Programming Assignment 2
Maintaining file consistency in your Gnutella-style P2P system
CS550- Advanced Operating System
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Performance Evaluation:

1. PUSH mechanism

   This evaluation depends on how often file is changed, number of allowed hops and TTL value. Considering file change frequency ~1hz, HOPS=10, number of peers=10, TTL=2 sec and Query request frequency ~1hz

	%valids if TTL=2
peer_1	91
peer_2	85
peer_3	76
peer_4	71

2. PULL mechanism
   Considering file change frequency ~1hz, HOPS=10, number of peers=10, TTL=2 sec and Query request frequency ~1hz

	%valids TTR=40sec
peer_1	100
peer_2	92

Comparison:

a. Difference

	PUSH	PULL
Bandwidth Use	Higher	Lower
Failure rate	Lower	Higher
Implementation	Could use existing Query system.	Need new layer to handle and send request.
Reliability	Lower	Higher

b.

1. PUSH mechanism
   Advantages:
   1. Lower failure rate
   2. Higher file consistency

   Disadvantages:
   1. High bandwidth usage

2. Lower file reliability since validation message could be missed.

Applicability:

1. IoT devices (sensor data sync.)

2. PULL mechanism

Advantages:

1. Higher Reliability
2. Lower Bandwidth usage.

Disadvantages:

1. Higher failure rate
2. Need new layer of protocol

Applicability:

1. Personal Cloud storage