Automated Reasoning in AI
Assignment 3: Description Logic

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Abstract

...

1 Introduction

... Section **??**. Section **??**.

Table 1: *Overbodige Sudoku*

	9	4				1	3	
				7	6			2
	8			1				
	3	2						
			2				6	
				5		4		
					8			7
		6	3		4			8

2 ??

...

- ...

3 ??

... See also Figure **??**.

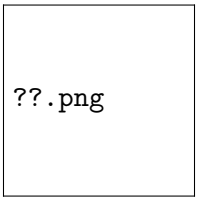

Figure 1: *??*

```
procedure ??
end ??
```

Figure 2: *??*

3.1 ??

... shown in Figure **??**.

...

3.2 ??

... citet??.

3.2.1 ??

... in **?**. In other sources, such as **?**

Table 2: *??*

	9	4				1	3	

... from Table **??**

3.2.2 ??

4 ??

Table **??**

Table 3: *??*

{2, 5, 6, 7, 8}	9	4	{5, 8}	{2, 8}	{2, 5}	1	3	{5, 6}

Revise	Hidden Singles	Hidden Pairs	Naked Pairs	sudoku_training	top95
				9m49s	$*$
x				8m56s	1h55m25s
x	x	x	x	25s	10s
x	x			29s	47s
x	x		x	23s	21s
x	x	x		28s	16s
x		x		8m9s	26m37s
x		x	x	1m21s	3m51s
x			x	1m17s	19m32s

Table 4: *The runtimes of our program using two different Sudoku sets with the different optimizations enabled (indicated with an x) or disabled. The times were averaged over three runs, except the revise-only trial and the trial with no optimizations which were only performed once.*
$*$ *= not run*

Revise	H. S.	H. P.	N. P.	Heur. 1	Heur. 3	sudoku_training	top95
x	x	x	x	x	x	20s	7s
x	x	x	x	x	x	8s $*$	3s $*$

Table 5: *The runtimes of our program using two different Sudoku sets with all optimizations and heuristics enabled. The times were averaged over three runs.*
$*$ *= multithreaded*

5 Discussion

6 Conclusion

References

Krzysztof Apt. *Principles of Constraint Programming*. Cambridge University Press, Cambridge, 2003. ISBN 0521825830.

Roman Barták. On-line guide to constraint programming, June 1998. URL `http://kti.mff.cuni.cz/~bartak/constraints/index.html`.