Critique of Representation of Group 3

Relevance to Course Material: Which chapter, section or topics in the course does the presented material refer to (50 word limit)?

Chapter 6: Structures and access methods, 6.1, 6.6 Collection of objects, 6.7
It mainly introduces some useful data structure and algorithms to store and compute spatial data elements or dataset. Such as Voronoi diagram R-tree, R* tree, Mobile object indexing, Rectangle and minimum bounding boxes.

Novelty: What is the new information in the Encyclopedia articles with respect to the textbook material (50 word limit)?

(1) Providing the detail design mechanism of Voronoi diagram R-tree, R* tree and Mobile object indexing.
(2) Explaining and comparing their characteristics and advantages regarding spatial data processing.
(3) Illustrating implementation (pseudocode) of some algorithms including cover range search, insertion, delete and condense of the R-tree structure and its variants.

Societal Motivation: What is the motivation behind the new information in the Encyclopedia articles? For example, list societal applications that may use these new concepts, use cases for these new ideas, etc. (50 word limit)

Different data structures and algorithms will act as basis for database design and knowledge retrieval. Many study fields require new efficient collecting and processing approaches to deal with huge amount of row data, for example, astronomy modeling, spatial biology statistics, marketing prediction, and routing. The Voronoi diagram and R-tree structure are established with good computational features so that they are applied in lots of social application softwares.

Computer Science Motivation: If applicable, what is the Computer Science (CS) benefit of the proposed approaches (e.g. new algorithms, data structures or other CS concepts, scalability, increase in productivity for software engineers, etc) (50 word limit)

In computer science area, we continuously seek for efficient methods for operating data for many years, since they are key factors for evolution of computer. The representation emphasizes the novel R-tree, a data structure improves the B-tree, especially its configuration and capabilities. The new structure is definitely an alternative way to build our database and the related range search algorithm, which
can be implemented by recursive function, will also help us to generate correct query results with less time or space consumption.

**Overall Presentation:** Provide feedback on the overall presentation. How well were the ideas conveyed? Did you understand most of the talk (or 75%, 50%, 25%, 5%, 0%)? Were the ideas illustrated well (including the usage of both positive and negative examples)? Also comment on audience engagement. Did the speaker ask the audience questions, etc. (100 word limit)

All the important data structures and algorithms have been covered in the representation, and I can catch up 80%. They illustrated the properties of different data structures using list (the key points of R-tree, R* tree and Mobile object indexing etc.) and several pseudocode (specified the implementation of search and indexing algorithms). The power point looks nice and they described the algorithms as succinctly as possible. As to the questions part, they gave their thoughts on the comparison on time and space complexity between R-tree and B-tree, almost correct.

**Presentation Critique:** Did the speaker inspire you to want to learn more about the material covered? If you had to rate the presentation with either a check, check- or check+, how would you rate it? Explain.(50 word limit)

The R-tree and its variants need to be carefully studied. Also, their execution performance and storage consumption should be compared with all other data structures and respective algorithms. It seems that some coding practice can make us understand them better. The main ideas are displayed well in the representation, I rate it check+.