Smart Parking with A* algorithm

Monterrey Institute of Technology and Higher Education

EGIA GDA

Intelligent Agents

Jose Ramon Obeso, Obed N Munoz

Professor: Gildardo Sanchez

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Customarily acknowledgments are included as last part of the preface.

Place(s), month year Firstname Surname Firstname Surname

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List of Contributors

Firstname Surname

ABC Institute, 123 Prime Street, Daisy Town, NA 01234, USA, e-mail: smith@smith.edu

Firstname Surname

XYZ Institute, Technical University, Albert-Schweitzer-Str. 34, 1000 Berlin, Germany, e-mail: meier@tu.edu

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Chapter 1 Contribution Title

Name of First Author and Name of Second Author

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$$a \times b = c \,, \tag{1.1}$$

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$$a \times b = c$$

$$\mathbf{a} \cdot \mathbf{b} = \mathbf{c}$$
(1.2)

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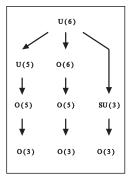
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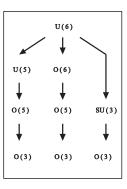


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- 1. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
 - a. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
 - b. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
- 2. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.

Subparagraph Heading

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- Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development, cf.
 Table 1.1.
 - Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
 - Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
- Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.

Run-in Heading Boldface Version Use the LATEX automatism for all your cross-references and citations as has already been described in Sect. 1.2.

Run-in Heading Italic Version Use the L^AT_EX automatism for all your cross-references and citations as has already been described in Sect. 1.2.

 Table 1.1 Please write your table caption here

Classes	Subclass	Length	Action Mechanism	-
Translation Translation Translation Translation	mRNA ^a mRNA cleavage mRNA mRNA	22 (19–25) 21 21–22 24–26	Translation repression, mRNA cleavage mRNA cleavage mRNA cleavage Histone and DNA Modification	^a Table foot note (with
superscript)				-

1.3 Section Heading

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1.3.1 Subsection Heading

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Theorem 1.1. Theorem text goes here.

Definition 1.1. Definition text goes here.

Proof. Proof text goes here. \Box

Paragraph Heading

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Definition 1.2. Definition text goes here.

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$$a \times b = c \tag{1.3}$$

References

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- Dod, J.: Effective substances. In: The Dictionary of Substances and Their Effects. Royal Society of Chemistry (1999)
 Available via DIALOG.
 - http://www.rsc.org/dose/title of subordinate document. Cited 15 Jan 1999
- 3. Geddes, K.O., Czapor, S.R., Labahn, G.: Algorithms for Computer Algebra. Kluwer, Boston (1992)
- 4. Hamburger, C.: Quasimonotonicity, regularity and duality for nonlinear systems of partial differential equations. Ann. Mat. Pura. Appl. 169, 321–354 (1995)
- Slifka, M.K., Whitton, J.L.: Clinical implications of dysregulated cytokine production. J. Mol. Med. (2000) doi: 10.1007/s001090000086
- 6. J. Dod, in *The Dictionary of Substances and Their Effects*, Royal Society of Chemistry. (Available via DIALOG, 1999), http://www.rsc.org/dose/title of subordinate document. Cited 15 Jan 1999
- 7. H. Ibach, H. Lüth, Solid-State Physics, 2nd edn. (Springer, New York, 1996), pp. 45-56
- 8. S. Preuss, A. Demchuk Jr., M. Stuke, Appl. Phys. A 61
- 9. M.K. Slifka, J.L. Whitton, J. Mol. Med., doi: 10.1007/s001090000086
- 10. S.E. Smith, in *Neuromuscular Junction*, ed. by E. Zaimis. Handbook of Experimental Pharmacology, vol 42 (Springer, Heidelberg, 1976), p. 593
- 11. Calfee, R. C., & Valencia, R. R. (1991). APA guide to preparing manuscripts for journal publication. Washington, DC: American Psychological Association.
- Dod, J. (1999). Effective substances. In: The dictionary of substances and their effects. Royal Society of Chemistry. Available via DIALOG. http://www.rsc.org/dose/Effective substances. Cited 15 Jan 1999.
- 13. Harris, M., Karper, E., Stacks, G., Hoffman, D., DeNiro, R., Cruz, P., et al. (2001). Writing labs and the Hollywood connection. *J Film* Writing, 44(3), 213–245.
- 14. O'Neil, J. M., & Egan, J. (1992). Men's and women's gender role journeys: Metaphor for healing, transition, and transformation. In B. R. Wainrig (Ed.), *Gender issues across the life cycle* (pp. 107–123). New York: Springer.
- 15. Kreger, M., Brindis, C.D., Manuel, D.M., Sassoubre, L. (2007). Lessons learned in systems change initiatives: benchmarks and indicators. *American Journal of Community Psychology*, doi: 10.1007/s10464-007-9108-14.
- Alber John, Daniel C. O'Connell, and Sabine Kowal. 2002. Personal perspective in TV interviews. Pragmatics 12:257– 271
- 17. Cameron, Deborah. 1997. Theoretical debates in feminist linguistics: Questions of sex and gender. In *Gender and discourse*, ed. Ruth Wodak, 99–119. London: Sage Publications.
- 18. Cameron, Deborah. 1985. Feminism and linguistic theory. New York: St. Martin's Press.
- 19. Dod, Jake. 1999. Effective substances. In: The dictionary of substances and their effects. Royal Society of Chemistry. Available via DIALOG.
 - http://www.rsc.org/dose/title of subordinate document. Cited 15 Jan 1999
- 20. Suleiman, Camelia, Daniel C. OConnell, and Sabine Kowal. 2002. 'If you and I, if we, in this later day, lose that sacred fire...': Perspective in political interviews. *Journal of Psycholinguistic Research*. doi: 10.1023/A:1015592129296.

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21. Brown B, Aaron M (2001) The politics of nature. In: Smith J (ed) The rise of modern genomics, 3rd edn. Wiley, New York

- 22. Dod J (1999) Effective Substances. In: The dictionary of substances and their effects. Royal Society of Chemistry. Available via DIALOG.
 - http://www.rsc.org/dose/title of subordinate document. Cited 15 Jan 1999
- 23. Slifka MK, Whitton JL (2000) Clinical implications of dysregulated cytokine production. J Mol Med, doi: 10.1007/s00109000086
- 24. Smith J, Jones M Jr, Houghton L et al (1999) Future of health insurance. N Engl J Med 965:325–329
- 25. South J, Blass B (2001) The future of modern genomics. Blackwell, London

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A.1.1 Subsection Heading

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$$\mathbf{a} \times \mathbf{b} = \mathbf{c}$$
$$\mathbf{a} \times \mathbf{b} = \mathbf{c}$$
 (A.1)

A.1.1.1 Subsubsection Heading

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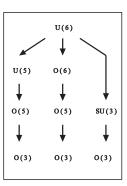


Table A.1 Please write your table caption here

Classes	Subclass	Length	Action Mechanism	_
Translation Translation Translation Translation	mRNA ^a mRNA cleavage mRNA mRNA	22 (19–25) 21 21–22 24–26	Translation repression, mRNA cleavage mRNA cleavage mRNA cleavage Histone and DNA Modification	- ^а Та

a Table foot note (with

superscript)

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