KERNEL KREW SPRINT 2 REPORT:

GITHUB LINK: https://github.com/reineB5/KernelKrew_xv6

In this sprint, we added two new functionalities to the xv6 kernel:

- touch command: Creates a new empty file or updates the timestamp of an existing one.
- search command that allows users to search for a keyword within the contents of a file.

Testing:

We tested the touch command inside xv6: $ touch test.txt

then $ ls to verify the file was created

```
$ touch test.txt
ls
$ .              1 1 1024
..               1 1 1024
README           2 2 2292
cat              2 3 34328
echo             2 4 33248
forktest         2 5 16248
grep             2 6 37576
init             2 7 33712
kill             2 8 33168
ln               2 9 32984
ls               2 10 36352
mkdir            2 11 33224
rm               2 12 33216
sh               2 13 54784
stressfs         2 14 34112
usertests        2 15 179416
grind            2 16 49456
wc               2 17 35280
zombie           2 18 32584
touch            2 19 33184
syscallcount     2 20 33256
console          3 21 0
test.txt         2 22 0
$
```

We tested the search command inside xv6 using the following steps:

Created a file with text using: echo hello world > file.txt

Ran: search file.txt world → Output: Found: world

```
$ echo hello world > file.txt
$ search file.txt world
Found: world
$
```

Modifications:

1. user/touch.c

- Takes a filename as an argument
- Opens the file using the O_CREATE | O_RDWR flags
- If the file exists, nothing happens. If it doesn't exist, it's created
- The file is closed and the program exits

2. user/search.c

- Takes a filename and keyword as command-line arguments.
- Opens the file and reads its contents.
- Uses a function to search for the keyword in the file.
- Prints whether the keyword was found.

3. Makefile

Added the following entries under UPROGS:

$U/_touch\

$U/_search\