Ov assign 3

Task 1

- a = b = int list

Task 2

- a)

```
t_1 := v + w
t_2 := w + 1
LABEL _GCD_
  IF t_1 = 0 THEN
    t_0 := t_2 * 2
  ELSE
    t_1 := t_2
    t_2 := t_1 mod t_2
    GOTO _GCD_
```

- b)

IL

```
t_1 := v
t_2 := w
LABEL loop
  IF t_2 == 0 THEN
    GOTO exit
  IF  t_1 / t_2 != 0 THEN
    IF t_1 < t_2 THEN
      t_1 := t_1 - t_2
    ELSE
      t_2 := t_2 - t_1
    GOTO loop

LABEL exit
```

ASM

```
main:
  j cond

lf:
  subi $s1, $s2
  j cond

loop:
slt $t1, $s2, $s1
bneq $t1, $zero, lf
subi $s2, $s1

cond:
  beq $s2, $zero, exit
  div $t1, $s1, $s2
  bneq $t1, $zero, loop

exit:
```

- c)

```
seq $s0 $s2, $s3
xori $s1 $zero, $s4
```

Task 4

- a)

```
char *y = (char*)malloc(n);
int l, i = 0;

while (i++ < n) {
  if (f(*x++)) {
    ++*y = *x
    l++;
  }
}

y[0] = l
```

- b)

Se filter.asm (Det er compiled code, så nok lidt ulæseligt)

- c)

Resultatet bliver et int array og inputs skal være et int array.