

# Final Project

## CS335

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### Objective

This is a program that schedules courses based on the number of courses users would like to take and follow the constraints that some courses cannot take together.

### Implementation Details

- Type *python final\_project.py help* to get help message
- Type *python final\_project.py cscourses.txt constraints.txt* to run the program
- The program reads the files *cscourses.txt* which includes a list of courses by the *def file2courses* function, and *constraints.txt* which includes pairs of courses cannot take together by *def file2constraints* function.
- The program asks users how many courses they want to take and find the courses that qualify the constraints.
- If the user enters an invalid input (not a number), it will print "Please enter a valid number!"
- If the user enters a number that is greater than the number of courses in the text file, it will print "Please enter a number smaller than *the number of courses*" and asks the user to enter the number of courses again.
- Then, the program will run n times which n is the number of courses the user would like to take.
- The first course is picked randomly in the course list. Then, using Forward Checking method to check all the constraints. A loop is run through the constraints file to determine each pair of courses. Inside this loop, the courses list loop is run to compare the courses

loop and the constraints. If one course is already picked, then remove that course out of the list. If the last pick is in the constraint (first position c1, or second position c2), remove the course that matches with its pair out of the list also.

- If the user requests a number of courses but only a smaller number of courses qualify, it will print "No more qualified courses!"
- Then, the program will ask if the user wants another search. If the user types "yes", all the code will run again. If the user types "no" or something else, the program will say "Goodbye!" and stop.

### **Running the program**

The program must be run by executing `python final_project.py cscourses.txt constraints.txt`  
Type `python final_project.py help` to get a help message.

### **References:**

I got this code:

```
def exception_handler(exception_type, exception, traceback):  
    print ("" )  
sys.excepthook = exception_handler
```

from:

<https://stackoverflow.com/questions/27674602/hide-throwback-unless-a-debug-flag-is-set>