

Simulation of Course Workload and Academic Pressure for U of I Students

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Hypothesis (before running the simulation):

From my experience as a student, I believe that the finals week/s (last 1 or 2 weeks of the semester) and the middle week (the mid-term week or the week just half-way through the semester) tend to be the most hectic. However, this is just a hypothesis.

Actual simulation and other methods of data analysis could provide counter-intuitive results, for example, week 2 could be the busiest for some students.

Actual Run:

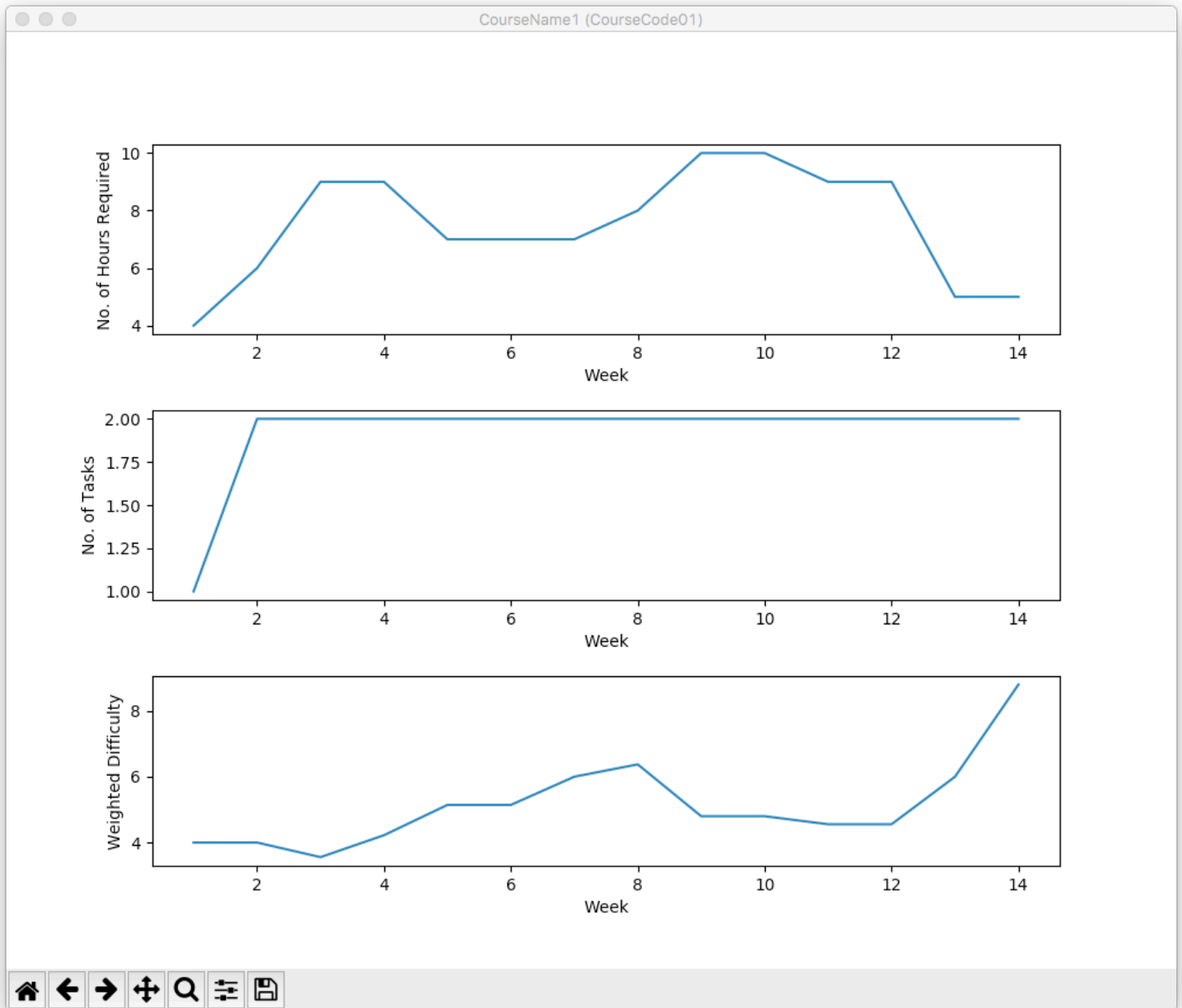
Sample Input:

3 (for number of courses)

Output graphs:

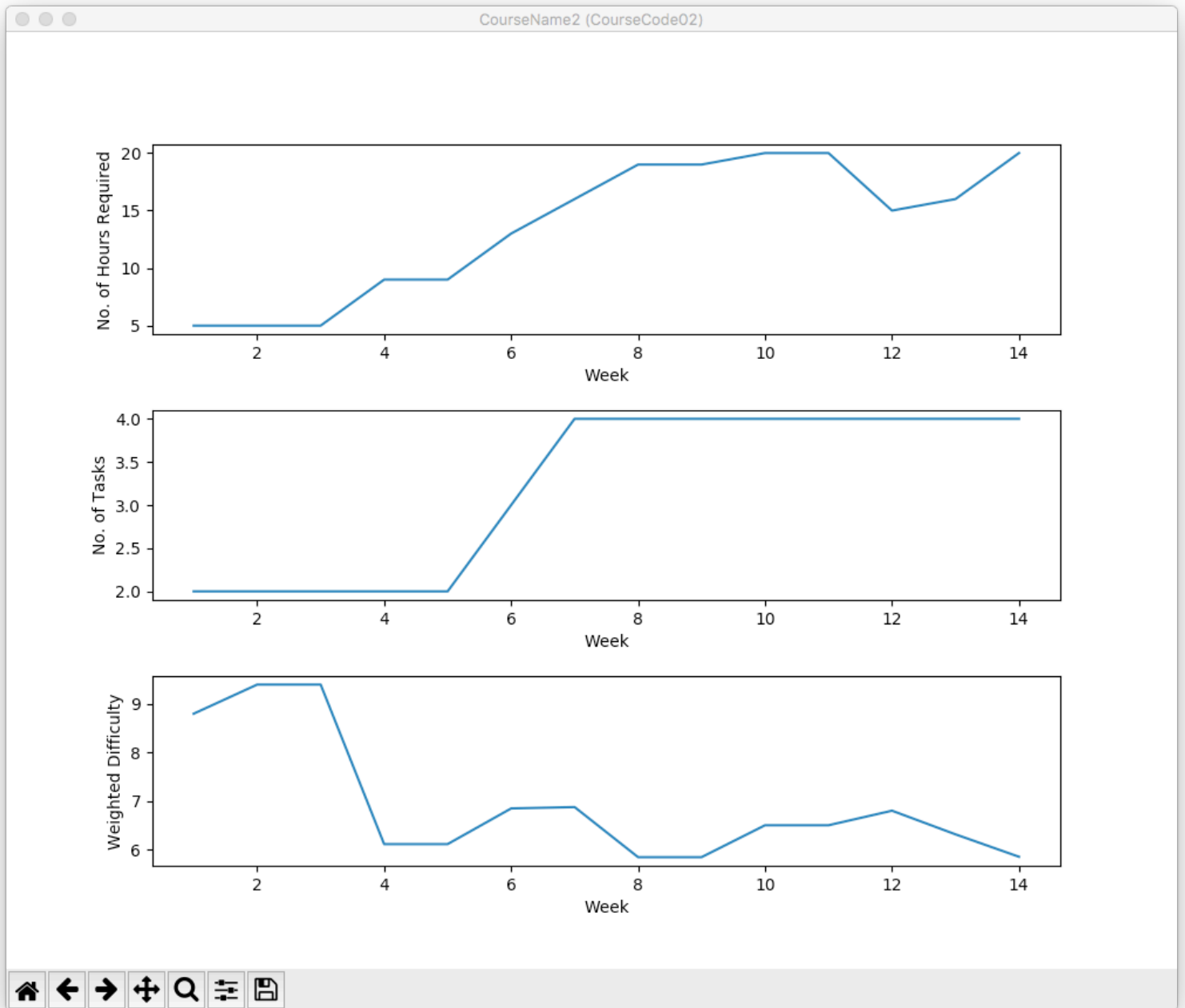
For Course 1:

(Please check next page for screenshot of graph for course 1)



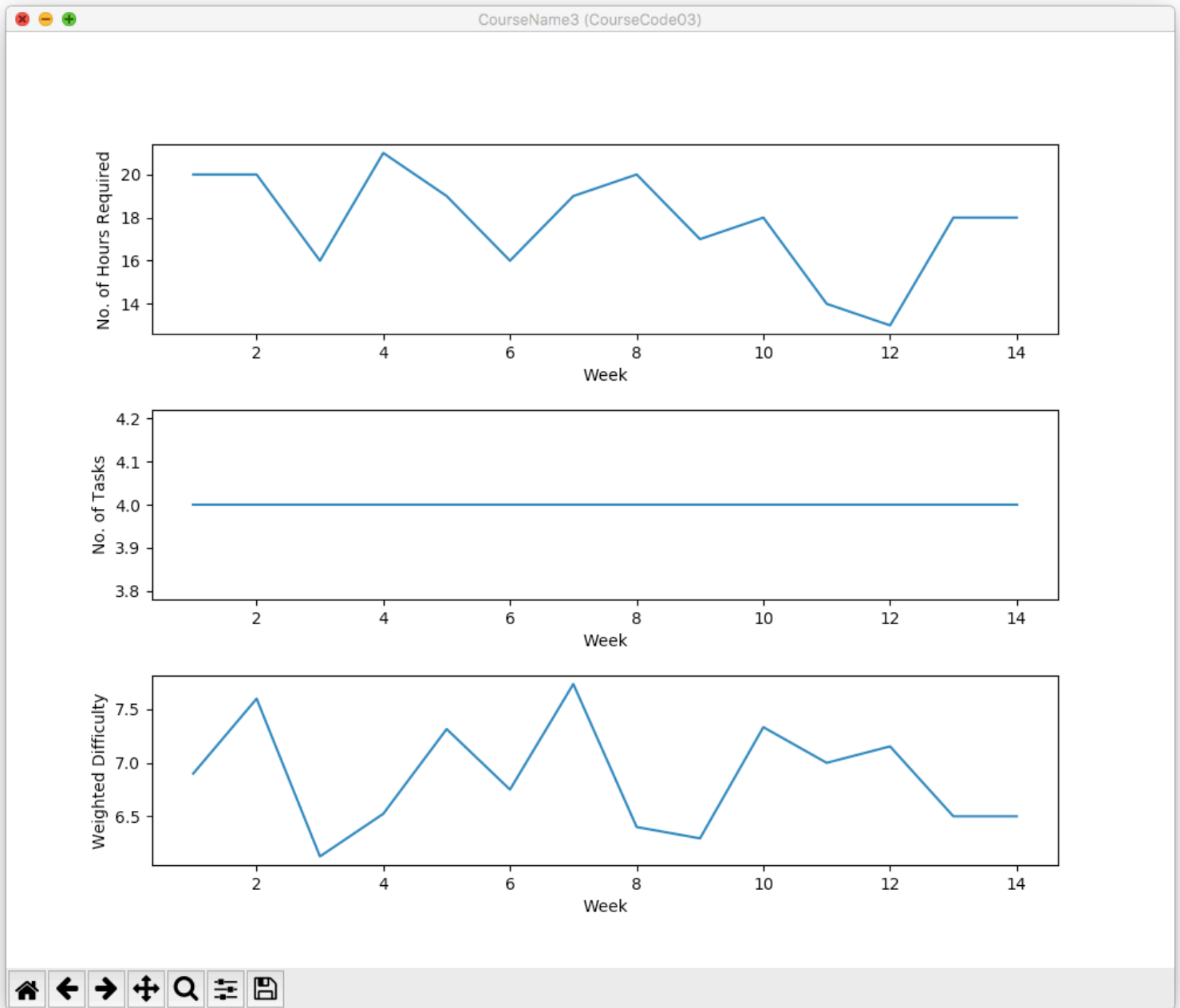
For Course 2:

(Please check next page for screenshot of graph for course 2)



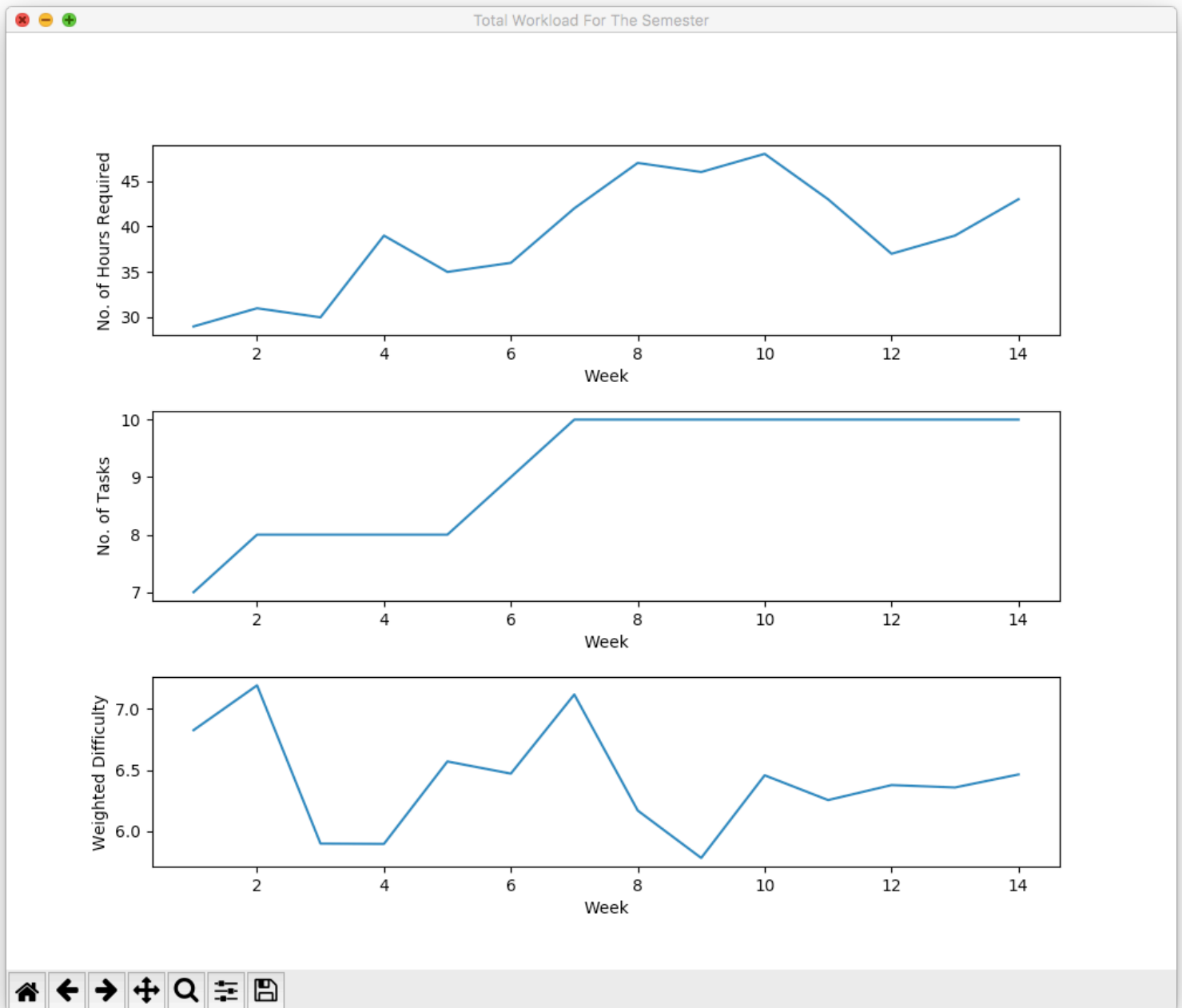
For Course 3:

(Please check next page for screenshot of graph for course 3)



For Total Workload:

(Please check next page for screenshot of graph for total workload)



Analysis:

(Skip to the part after conclusion for screenshots of terminal output)

For this particular sample run, it can be seen that the most hectic weeks are as follows:

In terms of no. of hours required: weeks 10 followed by week 8

In terms of no. of tasks: weeks 7-14 (equal)

In terms of weighted difficulty: week 2 followed by week 7

Conclusion:

(Skip to the part after conclusion for screenshots of terminal output)

We can conclude that the hypothesis does not always hold true (based on multiple simulation runs). Sometimes, the most hectic time for students could be weeks other than the mid-term and finals weeks.

Screenshots (of terminal output):

```
Final-project-master — -bash — 80x24
[wirelessprv-10-195-103-219:Final-project-master nanda$ python3 Course_Workload_Sim.py

Enter the number of courses taken this semester: 3

Course Name: CourseName1
Course Code: CourseCode01

+-----+-----+-----+-----+
| Week No. | No. of Tasks | Total no. of Hours | Weighted Difficulty |
+-----+-----+-----+-----+
| 1        | 1           | 4                   | 4                   |
+-----+-----+-----+-----+
| 2        | 2           | 6                   | 4                   |
+-----+-----+-----+-----+
| 3        | 2           | 9                   | 3.556               |
+-----+-----+-----+-----+
| 4        | 2           | 9                   | 4.222               |
+-----+-----+-----+-----+
| 5        | 2           | 7                   | 5.143               |
+-----+-----+-----+-----+
| 6        | 2           | 7                   | 5.143               |
+-----+-----+-----+-----+
```

```
Final-project-master — -bash — 80x24

+-----+-----+-----+-----+
| 7        | 2           | 7                   | 6                   |
+-----+-----+-----+-----+
| 8        | 2           | 8                   | 6.375               |
+-----+-----+-----+-----+
| 9        | 2           | 10                  | 4.800               |
+-----+-----+-----+-----+
| 10       | 2           | 10                  | 4.800               |
+-----+-----+-----+-----+
| 11       | 2           | 9                   | 4.556               |
+-----+-----+-----+-----+
| 12       | 2           | 9                   | 4.556               |
+-----+-----+-----+-----+
| 13       | 2           | 5                   | 6                   |
+-----+-----+-----+-----+
| 14       | 2           | 5                   | 8.800               |
+-----+-----+-----+-----+

Course Name: CourseName2
Course Code: CourseCode02

+-----+-----+-----+-----+
| Week No. | No. of Tasks | Total no. of Hours | Weighted Difficulty |
```

(Please check next page for remaining screenshots)

```
Final-project-master — -bash — 80x24

+-----+-----+-----+-----+
| 13      | 4      | 16      | 6.312    |
+-----+-----+-----+-----+
| 14      | 4      | 20      | 5.850    |
+-----+-----+-----+-----+

Course Name: CourseName3
Course Code: CourseCode03

+-----+-----+-----+-----+
| Week No. | No. of Tasks | Total no. of Hours | Weighted Difficulty |
+-----+-----+-----+-----+
| 1        | 4          | 20          | 6.900            |
+-----+-----+-----+-----+
| 2        | 4          | 20          | 7.600            |
+-----+-----+-----+-----+
| 3        | 4          | 16          | 6.125            |
+-----+-----+-----+-----+
| 4        | 4          | 21          | 6.524            |
+-----+-----+-----+-----+
| 5        | 4          | 19          | 7.316            |
+-----+-----+-----+-----+
| 6        | 4          | 16          | 6.750            |
+-----+-----+-----+-----+
```

```
Final-project-master — -bash — 80x24

| 1      | 2      | 5      | 8.800    |
+-----+-----+-----+-----+
| 2      | 2      | 5      | 9.400    |
+-----+-----+-----+-----+
| 3      | 2      | 5      | 9.400    |
+-----+-----+-----+-----+
| 4      | 2      | 9      | 6.111    |
+-----+-----+-----+-----+
| 5      | 2      | 9      | 6.111    |
+-----+-----+-----+-----+
| 6      | 3      | 13     | 6.846    |
+-----+-----+-----+-----+
| 7      | 4      | 16     | 6.875    |
+-----+-----+-----+-----+
| 8      | 4      | 19     | 5.842    |
+-----+-----+-----+-----+
| 9      | 4      | 19     | 5.842    |
+-----+-----+-----+-----+
| 10     | 4      | 20     | 6.500    |
+-----+-----+-----+-----+
| 11     | 4      | 20     | 6.500    |
+-----+-----+-----+-----+
| 12     | 4      | 15     | 6.800    |
+-----+-----+-----+-----+
```

(Please check next page for remaining screenshots)

```
Final-project-master — -bash — 80x24

| 7 | 4 | 19 | 7.737 |
+---+---+---+---+
| 8 | 4 | 20 | 6.400 |
+---+---+---+---+
| 9 | 4 | 17 | 6.294 |
+---+---+---+---+
| 10 | 4 | 18 | 7.333 |
+---+---+---+---+
| 11 | 4 | 14 | 7 |
+---+---+---+---+
| 12 | 4 | 13 | 7.154 |
+---+---+---+---+
| 13 | 4 | 18 | 6.500 |
+---+---+---+---+
| 14 | 4 | 18 | 6.500 |
+---+---+---+---+

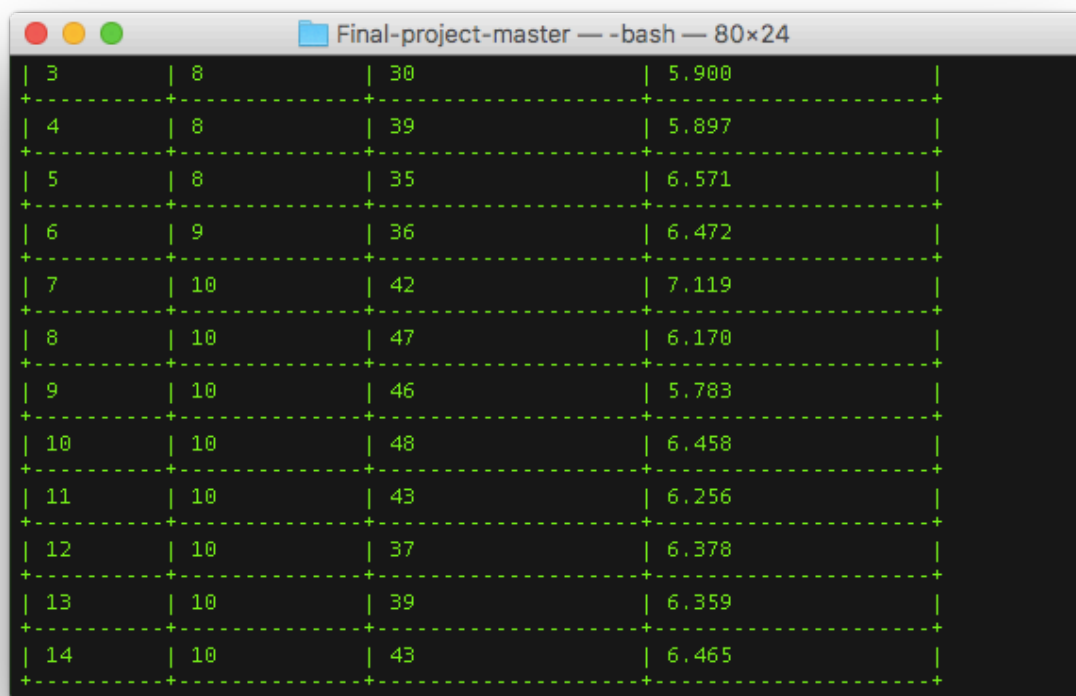
Total course workload for the entire semester:

+---+---+---+---+
| Week No. | No. of Tasks | Total no. of Hours | Weighted Difficulty |
+---+---+---+---+
| 1 | 7 | 29 | 6.828 |
```

```
Final-project-master — -bash — 80x24

+---+---+---+---+
| Week No. | No. of Tasks | Total no. of Hours | Weighted Difficulty |
+---+---+---+---+
| 1 | 7 | 29 | 6.828 |
+---+---+---+---+
| 2 | 8 | 31 | 7.194 |
+---+---+---+---+
| 3 | 8 | 30 | 5.900 |
+---+---+---+---+
| 4 | 8 | 39 | 5.897 |
+---+---+---+---+
| 5 | 8 | 35 | 6.571 |
+---+---+---+---+
| 6 | 9 | 36 | 6.472 |
+---+---+---+---+
| 7 | 10 | 42 | 7.119 |
+---+---+---+---+
| 8 | 10 | 47 | 6.170 |
+---+---+---+---+
| 9 | 10 | 46 | 5.783 |
+---+---+---+---+
| 10 | 10 | 48 | 6.458 |
+---+---+---+---+
| 11 | 10 | 43 | 6.256 |
```

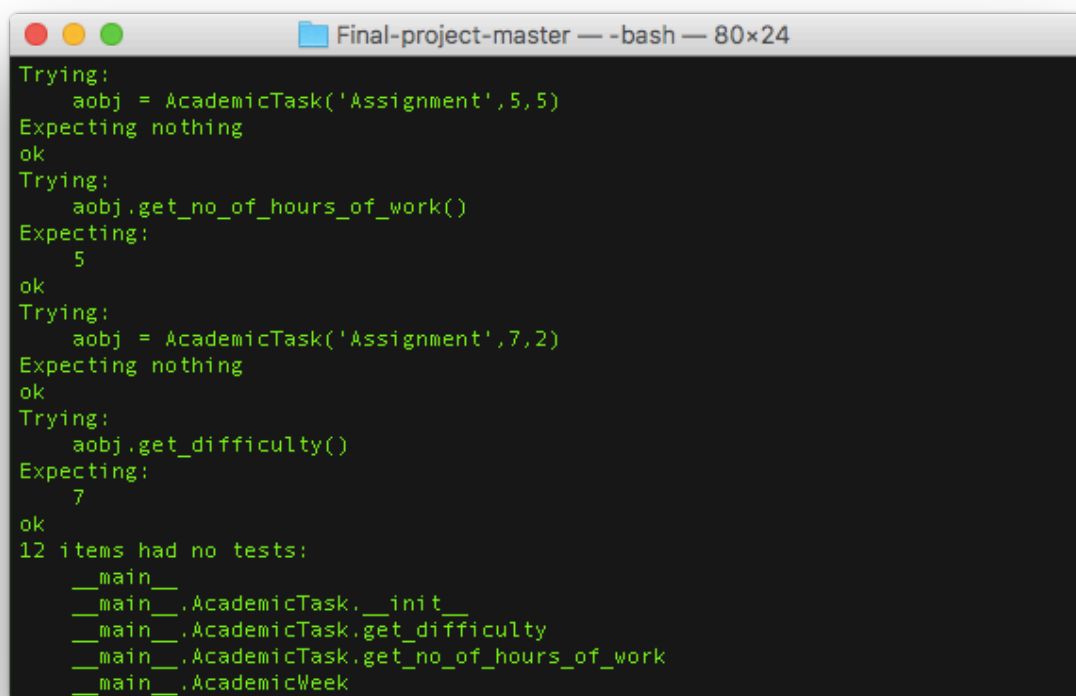
(Please check next page for remaining screenshots)



Final-project-master — -bash — 80x24

3	8	30	5.900
4	8	39	5.897
5	8	35	6.571
6	9	36	6.472
7	10	42	7.119
8	10	47	6.170
9	10	46	5.783
10	10	48	6.458
11	10	43	6.256
12	10	37	6.378
13	10	39	6.359
14	10	43	6.465

Screenshots of doctests:



Final-project-master — -bash — 80x24

```
Trying:
    aobj = AcademicTask('Assignment',5,5)
Expecting nothing
ok
Trying:
    aobj.get_no_of_hours_of_work()
Expecting:
    5
ok
Trying:
    aobj = AcademicTask('Assignment',7,2)
Expecting nothing
ok
Trying:
    aobj.get_difficulty()
Expecting:
    7
ok
12 items had no tests:
    __main__
    __main__.AcademicTask.__init__
    __main__.AcademicTask.get_difficulty
    __main__.AcademicTask.get_no_of_hours_of_work
    __main__.AcademicWeek
```

(Please check next page for remaining screenshot)

```
Final-project-master — -bash — 80x24
Trying:
  aobj.get_difficulty()
Expecting:
  7
ok
12 items had no tests:
  __main__
  __main__.AcademicTask.__init__
  __main__.AcademicTask.get_difficulty
  __main__.AcademicTask.get_no_of_hours_of_work
  __main__.AcademicWeek
  __main__.AcademicWeek.__init__
  __main__.AcademicWeek.get_weekly_stats
  __main__.Course
  __main__.Course.__init__
  __main__.Student
  __main__.Student.__init__
  __main__.main
1 items passed all tests:
  4 tests in __main__.AcademicTask
4 tests in 13 items.
4 passed and 0 failed.
Test passed.
wirelessprv-10-195-103-219:Final-project-master nanda$
```