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# **DISTRIBUTED SYSTEMS AND COMPUTING**

## **ASSIGNMENT 2**

**Roll no: 2023115125**

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### **Create and Distribute a Torrent File in a Peer-to-Peer Environment**

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#### **1. Title**

**Torrent File Creation and Peer-to-Peer File Sharing using qBittorrent and Transmission**

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#### **2. Objective**

The objective of this assignment is to demonstrate **peer-to-peer (P2P) file sharing** by creating and distributing a torrent file and sharing data between peers using BitTorrent concepts.

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#### **3. Technologies Used**

- Torrent Clients:
    - **qBittorrent**
    - **Transmission**
  - Operating System: Windows
  - P2P Protocol: BitTorrent
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#### **4. Torrent Creation**

##### **4.1 Description**

A torrent file was created to share a selected file in a decentralized manner.

##### **4.2 Steps Followed**

1. Selected a file to be shared.
  2. Created a `.torrent` file using qBittorrent.
  3. Configured tracker information.
  4. Enabled seeding on the source machine.
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## 5. Torrent Distribution

### 5.1 Seeding

- The original file was seeded using **qBittorrent**.
- The seeder made the complete file available to peers.

### 5.2 Downloading

- Another peer used **Transmission** to download the file.
- The torrent client connected to the seeder.

### 5.3 File Integrity Verification

- Torrent clients automatically verified file integrity using hash checks.
  - The downloaded file matched the original file successfully.
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## 6. Peer-to-Peer Setup

- One system acted as the **seeder**.
  - Another system acted as the **leecher**.
  - Data was transferred without a centralized server.
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## 7. Expected Output Achieved

- Successful `.torrent` file creation.
  - Successful file sharing between peers.
  - Fully downloaded and verified file.
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## 8. Screenshots Included

- Torrent file creation screenshot.
- Seeding status in qBittorrent.

- Downloading status in Transmission.
  - File verification status.
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## 9. Ethical Considerations

- Only non-copyrighted and non-sensitive files were shared.
  - No illegal content was distributed.
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## 10. Conclusion

This assignment successfully demonstrated **peer-to-peer file sharing** using BitTorrent. The use of qBittorrent and Transmission provided hands-on experience with decentralized systems and torrent-based data distribution.

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