Lab 2: Docker + OpenSearch

CSI403 - Full Stack Development

Faculty of Information Technology

Sripatum University

Weight: 3.75%

Objectives

✓ Install Docker Desktop
✓ Run OpenSearch container
✓ Configure Hybrid Search Pipeline

Task 1: Install Docker Desktop

1. Download from https://docker.com
2. Install and start Docker Desktop
3. Verify installation:

```
docker -version
```

> **Note:** Make sure Docker Desktop is running
> before proceeding to next tasks.

Task 2: Run OpenSearch

```
docker run -d --name opensearch-node \
  -p 9200:9200 -p 9600:9600 \
  -e "discovery.type=single-node" \
  -e "DISABLE_SECURITY_PLUGIN=true" \
  opensearchproject/opensearch:2.11.1
```

Ports:

- 9200 - REST API
- 9600 - Performance Analyzer

Task 3: Verify OpenSearch

```
curl http://localhost:9200
```

Expected response:

```
{
  "name" : "opensearch-node",
  "cluster_name" : "docker-cluster",
  "version" : { "number" : "2.11.1" },
  ...
}
```

Task 4: Setup Hybrid Search Pipeline

```
curl -X PUT "localhost:9200/_search/pipeline/hybrid-search-pipeline" \
  -H "Content-Type: application/json" \
  -d '{
    "phase_results_processors": [{
      "normalization-processor": {
        "normalization": {"technique": "min_max"},
        "combination": {
          "technique": "arithmetic_mean",
          "parameters": {"weights": [0.3, 0.7]}
        }
      }
    }]
  }'
```

Task 5: Check Health

```
curl http://localhost:9200/_cluster/health?pretty
```

Look for:

- "status": "green" or "yellow"
- "number_of_nodes": 1

Deliverables

Item	Check
Docker installed	☐
OpenSearch running	☐
Pipeline created	☐
Screenshots	☐

Deadline: Sunday 23:59