Lab Assignment 2

Github link -

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Group 89

Heuristics and Optimization

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0. Table of Contents

1. Introduction

In this report we have described the modelling of the two parts desired: validation with Python Constraint and Planning with Heuristic Search. First, we will talk about part 1 explaining the model presented and implementation in Python, decisions made and how it works.

In the following section, we have analyzed the results obtained, as asked for, discussed problems encountered and discussed several problem situations with some extreme cases to show the way our model deals with them. Then, conclusions and references to documents and pages that were consulted is shown.

As it will be seen in the explanations, we have decided to give an important weight to show in deep the decisions taken by commenting them. Besides, we wanted to give different examples to prove our code works, together with extreme cases and how those cases could be solved.

We had to revise several theoretical concepts and exercises done in order to gain the knowledge needed to solve the tasks and work faster. Specially those regarding Python constraints and syntax, and heuristic ones.

2. Part 1

Problem modeling

The

Model implementation

As

3. Part 2

Problem modeling

As

Model implementation

As

4. Problems encountered

The greatest difficulty we encountered was at the start with modelling one of the constraints and it caused infinite solutions. From what we have done in class, this is harder, which makes it

good to learn more. Nonetheless, it takes time, thinking and questioning to see concepts and solve desired tasks.

Working with Python can be tricky specially if you have not yet studied it or worked with it. This makes it larger to get into working on the proper lab assignment. Similar to what it happens when you are not very familiar with terminal or Github.

5. Conclusion

Developing this project has given us more abilities in working with Python and to realize about its potential. It has given us the opportunity to see the power of this subject with a true-life application. So, at the end we manage to enjoy the subject which seems a very practical subject.

Some concepts from Python or heuristics had to be revised so that we could solve the several parts of the assignment as well as the tools we are not that familiar with although been using them for some weeks.

We have seen an increment in knowledge while developing this lab assignment. Once part 1 was modeled, we got confident in solving part 2 and writing the report through the process. We are now confident to solve more difficult problems and can now see that those solved in class and exams are quite easy in comparison.

At the end, it is both interesting and good to be able to do projects on real-life situation - continuing with the previous lab assignment- instead of projects or assignments of more abstract situations. All by seeing that what you are learning will be useful for tomorrow and that theoretical concepts are learned with a purpose.

6. References

- A list of commonly used Git commands – GitHub <<https://github.com/joshnh/Git-Commands>>
- Cómo navegar con archivos y carpetas en una terminal. <<https://terminalcheatsheet.com/es/guides/navigate-terminal>>
-
-
- Stack Overflow-Where Developers Learn, Share, & Build. <<https://stackoverflow.com>>