

Hyrax: Edge Clouds of Mobile Devices

Utsav Drolia, Rolando Martins, Jiaqi Tan, Rajeev Gandhi and Priya Narasimhan (CMU)

REQUIREMENTS:

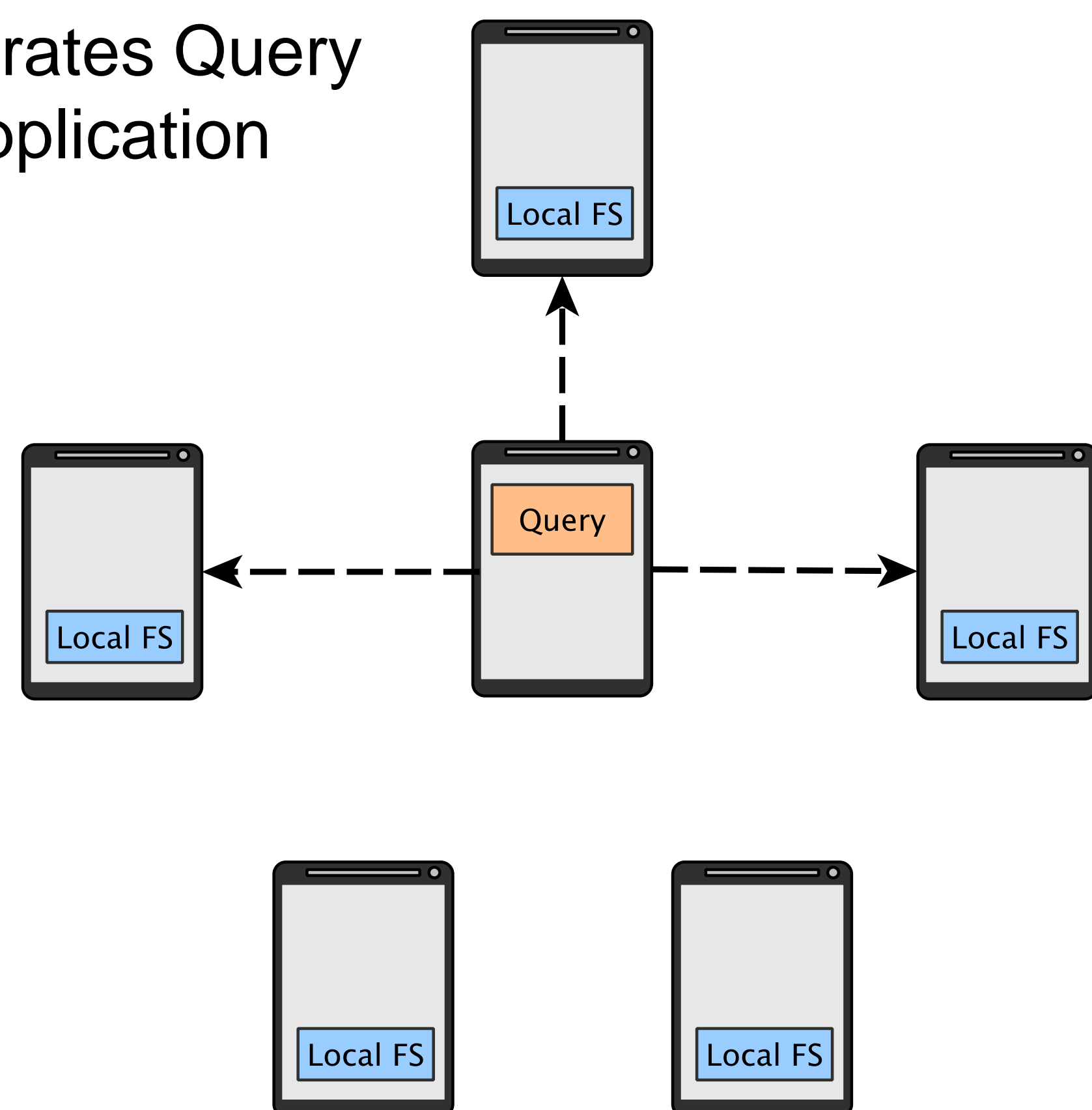
- **Low latency** for coordination and cooperation
- **Harvest** edge computational resources to minimize or avoid the use of clouds and cloudlets
- Provide support for **task/behavior parallelization** among the edge nodes (robot, drone, sensors, etc)

ASSUMPTIONS:

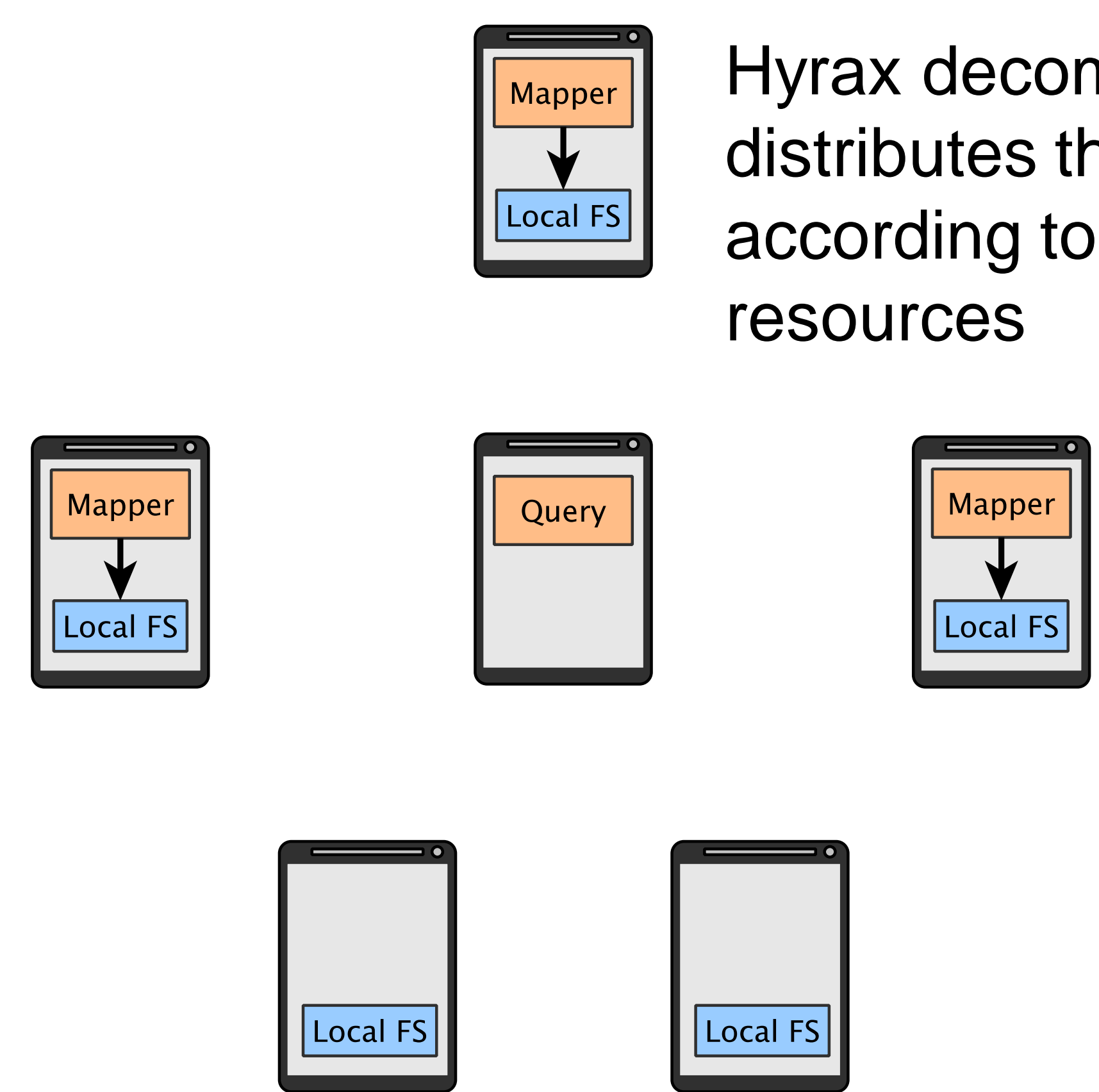
- **Absence or low-connectivity** to a back-end, i.e., cloudlets and clouds
- Cloudlets and clouds, if present, are mainly for **off-loading batch processing** (e.g., image search in large databases)
- Highly **heterogeneous** environment
- Highly **transient** nature

EXAMPLE SCENARIO

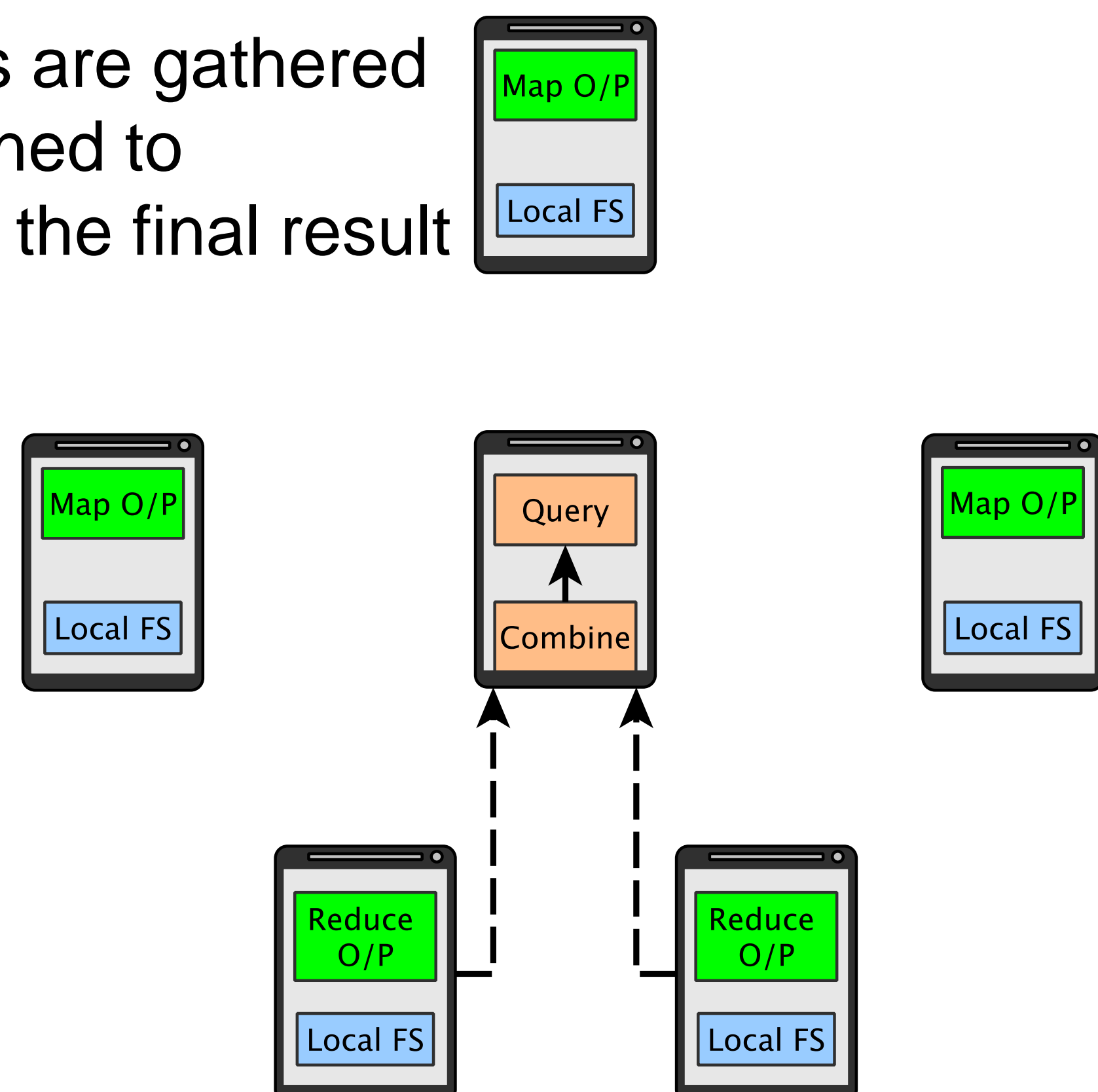
User generates Query through Application



Hyrax decomposes and distributes the job according to available resources



The results are gathered and combined to synthesize the final result



The computation is pushed onto the next Stage (Reduce)

