

**ADB Project Design Phase**

# Team 18

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# Supervisor

**Eng. Abdelrahman kaseb**

**HNSW Searcher:**

* This module will take the subspace graph which is read by the **Graph Reader module** which will start taking a graph for each subspace, to be able to search in each graph corresponding to a subspace alone, then we combine the results at the end using the product quantizer module (PQ).
* And the search query will be inserted into the vector divisor module, which will give the HNSW Searcher module the corresponding subspace part which we should apply the searching on it.
* Then we should apply the searching algorithm by keeping looking in the graph layers, till we find the nearest K neighbors at the lowest layer, then we just return the list of candidates for each subspace.
* These candidates are then passed to the Product quantizer (PQ) module, which is responsible for combining the resultant candidates, and provide us with our actual K results.

**Product Quantizer:**

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