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ECE 5460

Homework 4 Simulated Annealing

To compile:

```
$ make
```

To run after compiling

```
$ make run
```

Notes

After running the starting input I got the output

```
E0: 12V3V4V5V6V7V8V9VaVbVcVdVeVfVgViVjVkVlV
Initial Cost: 287.521
Error: Chip ratio not valid : 76.3391, please adjust starting parameters
and rerun
Ef: d2H3V4iV6V7H8VV9VaVbVcV1VeVfVgV5VjVkVlV
Final Cost: 272.264
```

Since the chip ratio is only checked at the end, the program has no way of annealing towards a good chip ratio.

The final cost was 272.264, which is 15.257 better than the original.

If the constants were changed from the given, the score could be improved. Changing the constants to:

```
ratio : 0.99
iseed : 5
```

Does make it take a little longer, but it results in a better chip ratio and a better final score of 265.

```
E0: 12V3V4V5V6V7V8V9VaVbVcVdVeVfVgViVjVkVlV
Initial Cost: 287.521
Error: Chip ratio not valid : 30.8454, please adjust starting parameters
```

```
and rerun  
Ef: 92V345V6VHH7V8dHabHVcVV1VeVfVgViVjVkVlV  
Final Cost: 265
```

The theoretical minimum score, calculated by summing all areas, is 195.15. Considering that this score is literally impossible, 265 is about 35% error, or about 26% dead space.

The next initial states were similar