

Makefile and Git activity

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1 Step 1 – Basic Target Definition

Basic definition of a target with a recipe and dependency

```
1 bkochuna.o: bkochuna.c
2     echo gcc -c bkochuna.c -o bkochuna.o
3     cp bkochuna.c bkochuna.o
```

2 Step 2 — Definition of a clean target

```
1 bkochuna.o: bkochuna.c
2     echo gcc -c bkochuna.c -o bkochuna.o
3     cp bkochuna.c bkochuna.o
4
5 clean:
6     rm -rf *.o
```

3 Step 3 — Two targets

```
1 bkochuna.o: bkochuna.c
2     echo gcc -c bkochuna.c -o bkochuna.o
3     cp bkochuna.c bkochuna.o
4
5 kcvaughn.o: kcvaughn.c
6     echo gcc -c kcvaughn.c -o kcvaughn.o
7     cp kcvaughn.c kcvaughn.o
8
9 clean:
10     rm -rf *.o
```

4 Step 4 — all target

How to make all the things

```
1 all: bkochuna.o kcvaughn.o
2
3 bkochuna.o: bkochuna.c
4     echo gcc -c bkochuna.c -o bkochuna.o
5     cp bkochuna.c bkochuna.o
6
7 kcvaughn.o: kcvaughn.c
8     echo gcc -c kcvaughn.c -o kcvaughn.o
9     cp kcvaughn.c kcvaughn.o
10
11 clean:
12     rm -rf *.o
```

5 Step 5 — Using Variables

Use variables; helpful for linking step.

```
1 CC = gcc
2
3 OBJ = bkochuna.o kcvaughn.o
4
5 all: main
6
7 bkochuna.o: bkochuna.c
8     echo $(CC) -c bkochuna.c -o bkochuna.o
9     cp bkochuna.c bkochuna.o
10
11 kcvaughn.o: kcvaughn.c
12     echo $(CC) -c kcvaughn.c -o kcvaughn.o
13     cp kcvaughn.c kcvaughn.o
14
15 main: $(OBJ)
16     echo $(CC) $(OBJ) -o main.exe
17
18 clean:
19     rm -rf *.o
```

6 Step 6 — Multiline input

```
1 CC = gcc
2
3 OBJ = bkochuna.o \
4 kcvaughn.o
5
6 all: main
7
8 bkochuna.o: bkochuna.c
9     echo $(CC) -c bkochuna.c -o bkochuna.o
10    cp bkochuna.c bkochuna.o
11
12 kcvaughn.o: kcvaughn.c
13     echo $(CC) -c kcvaughn.c -o kcvaughn.o
14    cp kcvaughn.c kcvaughn.o
15
16 main: $(OBJ)
17     echo $(CC) $(OBJ) -o main.exe
18
19 clean:
20     rm -rf *.o
```

7 Step 7 — Implicit Rules

Suffix substitution

```
1 CC = gcc
2
3 OBJ = bkochuna.o \
4 kcvaughn.o
5
6 all: main
7
8 .c.o:
9     echo $(CC) -c $< -o $@
10    cp $< $@
11
12 main: $(OBJ)
13     echo $(CC) $(OBJ) -o main.exe
14
15 clean:
16     rm -rf *.o
```