

# ProjectDb Tutorial

## Requirements

- cmake version  $\geq 3.16.*$
- gcc version  $\geq 10.2.0$  (This is needed for proper c++20 support)

## Usage

To use ProjectDb, follow the following steps:

1. Clone the repo from ProjectDb into <root>
2. Run `make init_build && make projectdb`

This will build a `libprojectdb.a` static library, which needs to be linked against the application that uses ProjectDb.

3. Set the c++ standard with `-std=gnu++20`
4. Add <root>/include to the include path, and `#include <projectdb/projectdb.h>` in places where ProjectDb is used
5. Add `libprojectdb.a` to the linker path, and add `-lprojectdb -lpthread` in at the end of link line

An example is given as following:

## Example

The directory structure for this example is as following:

```
.
..
ProjectDbTest
  main.cpp -> This is the application that's trying to use ProjectDb
ProjectDb -> This is cloned ProjectDb repo
  cmake-build-release
    libprojectdb.a -> This is generated after running "make init_build && make projectdb"
```

main.cpp, which is the application, is as following:

```
// main.cpp

#include "projectdb/projectdb.h"

int main() {
    projectdb::ProjectDb db;
    db.set("Hello", "World!");
    return 0;
}
```

The command used to build main.cpp is as following:

```
g++ -std=gnu++20 -I../ProjectDb/include main.cpp -o main \
-L../ProjectDb/cmake-build-release/ -lprojectdb -lpthread
```

## Usage

There are three apis currently supported by ProjectDb:

1. `void set(const std::string& key, const std::string& value);`
2. `void remove(const std::string& key);`
3. `std::optional<std::string> get(const std::string& key);`

To use this api, first create a ProjectDb object, with an optional parameter of a config file. Then, use this object to call the above apis.

Note that with the current `ProjectDb` implementation, these apis are not thread safe. `ProjectDb` object needs to be locked by user if the apis are called in a multi-threaded fashion.

Also, the current implementation doesn't provide multi-process support. And it is important to note that **only one `ProjectDb` should be created for one `DB_FILE_PATH`**, otherwise, there's a risk of data corruption.