

## Solutions for C-Build-Tools

### C-Build-Tools

1.

```
gcc preproc-test.c
```

2.

```
gcc -E preproc-test.c
```

3.

```
gcc -E preproc-test.c -o preproc-test.E
```

4.

```
gcc -E preproc-test.c -o preproc-test.E
```

It has changed. `INT_MAX` is replaced by a big number. This is done by the preprocessor - it substitutes all occurrences of `INT_MAX` with the biggest value of an int on the platform we're compiling on (or rather for).

On the author's computer the main function looks like this:

```
int main() {  
  
    int nr_students=10;  
  
    printf("Nr of students: %d\n",  
          nr_students);  
  
    printf("max in value: %d\n",  
          0x7fffffff);  
  
}
```

5.

```
gcc preproc-test.c -o preproc-test
```

6.

```
gcc -E preproc-test.c -o preproc-test.E
```

It has changed. `nr_students` has the value 1234. This is done by the preprocessor - it substitutes all occurrences of `NR_STUDENTS` with 1234.

On the author's computer the main function looks like this:

```
int main() {  
  
    int nr_students=1234;  
  
    printf("Nr of students: %d\n",  
          nr_students);  
  
    printf("max in value: %d\n",  
          0x7fffffff);  
  
}
```

7.

```
gcc preproc-test.c -o preproc-test
```

8.

```
gcc -S preproc-test.c
```

The output is saved in a file `preproc-test.s` in the current directory.

9.

```
gcc -S preproc-test.c -o apa.s
```

10.

```
C_FILES=preproc-test.c
```

Make can't find any job (rule). It complains and exists.

11.

```
C_FILES=preproc-test.c  
all:
```

The file Makefiles is used even if don't specify it on the command line.

The rule `all` is performed.

12.

```
C_FILES=preproc-test.c
all:
lla:
```

The file Makefiles is used even if don't specify it on the command line.

The rule `all` is performed if no rule is given. Make choses the first rule.

The rule `lla` is performed if we specify `lla`.

13.

```
C_FILES=preproc-test.c
all:$(C_FILES)
lla:
```

14.

```
C_FILES=preproc-test.c
all:$(C_FILES)
    gcc $(C_FILES)
lla:
```

15.

16.

```
C_FILES=preproc-test.c
all:$(C_FILES)
    gcc $(C_FILES) -o preproc-test
lla:
```