

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

by Shreenandan Rajarathnam

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:

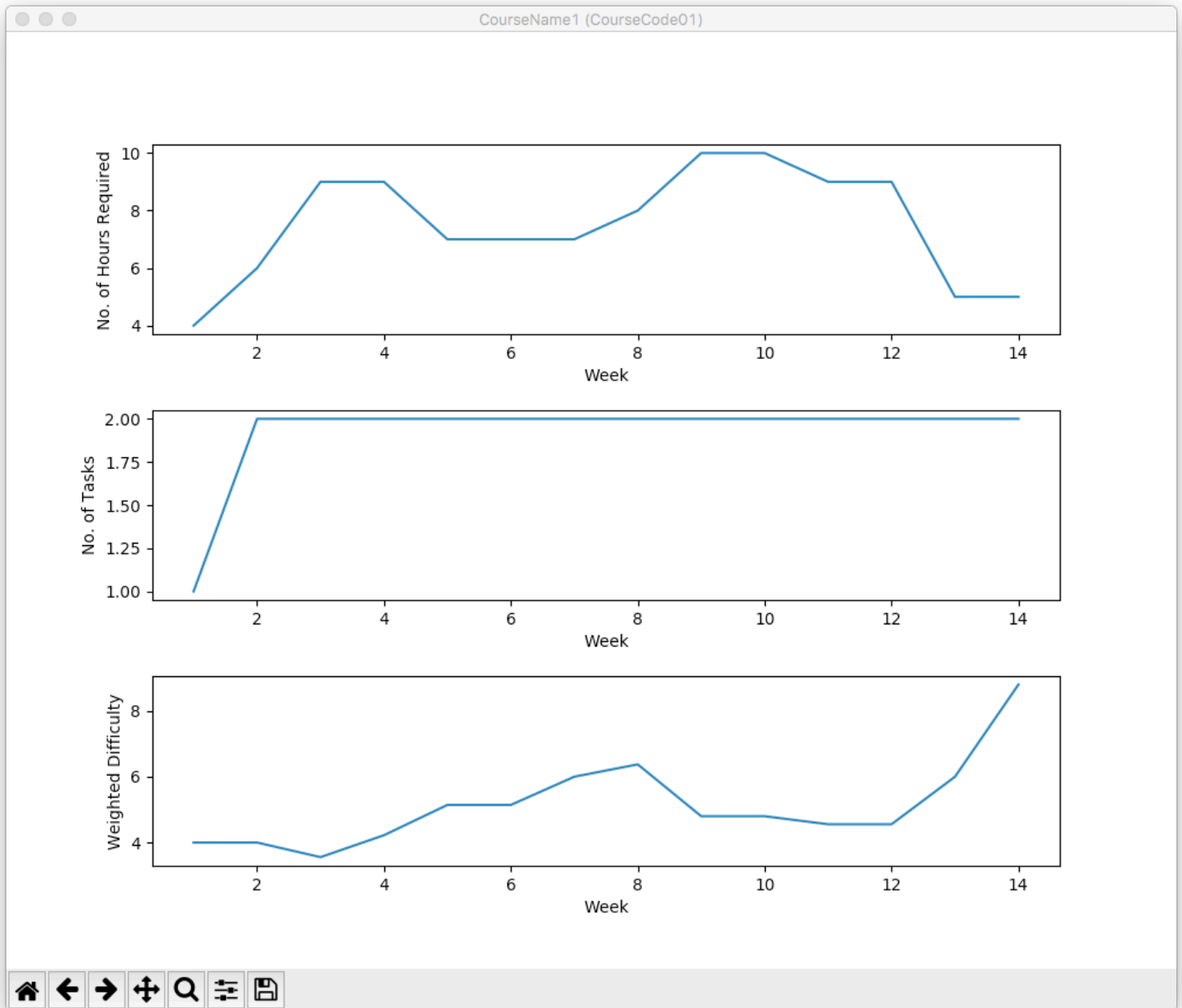
Sample Input:

3 (for number of courses)

Output graphs:

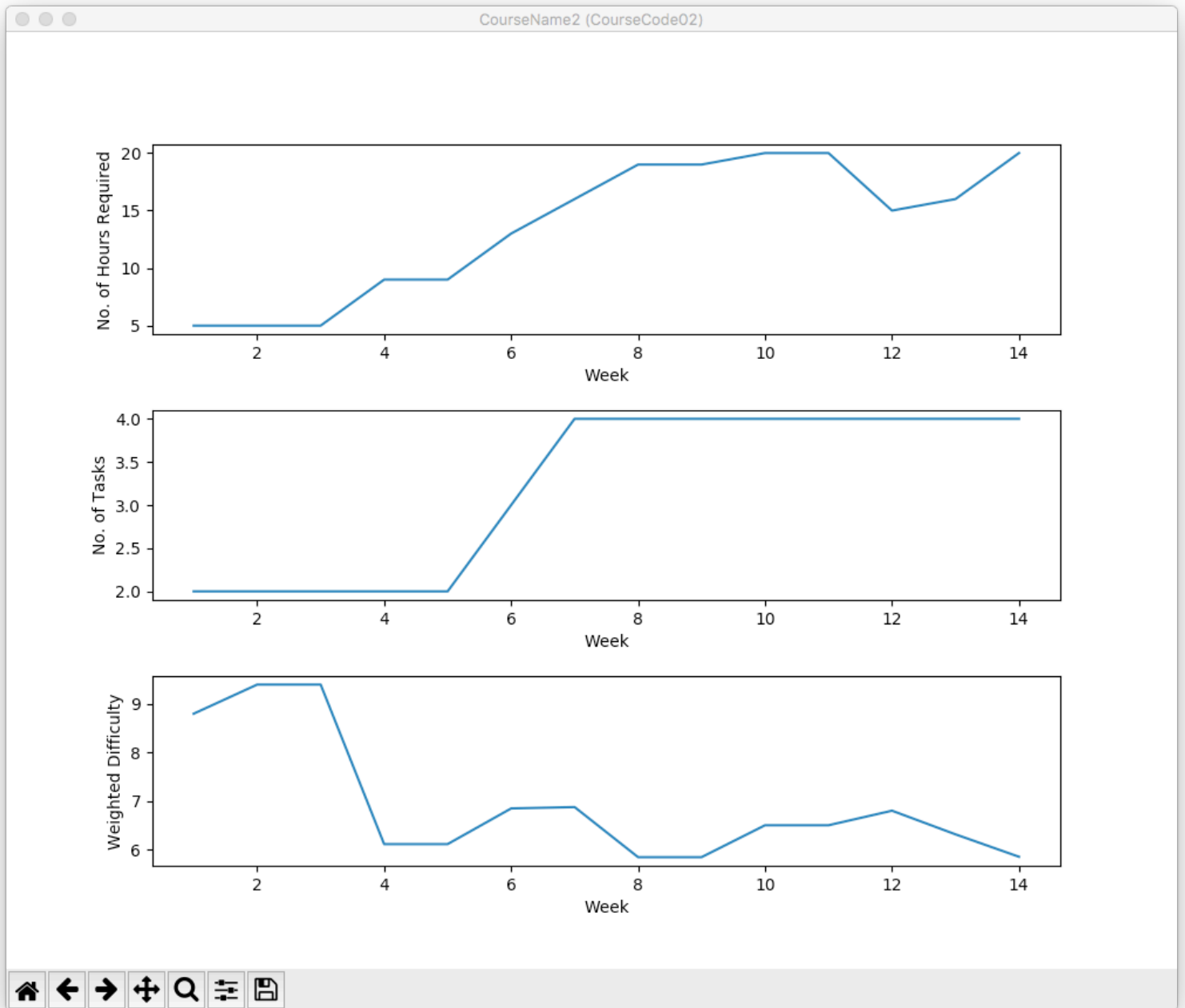
For Course 1:

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



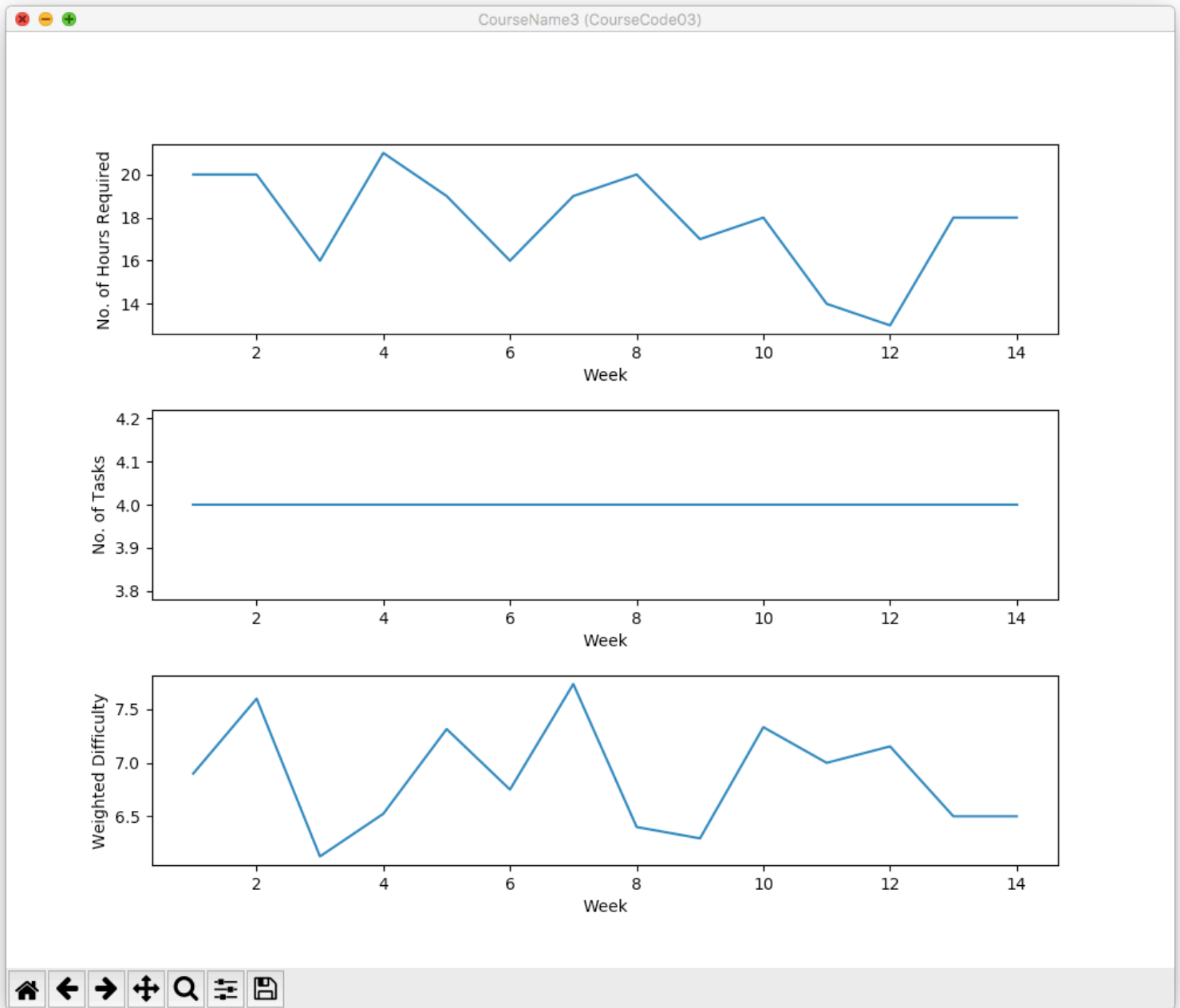
For Course 2:

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



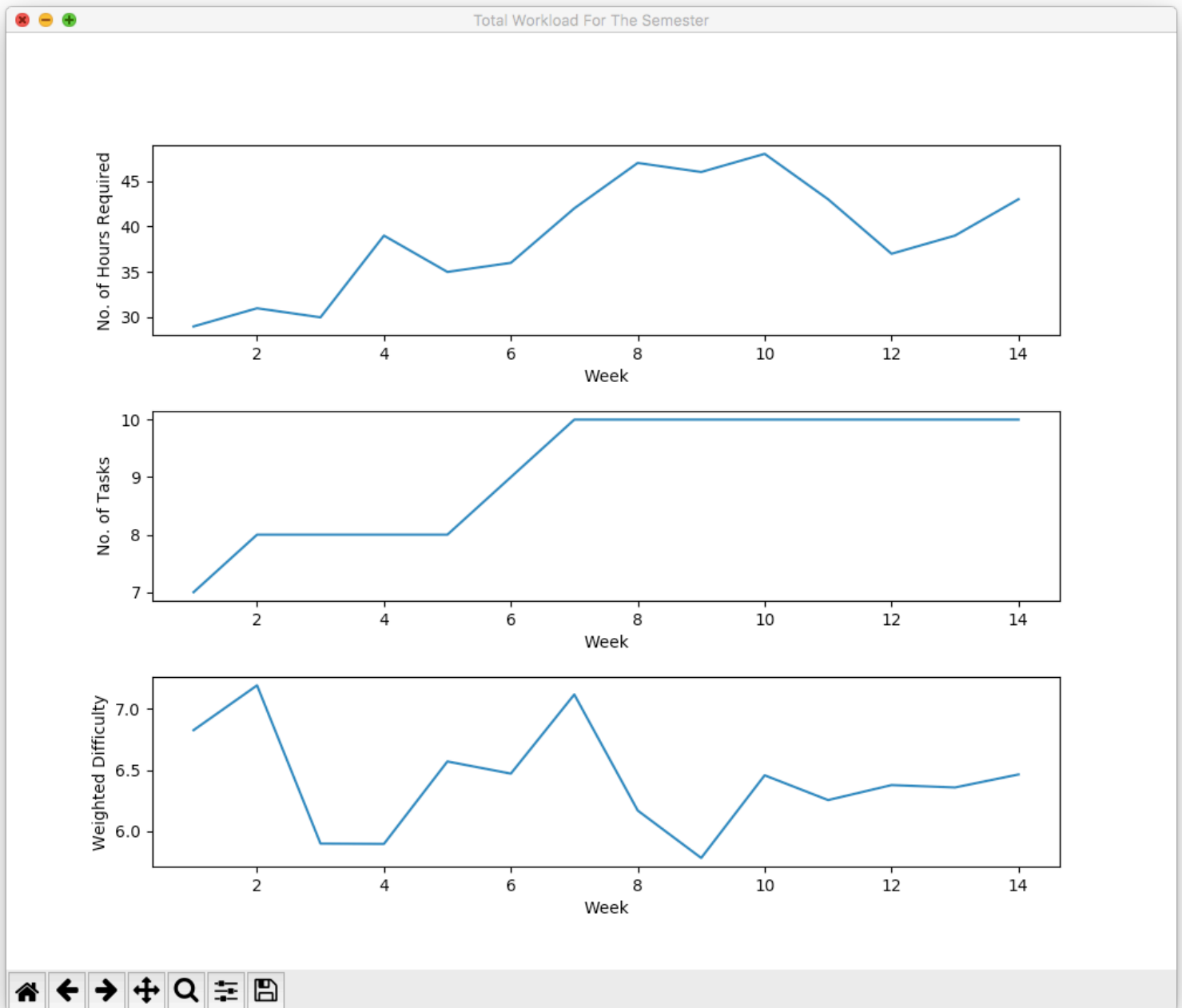
For Course 3:

(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 screenshot)

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	
+-----+	+-----+	+-----+	+-----+	+