

Instructions to build the code.

2 different app are included:

1st: assign_1 -> using only STL

2nd: MITAS -> using open source

Library Armadillo -> C++ library for linear algebra & scientific computing

To build 2nd that is with Armadillo

`sudo apt-get install liblapack-dev`

`sudo apt-get install libblas-dev`

`sudo apt-get install libboost-dev`

`sudo apt-get install libarmadillo-dev`

The other steps to build and run are the same.

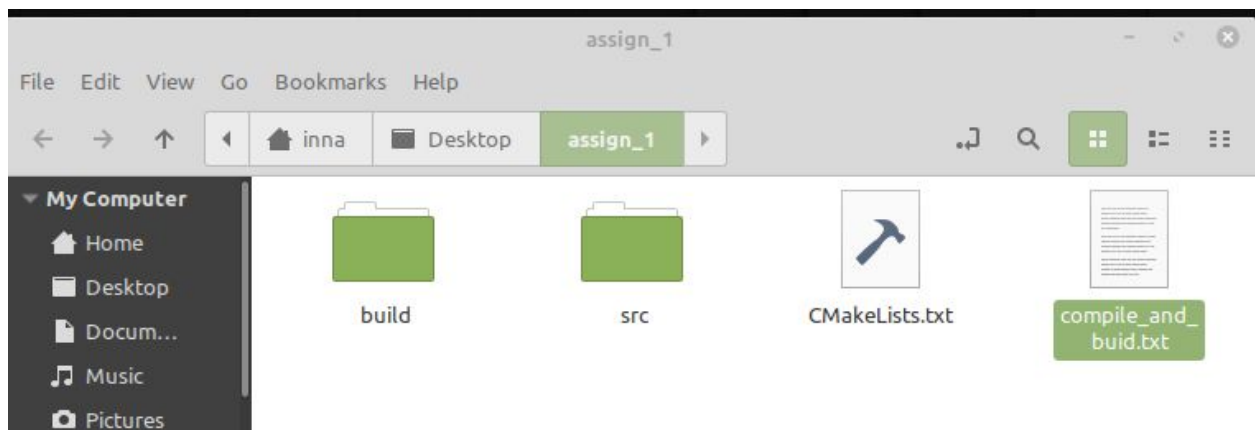
Cmake has to be installed.

All bin files, filter files must be in build directory;

All bin files and .txt filter files permissions has to be set with

`Sudo chmod 777 frames.1.8.6.bin`

`Sudo chmod 777 filter.3x3.txt`



```
cd /home/inna/Desktop/
```

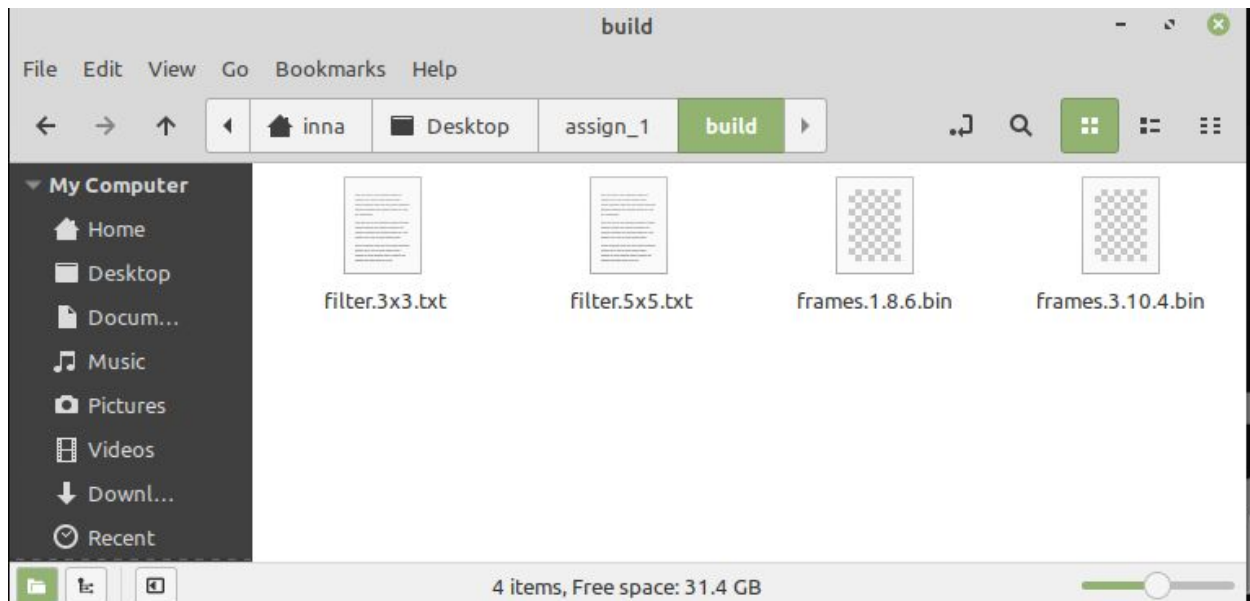
#build directory already created

#but if not created then

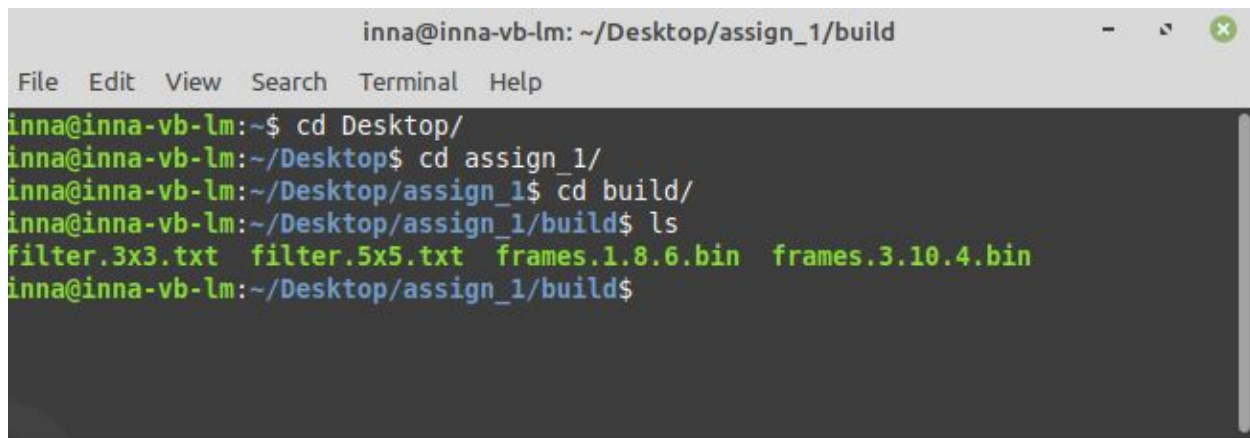
mkdir build

copy filter.3x3.txt filter.5x5.txt frames.1.8.6.bin frames.3.10.4.bin into build directory

or any other .bin and .txt filter files into build directory



cd build



cmake ..

```
inna@inna-vb-lm: ~/Desktop/assign_1/build
File Edit View Search Terminal Help
inna@inna-vb-lm:~$ cd Desktop/
inna@inna-vb-lm:~/Desktop$ cd assign_1/
inna@inna-vb-lm:~/Desktop/assign_1$ cd build/
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
filter.3x3.txt  filter.5x5.txt  frames.1.8.6.bin  frames.3.10.4.bin
inna@inna-vb-lm:~/Desktop/assign_1/build$ cmake ..
- The C compiler identification is GNU 5.5.0
- The CXX compiler identification is GNU 5.5.0
- Check for working C compiler: /usr/bin/cc
- Check for working C compiler: /usr/bin/cc -- works
- Detecting C compiler ABI info
- Detecting C compiler ABI info - done
- Detecting C compile features
- Detecting C compile features - done
- Check for working CXX compiler: /usr/bin/c++
- Check for working CXX compiler: /usr/bin/c++ -- works
- Detecting CXX compiler ABI info
- Detecting CXX compiler ABI info - done
- Detecting CXX compile features
- Detecting CXX compile features - done
- Configuring done
- Generating done
- Build files have been written to: /home/inna/Desktop/assign_1/build
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
CMakeCache.txt  cmake_install.cmake  filter.5x5.txt  frames.3.10.4.bin
CMakeFiles      filter.3x3.txt        frames.1.8.6.bin  Makefile
inna@inna-vb-lm:~/Desktop/assign_1/build$
```

Make

```

-- Configuring done
-- Generating done
-- Build files have been written to: /home/inna/Desktop/assign_1/build
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
CMakeCache.txt  cmake_install.cmake  filter.5x5.txt  frames.3.10.4.bin
CMakeFiles      filter.3x3.txt        frames.1.8.6.bin  Makefile
inna@inna-vb-lm:~/Desktop/assign_1/build$ make
Scanning dependencies of target Assignment
[ 33%] Building CXX object CMakeFiles/Assignment.dir/src/assignment.o
cc1plus: warning: /home/inna/Desktop/assign_1/src/MedianFilter/MedianFilter.h: n
ot a directory
[ 66%] Building CXX object CMakeFiles/Assignment.dir/src/MedianFilter/MedianFilt
er.o
cc1plus: warning: /home/inna/Desktop/assign_1/src/MedianFilter/MedianFilter.h: n
ot a directory
[100%] Linking CXX executable Assignment
[100%] Built target Assignment
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
Assignment      cmake_install.cmake  frames.1.8.6.bin
CMakeCache.txt  filter.3x3.txt        frames.3.10.4.bin
CMakeFiles      filter.5x5.txt        Makefile
inna@inna-vb-lm:~/Desktop/assign_1/build$

```

to run with arguments pass first arg .bin name , second arg .txt filter_file name

./Assignment frames.1.8.6.bin filter.3x3.txt >> output1.txt

```

inna@inna-vb-lm:~/Desktop/assign_1/build$ ./Assignment frames.1.8.6.bin filter.3x3.txt >> output1.txt
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
Assignment  CMakeCache.txt  CMakeFiles  cmake_install.cmake  filter.3x3.txt  filter.5x5.txt  frames.1.8.6.bin  frames.3.10.4.bin  Makefile  output1.txt

```



```
#####
Start new run
#####
Filter =
  1    1    1
  1    0    1
  1    1    1
#####
Start filename frames.1.8.6.bin filter = filter.3x3.txt Number Of Frames = 1
#####
Start Frame Number = 1 rows = 8 cols = 6
Original matrix =
  6.43718    31.834    12.0816    34.8077    12.8866    5.68043
  46.2166    53.7282     4.03    43.8906    29.8743    39.3467
  43.1096    15.4415    30.4343    62.3057    40.3282    25.4728
  1.55754   -0.457859    8.05713    22.7253    15.7618    45.5973
  44.1845    30.9294    57.5289    6.82437    41.2589    42.0397
  27.3191   -15.1377    39.4281    25.1906    0.993486    39.1694
  49.0673    18.9838     8.27166    1.87152   -16.5741    16.5969
  45.2388   -15.0957   -0.687649    20.659    36.5275    38.4037
Resulting matrix =
  46.2166    12.0816    34.8077    12.8866    34.8077    29.8743
   31.834    22.9379    33.3209    30.1543    37.0772    25.4728
  15.4415    19.2457    19.0834    26.2998    34.6105    39.3467
  30.9294    30.6819    26.5798    35.3812    40.7935    40.3282
  1.55754    17.6881    15.3912     23.958     23.958    39.1694
  30.9294    35.1787    13.6277     7.54802    20.8937    16.5969
  18.9838    17.7954    10.4277    14.4653    22.9248    36.5275
  18.9838    18.9838     8.27166    1.87152    16.5969    16.5969
End Frame Number = 1
End filename frames.1.8.6.bin filter = filter.3x3.txt Number Of Frames = 1
#####
End run
#####
inna@inna-vb-lm: ~/Desktop/assign_1/build$
```

./Assignment frames.1.8.6.bin filter.5x5.txt >> output2.txt

```
inna@inna-vb-lm:~/Desktop/assign_1/build$ ./Assignment frames.1.8.6.bin filter.5x5.txt >> output2.txt
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
Assignment  CMakeCache.txt  CMakeFiles  cmake install.cmake  filter.3x3.txt  filter.5x5.txt  frames.1.8.6.bin  frames.3.10.4.bin  Makefile  output1.txt  output2.txt
```

```
#####
Start new run
#####
Filter =
  0    0    1    0    0
  0    0    1    0    0
  1    1    1    1    1
  0    0    1    0    0
  0    0    1    0    0
#####
Start filename frames.1.8.6.bin filter = filter.5x5.txt Number Of Frames = 1
#####
Start Frame Number = 1 rows = 8 cols = 6
Original matrix =
  6.43718    31.834    12.0816    34.8077    12.8866    5.68043
  46.2166    53.7282     4.03    43.8906    29.8743    39.3467
  43.1096    15.4415    30.4343    62.3057    40.3282    25.4728
  1.55754   -0.457859    8.05713    22.7253    15.7618    45.5973
  44.1845    30.9294    57.5289    6.82437    41.2589    42.0397
  27.3191   -15.1377    39.4281    25.1906    0.993486    39.1694
  49.0673    18.9838     8.27166    1.87152   -16.5741    16.5969
  45.2388   -15.0957   -0.687649    20.659    36.5275    38.4037
Resulting matrix =
  31.834    23.6378    12.8866    31.834    21.3804    25.4728
  24.7734    31.834    30.1543    37.0772    29.8743    34.6105
  30.4343    31.3817    30.4343    30.4343    30.1543    40.3282
  27.3191    11.7493    15.7618    22.7253    26.2998    39.1694
  43.1096    17.2127    30.9294    30.9294    28.045    39.1694
  39.4281    22.0872     8.27166    20.659    30.859    38.4037
  35.7518     8.27166    13.6277    12.4343     8.27166    27.5003
  27.3191     9.14808     20.659     20.659    10.8262    36.5275
End Frame Number = 1
End filename frames.1.8.6.bin filter = filter.5x5.txt Number Of Frames = 1
#####
End run
#####
inna@inna-vb-lm: ~/Desktop/assign_1/build$
```

./Assignment frames.3.10.4.bin filter.3x3.txt >> output3.txt

```
inna@inna-vb-lm:~/Desktop/assign_1/build$ ./Assignment frames.3.10.4.bin filter.3x3.txt >> output3.txt
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
Assignment  CMakeCache.txt  CMakeFiles  cmake_install.cmake  filter.3x3.txt  filter.5x5.txt  frames.1.8.6.bin  frames.3.10.4.bin  Makefile  output1.txt  output2.txt  output3.txt
inna@inna-vb-lm:~/Desktop/assign_1/build$
```

```

inna@inna-vb-lm:~/Desktop/assign_1/build$ cat output3.txt
#####
Start new run
#####
Filter =
  1    1    1
  1    0    1
  1    1    1
#####
Start filename frames.3.10.4.bin filter = filter.3x3.txt Number Of Frames = 3
#####
Start Frame Number = 1 rows = 10 cols = 6
Original matrix =
  6.43718  15.4415  57.5289  1.87152  5.68043  28.5401
  46.2166 -0.457859 39.4281  20.659  39.3467  32.37
  43.1096  30.9294  8.27166  12.8866  25.4728  49.2226
  1.55754 -15.1377 -0.687649 29.8743  45.5973 -16.3443
  44.1845  18.9838  34.8077  40.3282  42.0397  45.3245
  27.3191 -15.0957  43.8906  15.7618  39.1694  17.8501
  49.0673  12.0816  62.3057  41.2589  16.5969  15.3666
  45.2388    4.03  22.7253  0.993486  38.4037  33.1189
   31.834  30.4343  6.82437 -16.5741 -10.6578  26.9004
  53.7282  8.05713  25.1906  36.5275  32.7139  18.9852
Resulting matrix =
  15.4415  39.4281  15.4415  39.3467  28.5401  32.37
  15.4415  35.1787  14.1641  19.1797  23.0659  28.5401
  1.55754   4.9146  16.7728  27.6735  31.1221  32.37
  30.9294  24.9566  24.429  30.1403  35.1012  45.3245
  1.55754  14.4383  17.3728  36.9886  34.5218  39.1694
  18.9838  39.3491  26.8958  40.7935  29.0892  39.1694
  12.0816  35.6048  13.9217  30.5645  25.4845  33.1189
  30.4343  31.1342  9.45298  19.6611  15.9817  16.5969
  30.4343  23.958  15.3912  23.958  29.8071  32.7139
  30.4343  30.4343  8.05713  6.82437  18.9852  26.9004
End Frame Number = 1

```



```

Start Frame Number = 2 rows = 10 cols = 6
Original matrix =
-4.01781    16.7501    87.01    6.6147    32.8754    4.24161
30.6314    13.1065    48.2491    24.6553    -19.2969    33.4173
9.34997    40.9177    21.4976    -3.01735    -39.1332    6.72336
-6.89683    55.8906    21.5216    10.9241    17.8328    23.9015
15.854    -7.18571    60.7819    41.2114    48.8675    5.82774
19.4239    43.1933    51.5497    35.5979    26.4614    28.168
11.6336    -0.329277    -2.40775    10.5601    12.904    26.6419
46.4875    11.8285    41.4835    38.108    24.9022    23.2055
24.5081    49.751    29.8934    19.0398    6.27314    41.803
-8.28388    6.12094    14.8593    3.74925    16.2973    44.3179
Resulting matrix =
16.7501    30.6314    16.7501    32.8754    6.6147    32.8754
13.1065    26.0645    19.1238    14.0562    6.66903    4.24161
30.6314    21.5096    23.0884    19.6652    14.3784    17.8328
15.854    18.6758    31.2076    21.5096    8.82372    6.72336
19.4239    32.3574    38.4046    31.0297    25.1815    26.4614
11.6336    13.7438    23.079    33.8364    27.4049    26.4614
19.4239    30.4537    36.853    31.0297    26.5516    24.9022
11.8285    27.2008    15.4341    15.9719    21.1226    24.9022
11.8285    19.6837    16.9495    20.5998    24.0539    23.2055
24.5081    24.5081    19.0398    16.2973    19.0398    16.2973
End Frame Number = 2

```

```

Start Frame Number = 3 rows = 10 cols = 6
Original matrix =
6.11811    40.4751    18.1685    31.1191    24.671    -18.3654
26.0474    -0.0057106    29.1239    35.2159    -5.87992    32.5812
50.9464    -11.4946    32.6183    30.9306    6.1895    16.1144
24.9665    17.4935    35.2411    16.3918    29.044    -33.7941
44.7675    -22.5358    20.6183    41.8702    -4.19574    9.79848
11.9454    54.9582    17.0898    8.90337    25.1266    34.3933
43.5175    46.6885    7.05322    -15.9854    -2.04779    19.6817
37.4364    3.64552    10.7827    30.8052    34.213    58.6343
19.5183    -3.02544    64.2589    4.59289    -30.6245    -37.9973
12.7891    39.513    17.268    22.0195    24.2917    25.7093
Resulting matrix =
26.0474    18.1685    31.1191    24.671    31.1191    24.671
6.11811    27.5856    31.0249    26.8974    27.8008    6.1895
17.4935    27.5856    23.3087    29.0839    22.7179    6.1895
17.4935    28.7924    19.0559    29.9873    12.9564    9.79848
17.4935    22.7924    17.2917    18.8541    20.7592    25.1266
44.7675    18.8541    14.7608    12.0715    9.35092    9.79848
37.4364    14.5176    13.9363    13.9363    27.9659    34.213
19.5183    28.4773    5.82306    5.82306    1.27255    -2.04779
12.7891    18.3931    14.0253    23.1556    25.0005    25.7093
19.5183    17.268    22.0195    17.268    4.59289    -30.6245
End Frame Number = 3
End filename frames.3.10.4.bin filter = filter.3x3.txt Number Of Frames = 3
#####
End run
#####

```


./Assignment frames.3.10.4.bin filter.5x5.txt >> output4.txt

```
inna@inna-vb-lm:~/Desktop/assign_1/build$ ./Assignment frames.3.10.4.bin filter.5x5.txt >> output4.txt
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
Assignment  CMakeCache.txt  CMakeFiles  cmake_install.cmake  filter.3x3.txt  filter.5x5.txt  frames.1.8.6.bin  frames.3.10.4.bin  Makefile  output1.txt  output2.txt  output3.txt  output4.txt
#####
Start new run
#####
Filter =
  0    0    1    0    0
  0    0    1    0    0
  1    1    1    1    1
  0    0    1    0    0
  0    0    1    0    0
#####
Start filename frames.3.10.4.bin filter = filter.5x5.txt Number Of Frames = 3
#####
Start Frame Number = 1 rows = 10 cols = 6
Original matrix =
  6.43718    15.4415    57.5289    1.87152    5.68043    28.5401
  46.2166   -0.457859    39.4281    20.659    39.3467    32.37
  43.1096    30.9294    8.27166    12.8866    25.4728    49.2226
  1.55754   -15.1377   -0.687649    29.8743    45.5973   -16.3443
  44.1845    18.9838    34.8077    40.3282    42.0397    45.3245
  27.3191   -15.0957    43.8906    15.7618    39.1694    17.8501
  49.0673    12.0816    62.3057    41.2589    16.5969    15.3666
  45.2388     4.03    22.7253    0.993486    38.4037    33.1189
  31.834    30.4343    6.82437   -16.5741   -10.6578    26.9004
  53.7282    8.05713    25.1906    36.5275    32.7139    18.9852
Resulting matrix =
  43.1096    10.9393    8.27166    15.4415    27.0065    28.5401
  22.9326    20.659    30.0028    25.2666     32.37    30.4551
  30.9294    14.1641    30.9294    25.4728    32.4097    28.5401
  27.3191    0.549841    29.8743    15.7618    34.5218     32.37
  34.8077    24.9566    40.3282    34.8077    39.7488    40.3282
  43.8906    13.9217    27.3191    29.8743    38.7865    17.8501
  44.1845     24.709    34.8077    15.7618    38.7865    26.9004
  31.834     10.0694    25.1906    22.7253    27.7196    18.9852
  38.5364     8.05713     23.958    16.8624    16.5969    17.1759
  31.834     27.8125    25.1906    18.9852    28.9522    32.7139
End Frame Number = 1
```

Start Frame Number = 2 rows = 10 cols = 6

Original matrix =

-4.01781	16.7501	87.01	6.6147	32.8754	4.24161
30.6314	13.1065	48.2491	24.6553	-19.2969	33.4173
9.34997	40.9177	21.4976	-3.01735	-39.1332	6.72336
-6.89683	55.8906	21.5216	10.9241	17.8328	23.9015
15.854	-7.18571	60.7819	41.2114	48.8675	5.82774
19.4239	43.1933	51.5497	35.5979	26.4614	28.168
11.6336	-0.329277	-2.40775	10.5601	12.904	26.6419
46.4875	11.8285	41.4835	38.108	24.9022	23.2055
24.5081	49.751	29.8934	19.0398	6.27314	41.803
-8.28388	6.12094	14.8593	3.74925	16.2973	44.3179

Resulting matrix =

16.7501	14.9283	21.4976	16.7501	5.42815	6.72336
11.2282	30.6314	23.0884	12.0153	24.6553	15.3124
15.854	14.9283	21.5216	10.9241	12.2781	5.82774
19.4239	17.314	21.5216	23.9015	19.6772	17.8328
11.6336	41.0645	21.5216	10.9241	22.1471	26.6419
19.4239	27.5109	35.5979	35.5979	27.3147	26.4614
15.854	11.0968	12.904	19.0398	18.9031	23.2055
19.4239	39.7958	29.8934	23.2055	24.0539	28.168
27.2008	19.0398	21.7739	24.4666	19.0398	24.9237
14.8593	8.9747	14.8593	16.2973	15.5783	23.2055

End Frame Number = 2

Start Frame Number = 3 rows = 10 cols = 6

Original matrix =

6.11811	40.4751	18.1685	31.1191	24.671	-18.3654
26.0474	-0.0057106	29.1239	35.2159	-5.87992	32.5812
50.9464	-11.4946	32.6183	30.9306	6.1895	16.1144
24.9665	17.4935	35.2411	16.3918	29.044	-33.7941
44.7675	-22.5358	20.6183	41.8702	-4.19574	9.79848
11.9454	54.9582	17.0898	8.90337	25.1266	34.3933
43.5175	46.6885	7.05322	-15.9854	-2.04779	19.6817
37.4364	3.64552	10.7827	30.8052	34.213	58.6343
19.5183	-3.02544	64.2589	4.59289	-30.6245	-37.9973
12.7891	39.513	17.268	22.0195	24.2917	25.7093

Resulting matrix =

26.0474	12.1433	29.1239	30.9306	12.179	24.671
25.507	26.0474	27.5856	30.0272	29.044	5.11723
26.0474	24.212	29.1239	30.9306	20.3927	9.79848
26.0474	16.9427	24.9665	29.044	11.2907	16.3918
24.9665	31.2442	20.6183	9.79848	15.2084	16.1144
37.4364	14.5176	17.0898	25.1266	21.1082	19.6817
37.4364	5.34937	17.0898	8.90337	2.50272	9.79848
12.7891	34.1208	17.268	10.7827	24.7091	30.8052
28.4773	19.5183	8.91796	0.783725	4.59289	12.1373
19.5183	15.0285	22.0195	24.2917	23.1556	24.2917

End Frame Number = 3

End filename frames.3.10.4.bin filter = filter.5x5.txt Number Of Frames = 3

#####

End run

#####

to run with no arguments program will use default 4 sets of .bin .txt
frames.1.8.6.bin filter.3x3.txt ; frames.1.8.6.bin filter.3x3.txt
frames.3.10.4.bin filter.5x5.txt ; frames.3.10.4.bin filter.5x5.txt
./Assignment >> output.txt

```
inna@inna-vb-lm:~/Desktop/assign_1/build$ ./Assignment >> output
inna@inna-vb-lm:~/Desktop/assign_1/build$ ls
Assignment CMakeCache.txt CMakeFiles cmake_install.cmake filter.3x3.txt filter.5x5.txt frames.1.8.6.bin frames.3.10.4.bin Makefile output output1.txt output2.txt output3.txt output4.txt
```

It will run all above with default values and results in file created as output.txt

Files output1.txt, output2.txt, output3.txt, output4.txt, output.txt
Included in separate directory to view

#####

To set for debug uncomment
#set(CMAKE_BUILD_TYPE Debug)
Line in Cmakelists.txt
Open with QT Creator,

+ New Project

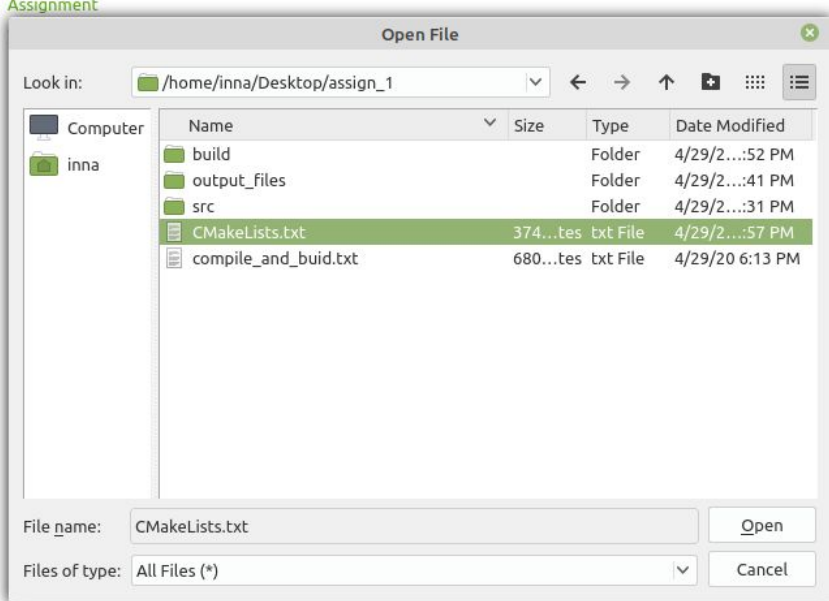
Open Project

Sessions

Recent Projects

1 default (last session)

1 Assignment



set compiler, set build directory, set working directory
Set command line arguments



Configure Project

The following kits can be used for project **assign_1**:

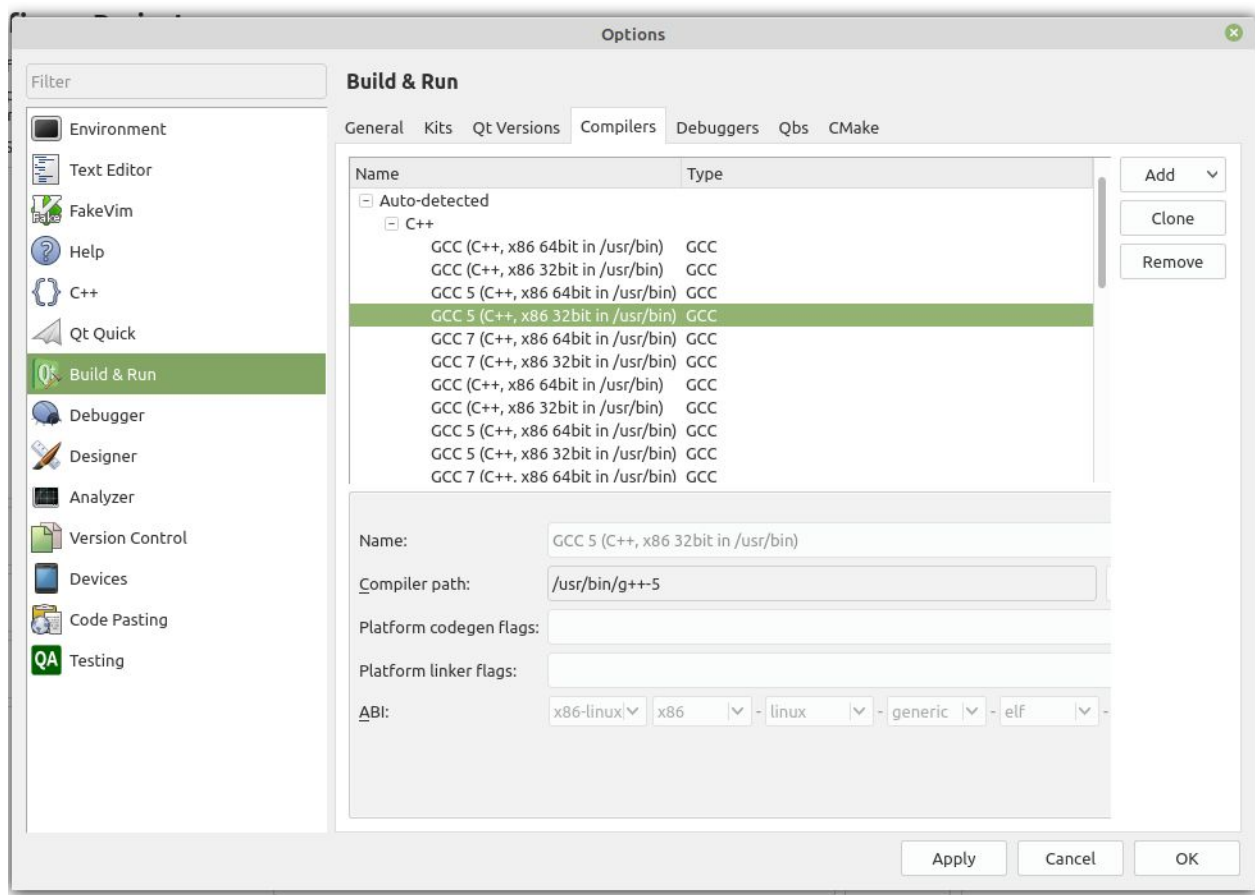
The project **assign_1** is not yet configured.

Qt Creator uses the kit **Desktop** to parse the project.

☐ Select all kits

<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div></div>	Desktop		Details ^
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div></div>	Default	<div>/home/inna/Desktop/assign_1/build</div>	<div>Browse...</div>
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div></div>	Debug	<div>/home/inna/Desktop/build-assign_1-Desktop-Debug</div>	<div>Browse...</div>
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div></div>	Release	<div>/home/inna/Desktop/build-assign_1-Desktop-Release</div>	<div>Browse...</div>
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div></div>	Release with Debug Information	<div>/home/inna/Desktop/build-assign_1-Desktop-Release with Debug Information</div>	<div>Browse...</div>
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div></div>	Minimum Size Release	<div>/home/inna/Desktop/build-assign_1-Desktop-Minimum Size Release</div>	<div>Browse...</div>
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div></div>	Build	<div>/home/inna/Desktop/build-assign_1-Desktop-Default</div>	<div>Browse...</div>

Click configure



Build & Run

Desktop

Build

Run

Imported Kit

Imported Kit

Imported Kit

Imported Kit

Build

Run

Project Settings

Editor

Code Style

Dependencies

Clang Static Analyzer

CMAKE

CMAKE_BACKWARDS_COMPATIBILITY

CMAKE_BUILD_TYPE

CMAKE_INSTALL_PREFIX

EXECUTABLE_OUTPUT_PATH

LIBRARY_OUTPUT_PATH

Build Steps

Build: cmake --build . --target all

Add Build Step

Set Run configuration and Arguments

Build & Run

Desktop

Build

Run

Imported Kit

Imported Kit

Imported Kit

Imported Kit

Build

Run

Run

Run configuration: Assignment Add Remove

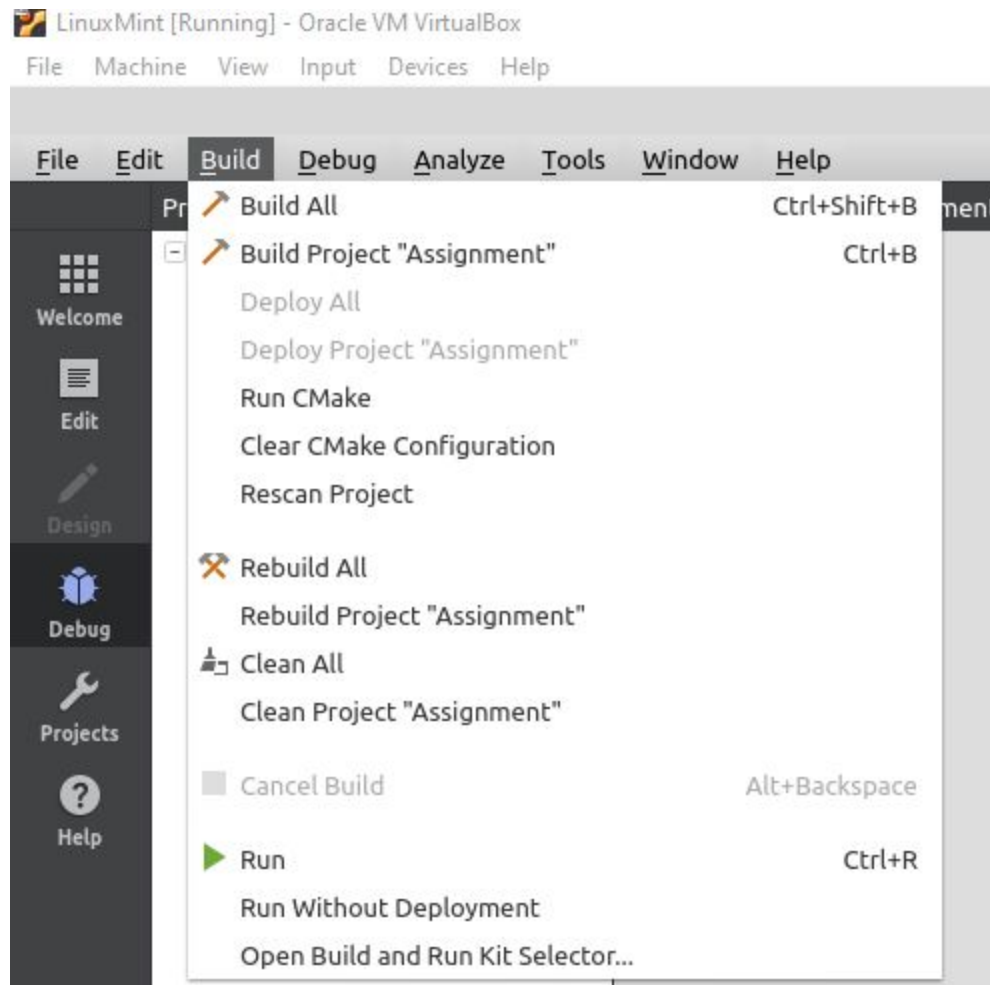
Executable: Assignment

Command line arguments: frames.1.8.6.bin filter.3x3.txt

Working directory: /home/inna/Desktop/assign_1/build

☐ Run in terminal

From Menu Build



Run CMake

The screenshot displays the Qt Creator IDE interface. The top menu bar includes File, Edit, Build, Debug, Analyze, Tools, Window, and Help. The left sidebar contains icons for Welcome, Edit, Design, Debug, Projects, and Help. The main editor area shows a project named "Assignment" with a CMakeLists.txt file and a src directory. The bottom status bar displays the current project and file.

Projects

- Assignment
 - CMakeLists.txt
 - Assignment
 - src
 - <Headers>

Debugger

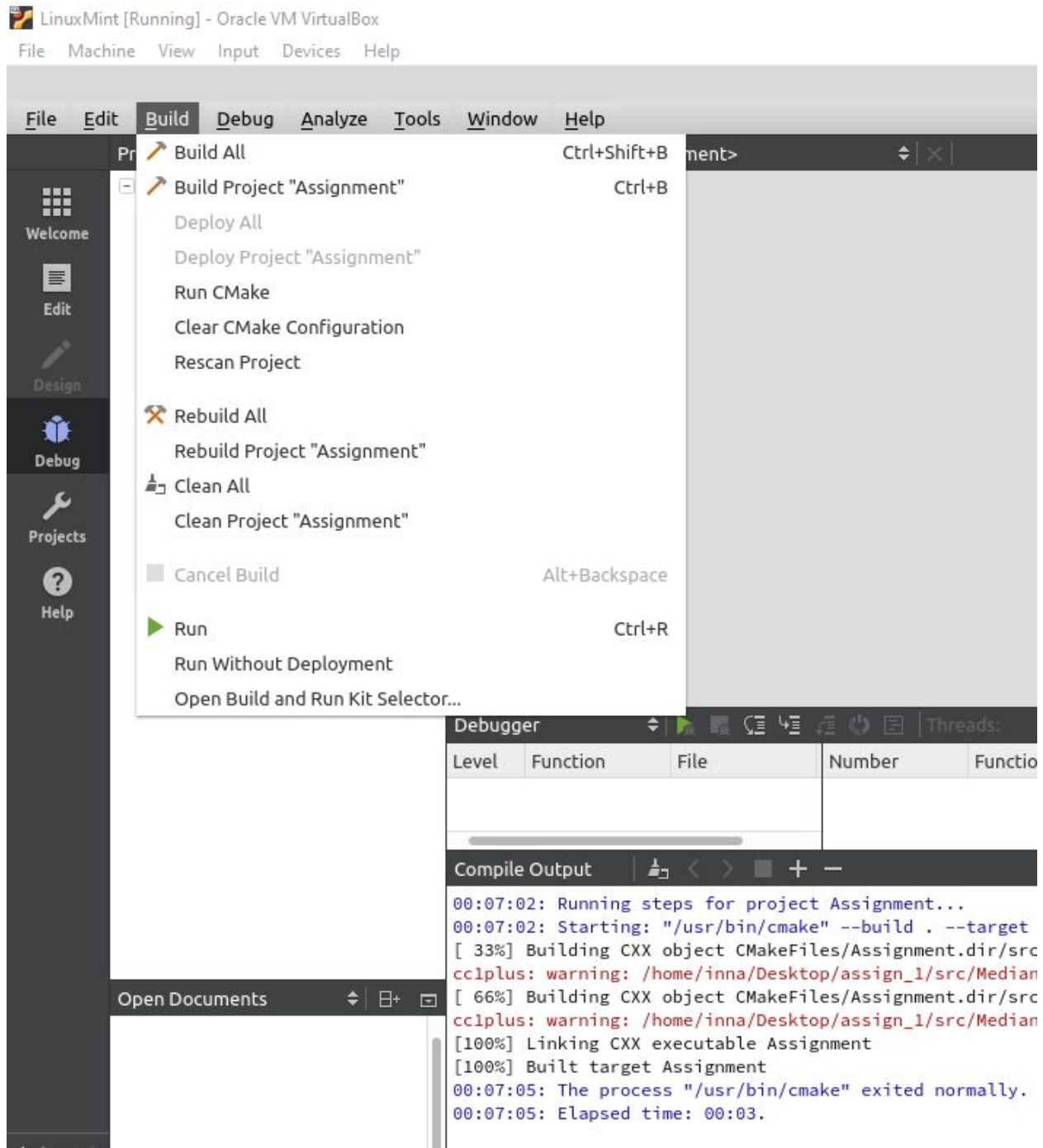
Level	Function	File	Nu

General Messages

Running "/usr/bin/cmake -E server --pipe=/tmp/
Starting to parse CMake project.
Configuring done
Generating done
CMake Project was parsed successfully.
Starting to parse CMake project.
Configuring done
Generating done
CMake Project was parsed successfully.

Open Documents

From Menu Build -> Build All



Set breakpoint
From Debug -> Start Debugging

