

# APZ-DA

## **Database Acceleration Application Based on Vitis Libraries**

PES, Zoho, AMD Collaboration

# Team

- Arun M (PES)
- Neha Anna Johns (PES)
- Pranav Varkey (PES)
- Anagha (Zoho)

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# Motivation

- Accelerating database processing with the power of FPGAs are hard without good knowledge of FPGAs. This application aims to bridge that gap.
- We'll do this by creating an application that provides a layer of abstraction to the user but not sacrifice control
- We plan to use the vitis database libraries in this application. Which provide optimised hls kernels for database acceleration.

# Roadmap

1. Implement Vitis Libraries on FPGA
2. Optimisations
3. Package Application

# Status

## Queries In Focus

Queries	Phase	Remark
SELECT	1	Porting the hls kernel
DELETE	1	Porting custom hls kernel
BITWISE	1	Synthesising
JOIN	1	TBD
AGGREGATE	1	Testing
UPDATE	1	On hold

# Similar Works

- Data Analytics - Xilinx
  - Big data analytics on FPGA boards
  - Limited support, only for AWS F1 instance and the u200 board
  - Last commit at 6 years ago

# Possibilities

- Database Encryptor
- Database Compressor and Disaster Recovery Migration
- DPR with kernels
- Multiple queries on a single board using DPR