GCC Installation Guide

The installation procedures for GCC (GNU Compiler Collection) are different for Linux and macOS.

First check the GCC version on your operating system.

```
$ gcc --version
```

parKVFinder supports GCC versions later than 6. Otherwise, you must install a newer GCC version.

Linux

To install the standard available version of GCC on your operating system, type:

```
$ sudo apt install gcc
```

Note: check the GCC version again to make sure you have installed a version later than 6.

If the default version GCC is not later than 6, you can install directly any later version by typing:

```
# GCC version 6
$ sudo apt install gcc-6
# GCC version 7
$ sudo apt install gcc-7
# GCC version 8
$ sudo apt install gcc-8
# GCC version 9
$ sudo apt install gcc-9
```

Then, there are two possible paths to prepare GCC to compile the parKVFinder source code.

- Create a symbolic link to your custom GCC

```
$ sudo ln -s /usr/bin/gcc-X /usr/local/bin/gcc
```

Note: **X** is the version of GCC you have installed.

- Replace `gcc` to `gcc-X` in **Makefile** within the **parKVFinder** directory

macOS

The macOS native C compiler is **Clang LLVM compiler**, which is not supported by parKVFinder.

First, you need to install:

- *Homebrew* package manager;
- Command Line Tools (CLT) for *Xcode* (`xcode-select --install`) or *Xcode*.

To install the standard available version of GCC on your *Homebrew* package manager, type:

```
$ brew install gcc
```

Note: check the GCC version, using `brew info gcc`, to make sure you have installed a version later than 6. Also, *Homebrew* installation will not override **Clang LLVM compiler** link.

If the default version GCC is not later than 6, you can install directly any version by typing:

```
# GCC version 6
$ brew install gcc@6
# GCC version 7
$ brew install gcc@7
# GCC version 8
$ brew install gcc@8
```

```
# GCC version 9
$ brew install gcc@9
```

Then, there are two possible paths to prepare GCC to compile the parKVFinder source code.

- Create a symbolic link to your custom GCC

```
$ sudo ln -s $(brew --prefix)/bin/gcc-X /usr/local/bin/gcc
```

Note: **X** is the version of GCC you have installed.

- Replace `gcc` to `gcc-X` in **Makefile** within the **parKVFinder** directory

```
$ sed -i -e 's/gcc/gcc-X/' Makefile
```

Note: **X** is the version of GCC you have installed.