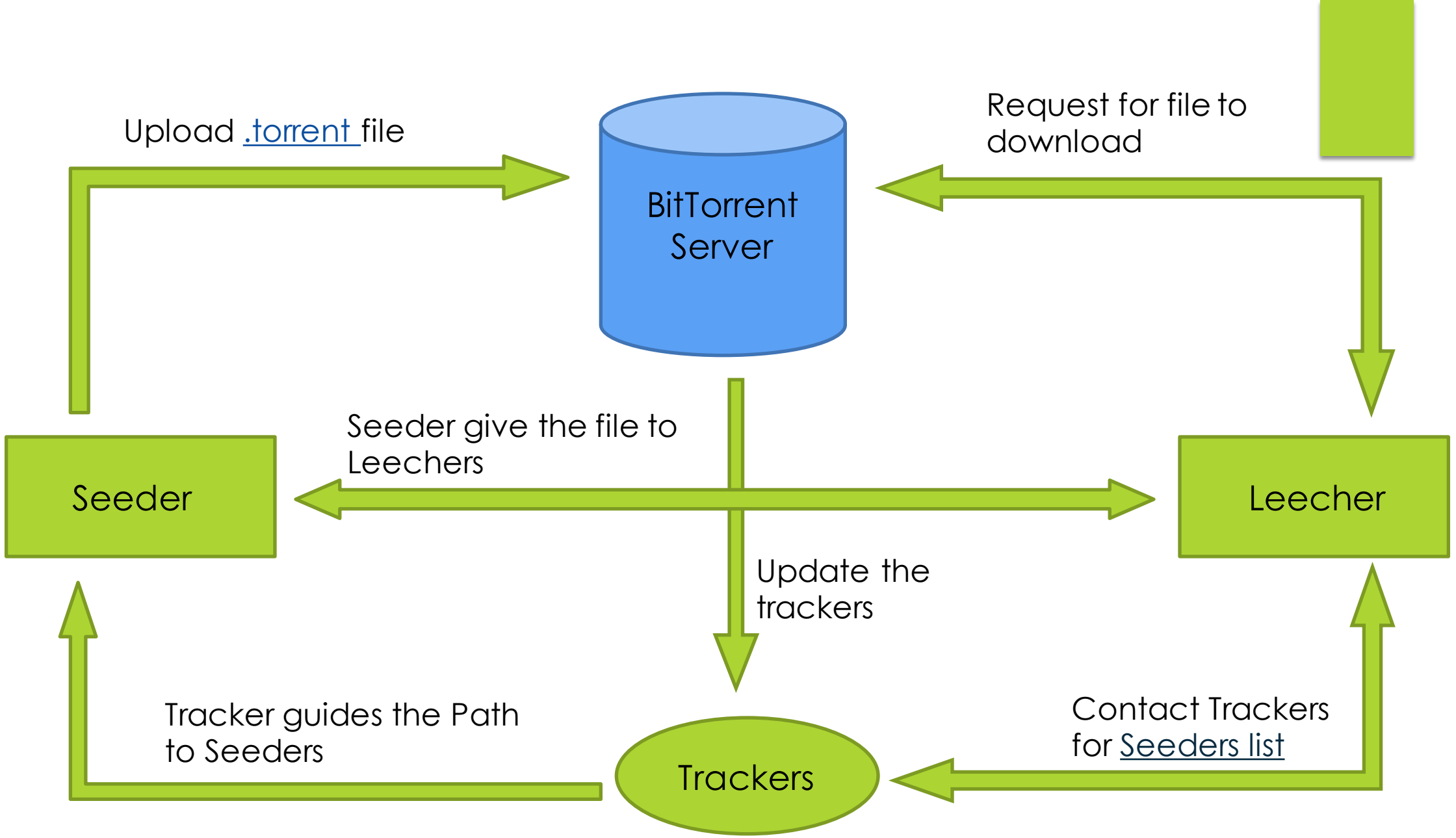
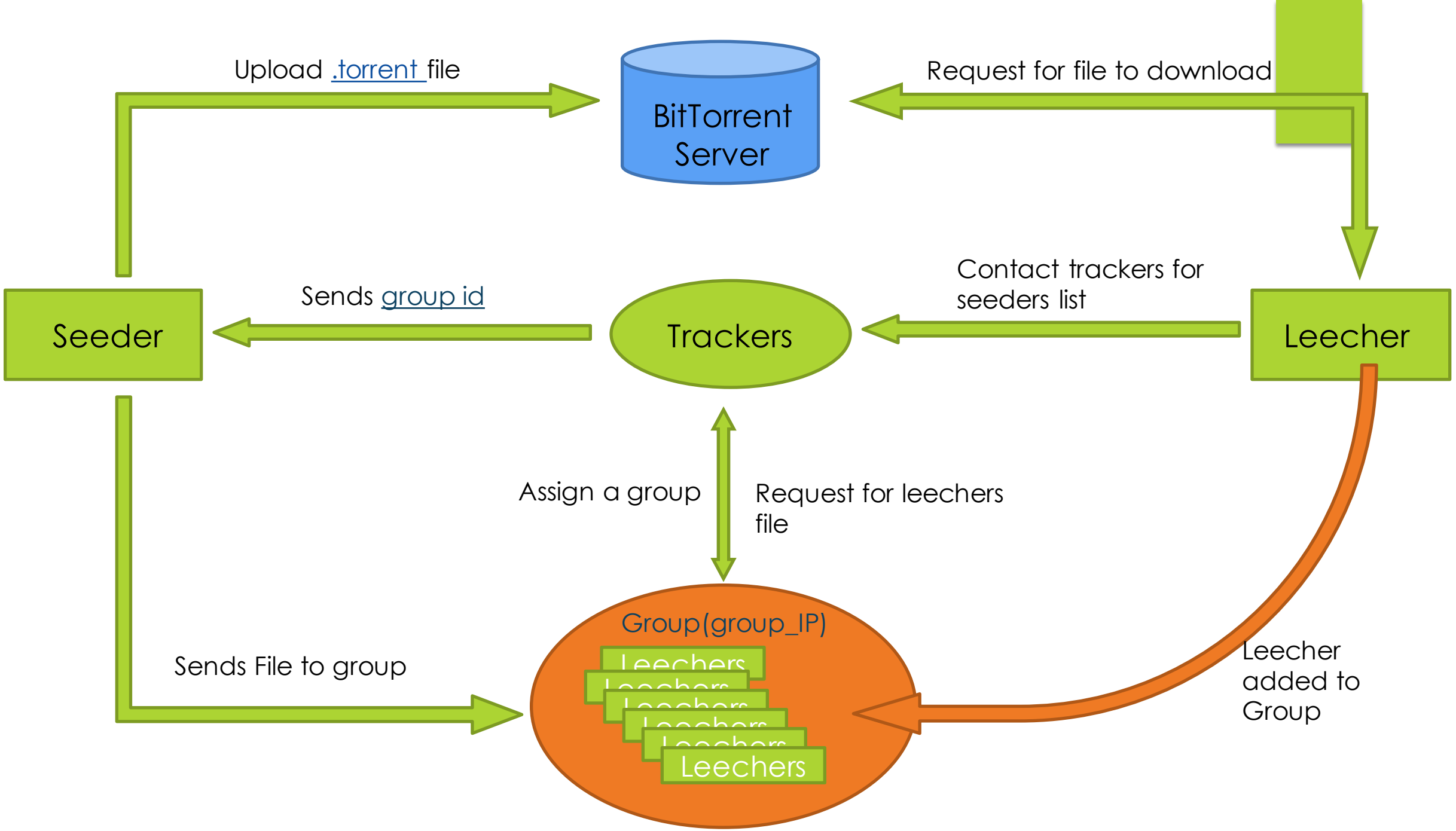
BitTorrent Implementation

CS 425A (COMPUTER NETWORKS)

Project By:
Group 8


Upload .torrent file
BitTorrent Server
Request for file to download
Seeder
Seeder give the file to Leechers
Leecher
Update the trackers
Tracker guides the Path to Seeders
Trackers
Contact Trackers for Seeders list


Upload .torrent file
BitTorrent Server
Request for file to download
Seeder
Sends group id
Trackers
Contact trackers for seeders list
Leecher
Assign a group
Request for leechers file
Group(group_IP)
Leechers
Sends File to group
Leecher added to Group

BitTorrent Server

- Server will provide the torrent file for the corresponding Files.
- When a new seeder uploads an existing file, it will inform the tracker the to update its list of seeders.
- Table Structure:

Key	File Name
… … … …	… … … …

Seeder

- Create a torrent file and upload it to the BitTorrent Server.
- When a leecher downloads a file, its tracker will create a group and assign unique group IP and send this group IP to seeder.
- Seeder now send the file to this group using TCP connection.

Leecher

- To download a file, leecher will contact the bitTorrent server for the torrent file.
- After receiving the torrent file, tracker will make the leecher to join the group.
- From the group, leecher will download the file using UDP connection.

Tracker

- Tracker contains the following:
  - Key, File name, list of seeders
- Tracker contains a temporary dictionary storing the list of group Ips connected to individual seeder.
- Only tracker has right to form or delete a group.

Group

- Contains a list of leechers.
- Group will connect UDP connection with leechers.
- Group node will send files to leechers.
- Group will also connect TCP connection with seeders to get the file.

Innovation

- Proximity
  - Group is formed on the basis of the response time between tracker and leecher.
  - Several group will be formed for the different range of response times.

Thank You