CE101 Précis Assignment

Name:

Registration Number:

Article Used: 1-10

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Précis

For this assignment I have chosen to study the article describing procedurally generated cities.

The article introduces by describing the need and usefulness of procedurally generated cities. The main argument promoted is lower time consumption from city modellers and level designers in game- and visualization computing. It argues that large and realistic models are on the rise and as such modelling costs can be vastly reduced by having cities generated as opposed to modelled manually. Furthermore the introduction goes on to describe how the generation techniques employed are pseudo-random while lastly giving a simplified overview of the steps in the procedure.

In the second section of the article related work and research are discussed. It notes that there are other options in terms of how to (pseudo)randomly generate cities than the approach taken by the authors but with varying degrees of efficiency. An historical overview of other attempts and approaches to modelling cities automatically, not necessarily procedurally, is given while accrediting people who first showed how the various complicated aspects of city generation can be done.

It is in the third section that the article first gets technical. Divided into three sub-chapters, this section goes on to describe separate theoretical aspects of the city generation. In the first section the algorithm determining street division is discussed, which is essentially how streets and road networks are generated. It explains how polygons, which form one half of a street each, are recursively generated, divided and then organized into a tree structure. The polygon division employs either of two algorithms made by the authors. This sub-section ends by explaining how changing between the two algorithms allow for flexibility in terms of what kind of city the user wishes to generate in terms of organization (grid city like New York or more organically evolved street networks commonly found in older cities). In the second sub-section of the article sampling of road networks is discussed. Some mathematical formulas on calculating polygon precision in corners and edges are shown as well as a very explicitly stating how these formulas guarantee no gaps between the polygons themselves. Furthermore the placement of buildings, houses and other urban structures within the polygons are explained.

Reflective Statement

1. Replace with the word count for your précis. The guide is 1000 words [↑](#footnote-ref-1)
2. Replace with word count for your reflective statement. The guide is 500 words. [↑](#footnote-ref-2)