BAO Setup Notes

Docker command worked for me personally

```
docker run -p 127.0.0.1:5432:5432/tcp --add-host host.docker.inter
docker exec -it --user root <container_id> bash
```

Manual PSQL setup:

1. Install postgres@12: `brew install postgresql@12`
2. Add it to your PATH: `echo 'export PATH="/opt/homebrew/opt/postgresql@12/bin:$PATH"' >> ~/.bash_profile`
3. Restart terminal and check `postgres --version`
4. Create a role imdb (for modifying imdb database) $ `psql postgres` → `CREATE ROLE imdb;` **OR** `psql -U imdb`
   Role imdb being used to add the rows to the database.
5. Add the data to your database: `pg_restore -U saharshbarve -d imdb <../../imdb_pg11>`
6. Verify

```
(base) Saharshs-Laptop-4:project-bao saharshbarve$ psql -U saharshbarve -d imdb
psql (12.22)
Type "help" for help.

imdb=# select count(*) from title;
  count
---------
 2528312
(1 row)
```

7. Brew install gcc (check `gcc --verion` check `clang --version` find clang path `which clang`)
8. Install bao extension: `make CC=/usr/bin/clang USE_PGXS=1 install`

```
(base) Saharshs-Laptop-4:pg_extension saharshbarve$ make CC=/usr/bin/clang USE_PGXS=1 install
/usr/bin/clang -Wall -Wmissing-prototypes -Wpointer-arith -Wdeclaration-after-statement -Werror=vla -Wendif-labels -Wmissing-format-at
tribute -Wformat-security -fno-strict-aliasing -fwrapv -fexcess-precision=standard -Wno-unused-command-line-argument -Wno-compound-tok
en-split-by-macro -Wno-deprecated-non-prototype -O2 -I. -I./ -I/opt/homebrew/opt/postgresql@12/include/postgresql/server -I/opt/homeb
rew/opt/postgresql@12/include/postgresql/internal -I/opt/homebrew/Cellar/icu4c@76/76.1_1/include -isysroot /Library/Developer/CommandL
ineTools/SDKs/MacOSX15.sdk -I/opt/homebrew/opt/openssl@3/include -I/opt/homebrew/opt/readline/include   -c -o main.o main.c
/usr/bin/clang -Wall -Wmissing-prototypes -Wpointer-arith -Wdeclaration-after-statement -Werror=vla -Wendif-labels -Wmissing-format-at
tribute -Wformat-security -fno-strict-aliasing -fwrapv -fexcess-precision=standard -Wno-unused-command-line-argument -Wno-compound-tok
en-split-by-macro -Wno-deprecated-non-prototype -O2  -bundle -o pg_bao.so main.o  -L/opt/homebrew/opt/postgresql@12/lib  -isysroot /Li
brary/Developer/CommandLineTools/SDKs/MacOSX15.sdk -L/opt/homebrew/opt/openssl@3/lib -L/opt/homebrew/opt/readline/lib -L/usr/lib  -Wl,
-dead_strip_dylibs   -bundle_loader /opt/homebrew/Cellar/postgresql@12/12.22/bin/postgres
/bin/sh /opt/homebrew/opt/postgresql@12/lib/postgresql/pgxs/src/makefiles/../../config/install-sh -c -d '/opt/homebrew/opt/postgresql@
12/lib/postgresql'
/bin/sh /opt/homebrew/opt/postgresql@12/lib/postgresql/pgxs/src/makefiles/../../config/install-sh -c -d '/opt/homebrew/opt/postgresql@
12/share/postgresql@12/extension'
/bin/sh /opt/homebrew/opt/postgresql@12/lib/postgresql/pgxs/src/makefiles/../../config/install-sh -c -d '/opt/homebrew/opt/postgresql@
12/share/postgresql@12/extension'
/usr/bin/install -c -m 755  pg_bao.so '/opt/homebrew/opt/postgresql@12/lib/postgresql/pg_bao.so'
/usr/bin/install -c -m 644 .//pg_bao.control '/opt/homebrew/opt/postgresql@12/share/postgresql@12/extension/'
/usr/bin/install -c -m 644 .//pg_bao--0.0.1.sql  '/opt/homebrew/opt/postgresql@12/share/postgresql@12/extension/'
```

9. Postgresql update the conf file (uncomment and add
   shared_preload_libraries = 'pg_bao')

```
#------------------------------------------------------------------------------
# RESOURCE USAGE (except WAL)
#------------------------------------------------------------------------------

# - Memory -

shared_buffers = 4GB                      # min 128kB
                                          # (change requires restart)
#huge_pages = try                         # on, off, or try
                                          # (change requires restart)
#temp_buffers = 8MB                       # min 800kB
#max_prepared_transactions = 0            # zero disables the feature
                                          # (change requires restart)
# Caution: it is not advisable to set max_prepared_transactions nonzero unless
# you actively intend to use prepared transactions.
#work_mem = 4MB                           # min 64kB
#maintenance_work_mem = 64MB              # min 1MB
#autovacuum_work_mem = -1                 # min 1MB, or -1 to use maintenance_work_mem
#max_stack_depth = 2MB                    # min 100kB
#shared_memory_type = mmap                # the default is the first option
                                          # supported by the operating system:
                                          #   mmap
                                          #   sysv
                                          #   windows
                                          # (change requires restart)
dynamic_shared_memory_type = posix        # the default is the first option
                                          # supported by the operating system:
                                          #   posix
                                          #   sysv
                                          #   windows
                                          #   mmap
                                          # (change requires restart)

# - Disk -

#temp_file_limit = -1                     # limits per-process temp file space
                                          # in kB, or -1 for no limit

# - Kernel Resources -

#max_files_per_process = 1000             # min 25
                                          # (change requires restart)
#shared_preload_libraries = 'pg_bao'      # (change requires restart)
```

10. Restart postgresSQL: brew services stop/start/restart
    postgresql@12
11. Verify:SHOW shared_preload_libraries;
12. Verify: imdb=# SHOW enable_bao;

```
(base) Saharshs-Laptop-4:pg_extension saharshbarve$ psql postgres -U saharshbarve -d imdb
psql: warning: extra command-line argument "postgres" ignored
psql (12.22)
Type "help" for help.

imdb=# SHOW shared_preload_libraries;
 shared_preload_libraries
--------------------------------
 pg_bao
(1 row)

imdb=# SHOW enable_bao;
 enable_bao
-------------
 off
(1 row)
```

13.