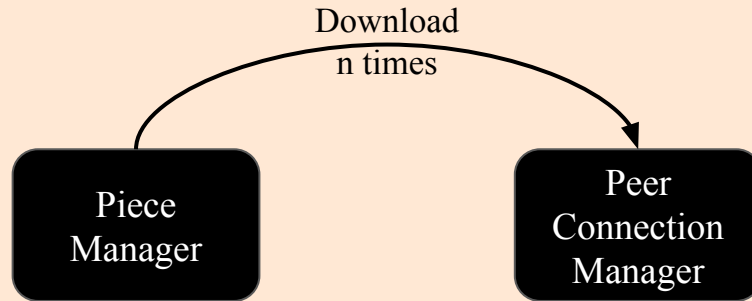
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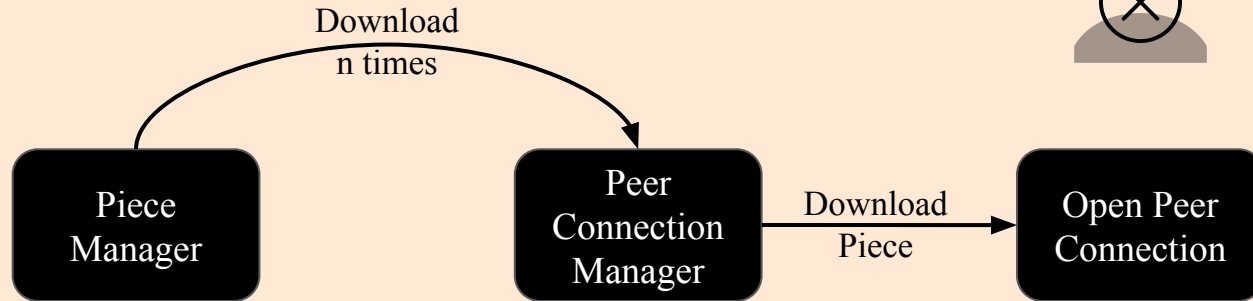


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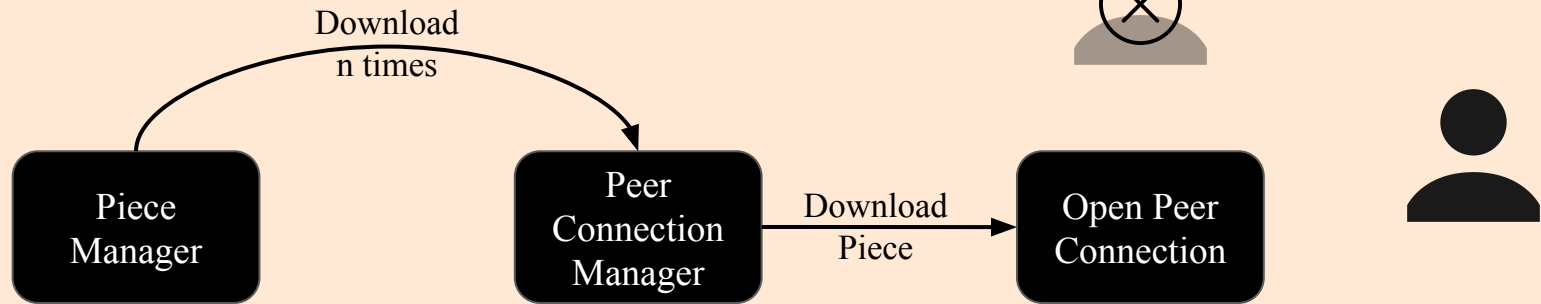




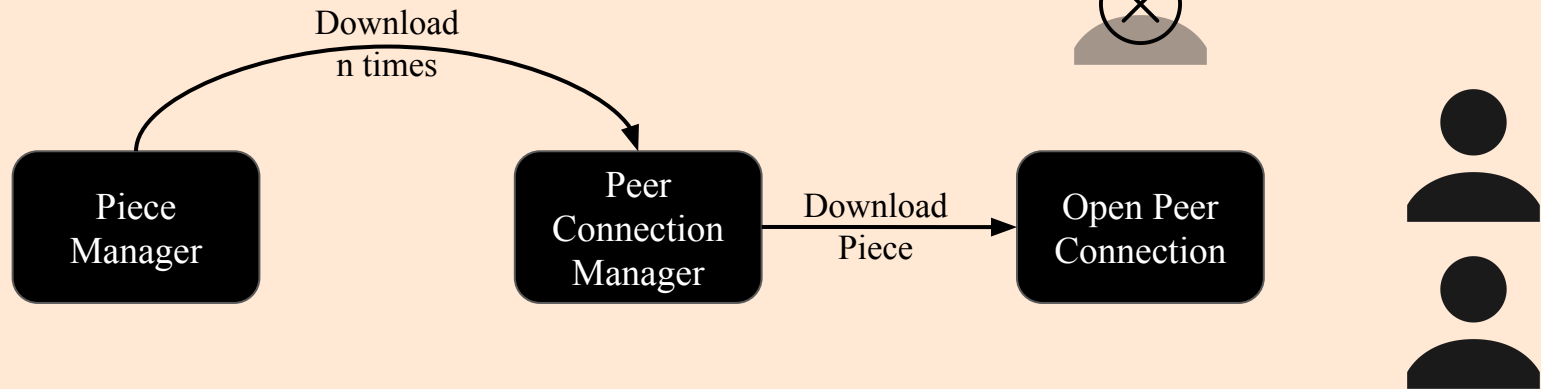
# Problemas de Concurrency



# Problemas de Concurrency



# Problemas de Concurrency



# Conclusiones

- Rust es útil, pero gran curva de aprendizaje :/
- 
- Experiencia en proyecto de este calibre

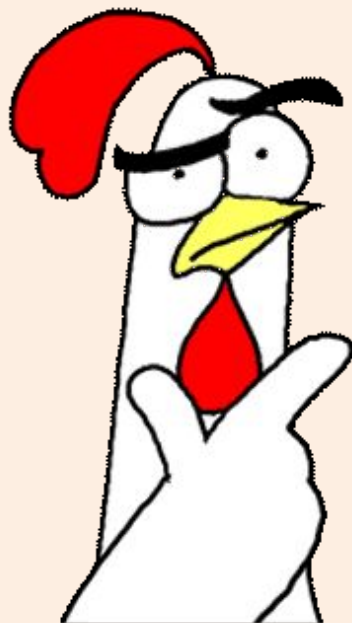
# Potenciales Mejoras

- Requests por timer al Tracker
- Agregar modo end-game
- Cachear piezas cuando el server las lee de disco

# Bibliografía



**¿Preguntas?**





**Polleria Rustiseria**