Benchmarking with Scripts

Introduction to Database Systems

DataLab

CS, NTHU

Why Do We Need Scripts?

1. To setup the system quickly.
2. To deploy and benchmark the system in different machines.
3. The environment may not have Eclipse!

Check Your Environment

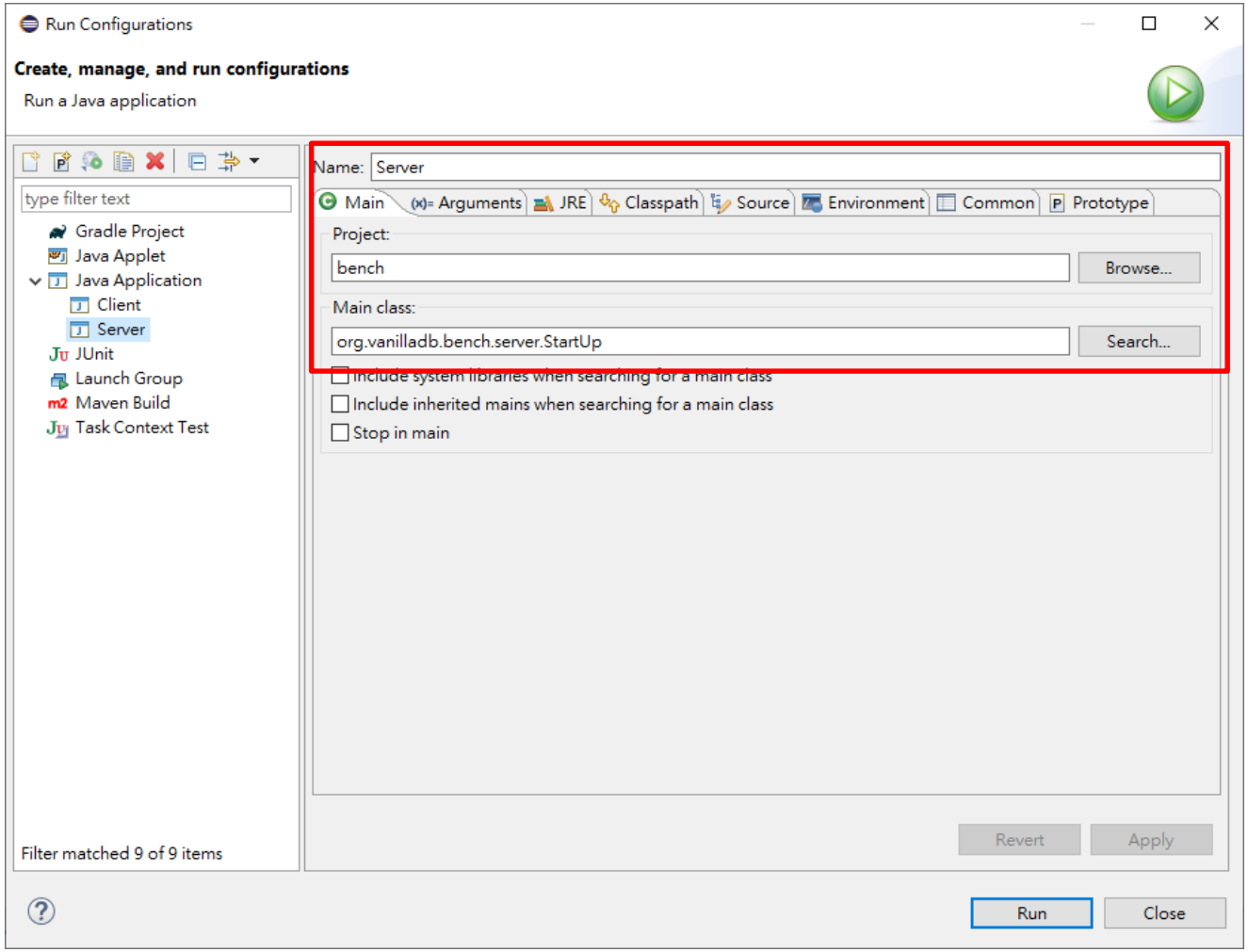
- Requirements
  - Bash
    - Which you may have had if you are using Unix, Unix-like systems or have installed Git on Windows.
  - Java in your system path

```
> java -version
```

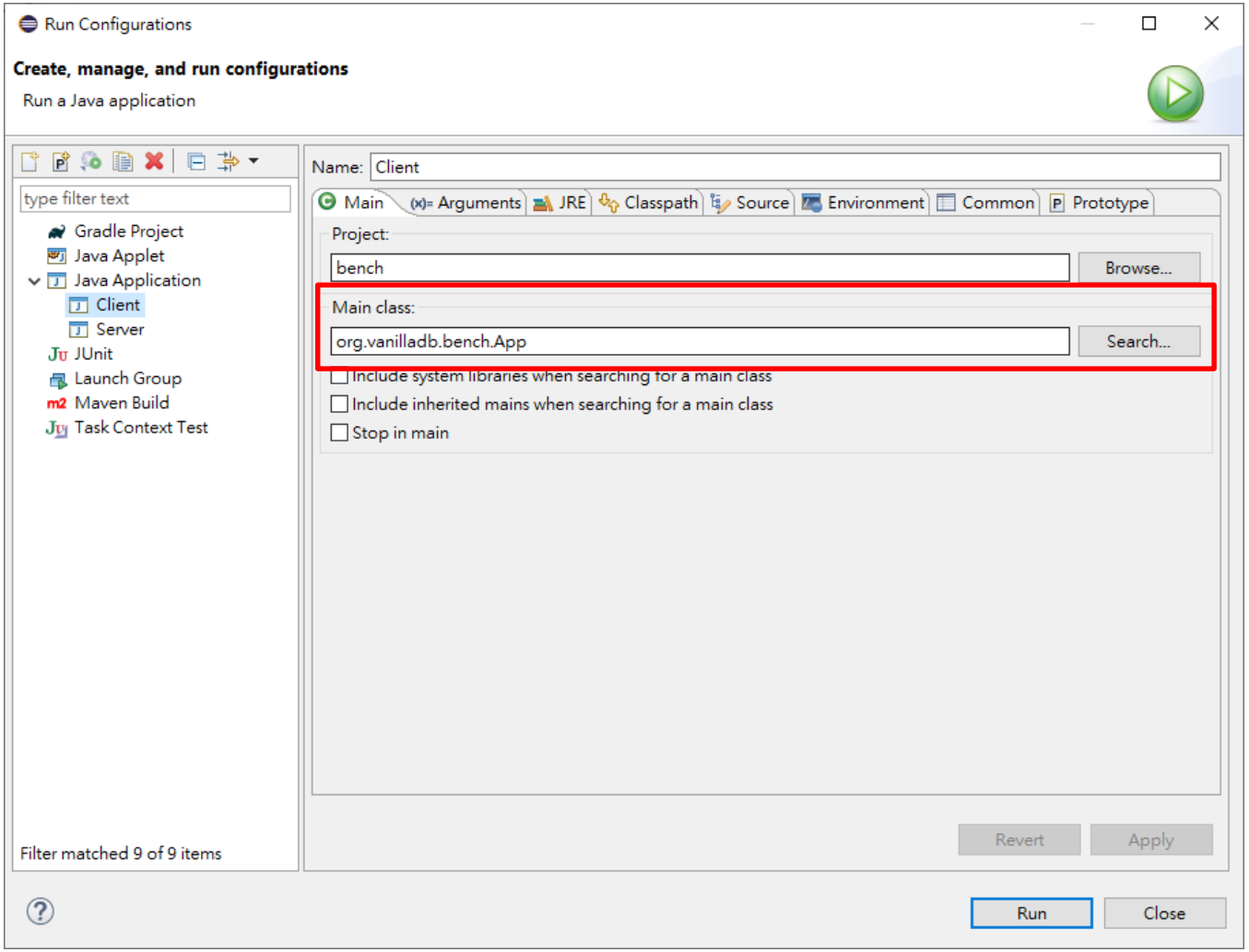
Package Your Code

- We use Eclipse built-in tools.
- Steps
  1. Setup run configurations for jars.
  2. Export the project.

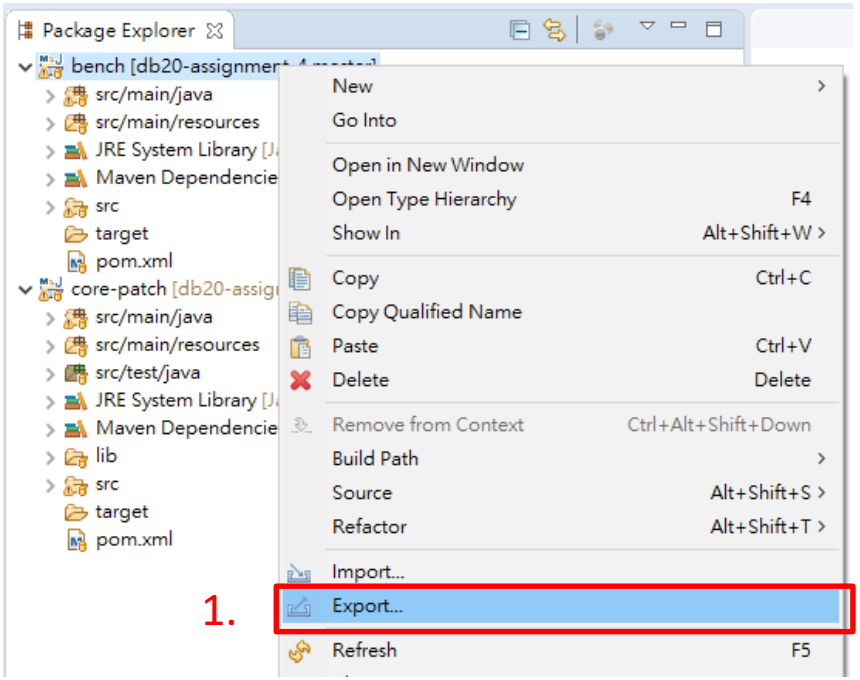
Setup Run Configurations - Server

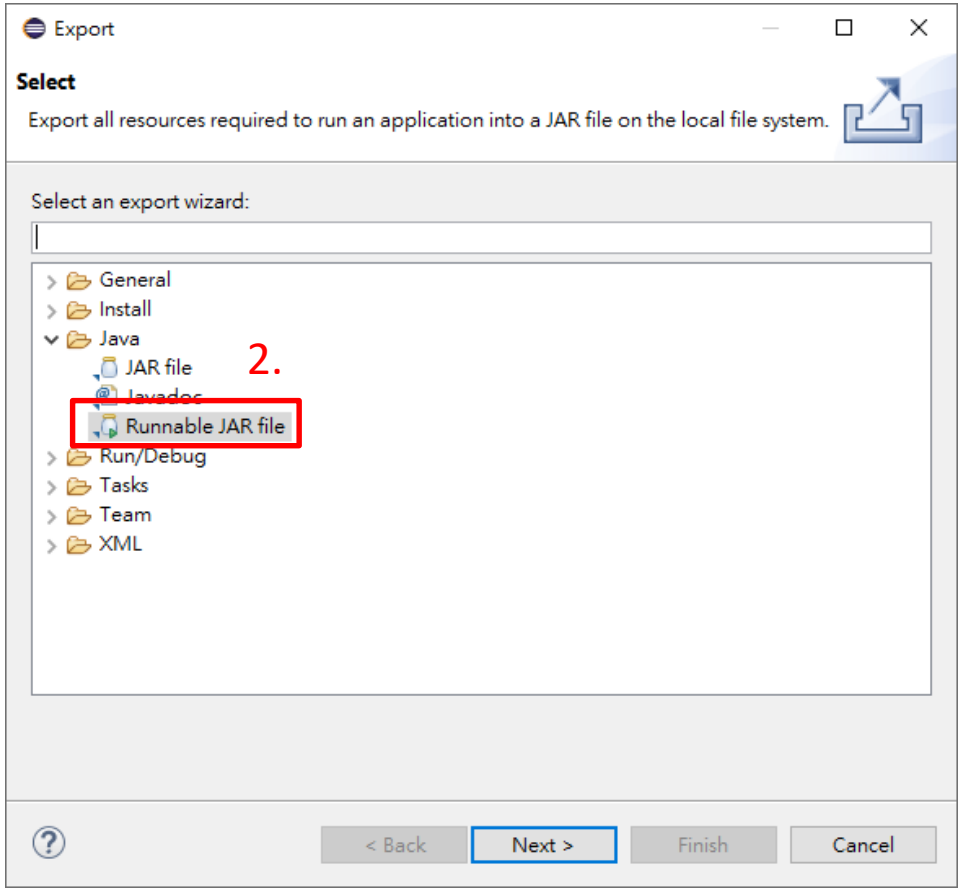


Setup Run Configurations - Client

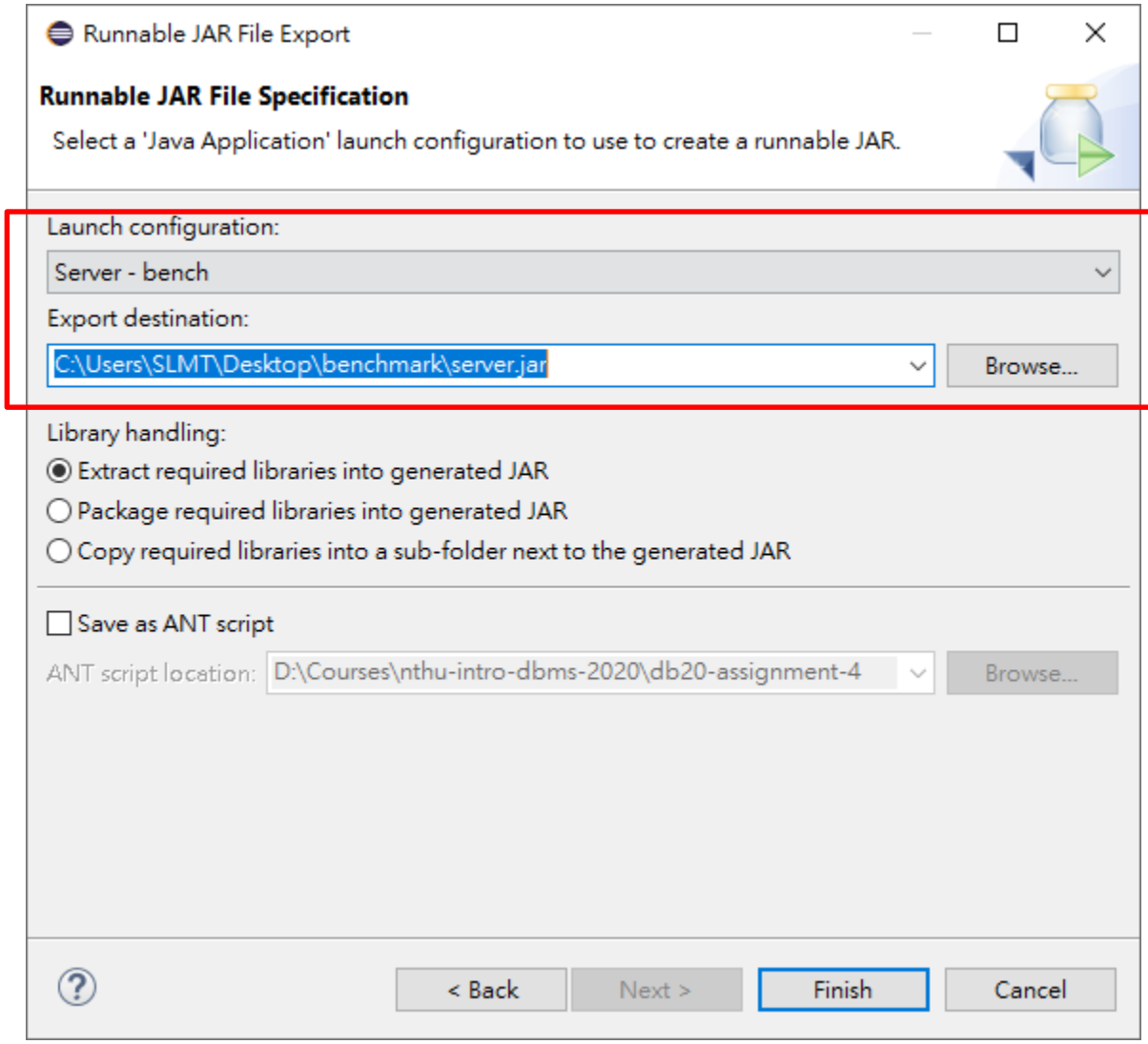


Export Runnable Jars

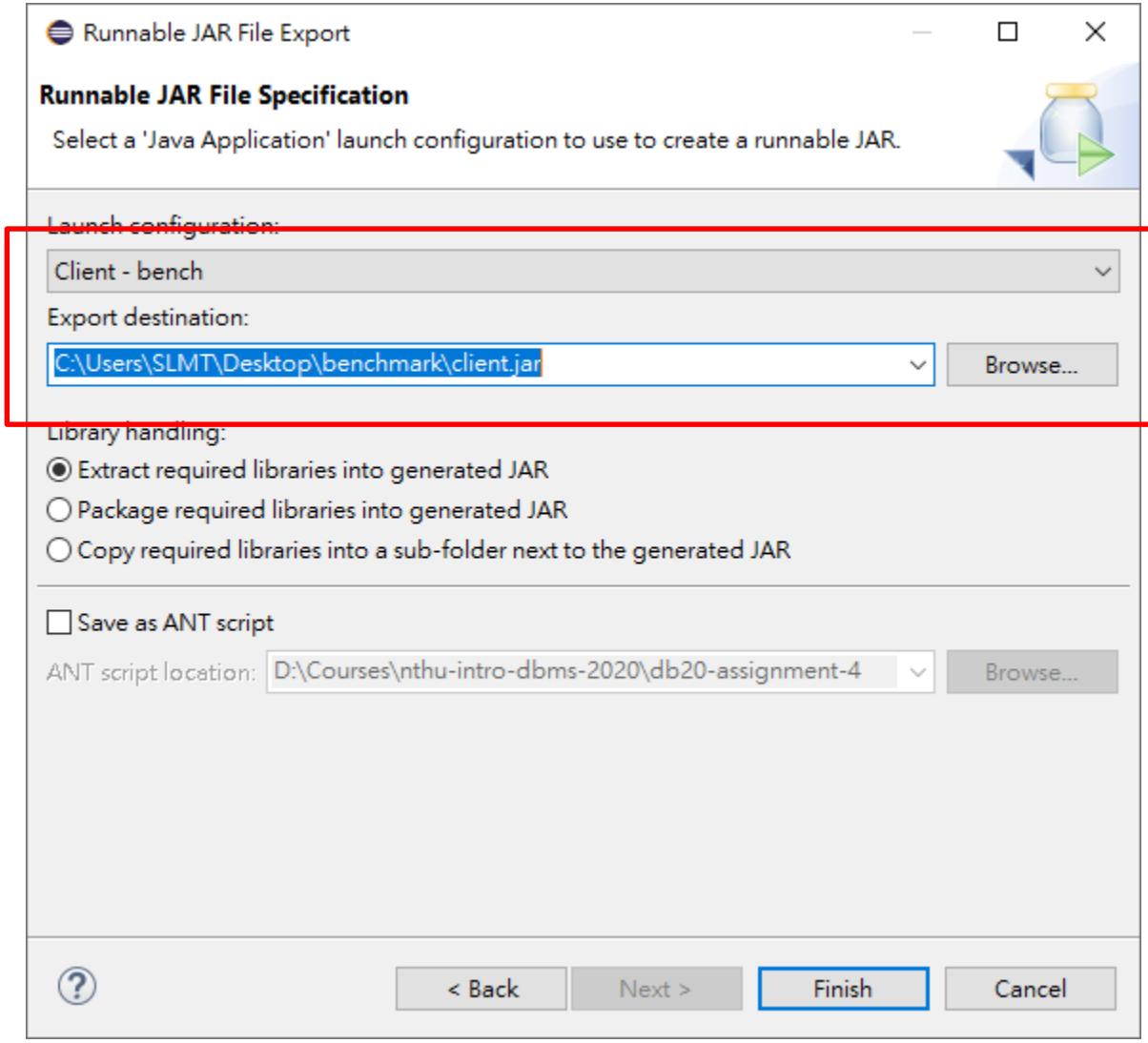




Export Runnable Jars - Server



Export Runnable Jars - Client



Setup Working Directory

- The next step is to setup you working directory.
- Contents
  - Server
    - server.jar
    - Properties
    - Scripts
  - Client
    - client.jar
    - Properties
    - Scripts

Scripts

- Now we are going to write scripts for running client and servers
- Scripts
  - Server
    - server.sh
    - copy-db.sh/reset-db.sh
  - Client
    - client-load.sh
    - client-bench.sh

Execution Scripts

- server.sh

```
java -Djava.util.logging.config.file=logging.properties -
Dorg.vanilladb.bench.config.file=vanillabench.properties -
Dorg.vanilladb.core.config.file=vanilladb.properties -jar server.jar [DB Name]
```

- client-load.sh

```
java -Djava.util.logging.config.file=logging.properties -
Dorg.vanilladb.bench.config.file=vanillabench.properties -
Dorg.vanilladb.core.config.file=vanilladb.properties -jar client.jar 1
```

- client-bench.sh

```
java -Djava.util.logging.config.file=logging.properties -
Dorg.vanilladb.bench.config.file=vanillabench.properties -
Dorg.vanilladb.core.config.file=vanilladb.properties -jar client.jar 2
```

Backup Databases

- To ensure the consistency of experiments, we usually backup the database and reset it before each experiment.
- copy-db.sh

```
DB_DIR=“[DB Path]"
cp -r $DB_DIR $DB_DIR-backup
```

- reset-db.sh

```
DB_DIR=“[DB Path]"
rm -r $DB_DIR
cp -r $DB_DIR-backup $DB_DIR
```

The Workflow of Benchmarking (1/2)

1. Load DB
    1. Setup properties
    2. Run server.sh
    3. Run client-load.sh
    4. Wait for loading
    5. Shut down the server (by stopping the script)
    6. Run copy-db.sh

The Workflow of Benchmarking (2/2)

2. Benchmark
    1. Setup properties
    2. Run reset-db.sh
    3. Run server.sh
    4. Run client-bench.sh
    5. Wait for benchmarking
    6. Shut down the server (by stopping the script)

That’s it! Enjoy your assignment!