

## CS 452 Report

### Screenshots:

#### Basic Usage

```
PS C:\Users\neena\OneDrive\Programming\Software Programming\CS-452-Assignment-2> python3 solve.py -d a02-data/dictionary-small.txt -p a02-data/xword00.txt -v
SUCCESS! Solving took 1ms (7 recursive calls)
DETRACT
E   H
T   E
R   O
A   R
C   E
THEOREM
```

#### With Heuristics and Verbosity

```
PS C:\Users\neena\OneDrive\Programming\Software Programming\CS-452-Assignment-2> python3 solve.py -d a02-data/dictionary-small.txt -p a02-data/xword00.txt -v
mrv -vo lcv -v 1
* Reading dictionary from [a02-data/dictionary-small.txt]
* Reading puzzle from [a02-data/xword00.txt]
* CSP has 4 variables
* CSP has 4 constraints
* Attempting to solve crossword puzzle...
SUCCESS! Solving took 3ms (5 recursive calls)
DETRACT
E   H
V   E
E   O
L   R
O   E
PROGRAM
```

#### Small puzzle with small dictionary

```
PS C:\Users\neena\OneDrive\Programming\Software Programming\CS-452-Assignment-2> python3 solve.py -d a02-data/dictionary-small.txt -p a02-data/xword00.txt -v
1
* Reading dictionary from [a02-data/dictionary-small.txt]
* Reading puzzle from [a02-data/xword00.txt]
* CSP has 4 variables
* CSP has 4 constraints
* Attempting to solve crossword puzzle...
SUCCESS! Solving took 0ms (7 recursive calls)
DETRACT
E   H
T   E
R   O
A   R
C   E
THEOREM
```

#### Medium puzzle with medium dictionary

```
PS C:\Users\neena\OneDrive\Programming\Software Programming\CS-452-Assignment-2> python3 solve.py -d a02-data/dictionary-medium.txt -p a02-data/xword01.txt -v
1
* Reading dictionary from [a02-data/dictionary-medium.txt]
* Reading puzzle from [a02-data/xword01.txt]
* CSP has 8 variables
* CSP has 16 constraints
* Attempting to solve crossword puzzle...
SUCCESS! Solving took 121ms (1024 recursive calls)
AFFEARD
F I M E
FIFTEEN
E T N D
AMENDER
R E E O
DENDRON
```

#### Complex puzzle (should fail with small dictionary)

```
PS C:\Users\neena\OneDrive\Programming\Software Programming\CS-452-Assignment-2> python3 solve.py -d a02-data/dictionary-small.txt -p a02-data/xword02.txt -v
1
* Reading dictionary from [a02-data/dictionary-small.txt]
* Reading puzzle from [a02-data/xword02.txt]
* CSP has 74 variables
* CSP has 188 constraints
* Attempting to solve crossword puzzle...
FAILED; Solving took 38ms (1 recursive calls)
```