

# Coding Work #2 (Optional)

## HOWTOs

**Q: How to run the python code?**

**A:** You can use any PYTHON\_ENV + IDE you preferred. My recommendation is Anaconda + VSCODE/PyCharm

**Q: How to run this project?**

**A:** See below.

**Q: How to resolve "ModuleNotFoundError: No module named 'pygame'"**

**A:** You can use conda or pip to install this package. For example:

```
pip install conda
```

You can also install pygame via the Package Manager in Pycharm.

**Q: How to start the search?**

**A:** After you see the GUI, just press 's'. You can also change the initial solution by assigning any cell you want'

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You can always run your code with the following command or add it to the configuration in your IDE

```
python main.py --partial_sol SUDOKU_PARTIAL_SOL --filtering YOUR_ALGOR --var VAR_MODE --value VAL_MODE
```

SUDOKU\_PARTIAL\_SOL is the partial solution of sudoku, you can choose:

```
part_sol_1  
part_sol_2
```

You can find the definition of these partial solutions in directory "partial\_sol"

YOUR\_ALGOR is the arg of search method, you can choose:

```
forward_checking  
ac1  
ac3  
ac4
```

For example, if you want to test your code with AC1, you can try:

```
python main.py --partial_sol part_sol_1 --filtering ac1
```

It should be noted that you can use the heuristic function to choose the variable and value by adding "--var" and "--value" For example:

```
python main.py --partial_sol part_sol_1 --filtering ac3 --var mrv --value lcv
```

where "MRV" and "LCV" are the functions to be implemented in "heuristics.py". You can also design your own heuristics in this python file.

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Your task is to implement the undefined the functions in arc\_consistency.py including:

```
def ac3(problem):  
    raiseNotDefined()  
  
def ac4(problem):  
    raiseNotDefined()
```

To start with the code, please read the implementations in "ac1". AC1 can be very very slow!!! Therefore, you should write your own methods to make the search faster!

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You can also refer to "util.py" for useful functions and classes. For other functions and classes you want to add, please always put them in "external\_lib.py". DONT CHANGE OR WRITE YOUR CODES IN OTHER FILES.

The following files should be uploaded to CANVAS:

```
heuristics.py  
arc_consistency.py  
external_lib.py
```

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For any questions, feel free to contact with me and TAs. We would like to thank the great efforts from UCB-CS188 teaching group.

# GOOD LUCK AND HAVE FUN!