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## **„Game Technology“ Winter Semester 2014/2015**

### **Exercise 11**

For bonus points upload your solutions until **Friday the 23rd of January 2015, 11:40**

### **General Information**

- The exercises may be solved by teams of up to three people.
- The solutions have to be uploaded to the Git repositories assigned to the individual teams.
- **The submission date (for practical and theoretical tasks) is noted on top of each exercise sheet.**
- If you have questions about the exercises write a mail to [game-technology@kom.tu-darmstadt.de](mailto:game-technology@kom.tu-darmstadt.de) or use the forum at <https://www.fachschaft.informatik.tu-darmstadt.de/forum/viewforum.php?f=557>

## 1. Practical Tasks: Coarse Texture Streaming (5 Points)

Implement coarse texture streaming – load in higher resolution textures for close objects, kick out higher resolutions for far away objects. Try to keep the framerate high and steady.

<https://github.com/KTXSoftware/Exercise11.git> contains additional code to help you out. You can either copy the code changes manually or just pull them into your own repository using `git pull https://github.com/KTXSoftware/Exercise11.git`

## 2. Theoretical Tasks: Compression (5 Points)

### 2.1 Hardware

What makes it so important that texture compression algorithms are directly supported by the hardware?

### 2.2 Artifacts

ETC is a lossy texture compression algorithm. Describe what characteristics an image should have to make those losses clearly visible.

### 2.3 Tilemaps

Outline an algorithm to display tilemaps correctly in a 3D environment.