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TECHNISCHE
UNIVERSITÄT
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Game Technology
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Exercise 1

For bonus points upload your solutions until **Tuesday, October 24th, 2017, 13:29**

General Information

- The exercises may be solved by teams of up to three people. **Please form teams – if everyone turns in solutions individually, correction will take longer due to the large number of people**.
- The solutions have to be uploaded to the Git repositories assigned to the individual teams. To receive a group git repository, please write a mail to game-technology@kom.tu-darmstadt.de with your desired group name as well as the names and mail address of each member. **Send the mail until Friday, October 20th, 23:59**
- **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 or use the forum at https://www.fachschaft.informatik.tu-darmstadt.de/forum/viewforum.php?f=557

P1 Practical Tasks: Basic Setup (1 Point)

Create a Kore application which displays a simple geometric form by setting the colors of pixels. Simple examples are lines or circles. In the code, you will find a commented section into which you can draw your geometric form. Use the function setPixel(int x, int y, float red, float green, float blue) to set individual pixels.

Start out by cloning https://github.com/TUDGameTechnology/Exercise1.git recursively (git clone --recursive). For a more detailed explanation of git, please read http://wiki.ktxsoftware.com/Getting-Started-with-Git

Make sure it actually works and push it to your team's Git repository. **Please push into a branch "exercise1".**

You can find introductions to Kore and Git at http://wiki.ktxsoftware.com.

T1 Theoretical Tasks: Light and Sound (5 Points)

T1.1 Light Waves (1 point)

List the basic wave parameters of electromagnetic waves in the visible spectrum (aka light). See slide 26 of lecture 1 for details.

T1.2 Sound Waves (1 point)

List the basic wave parameters of sound waves.

T1.3 Gamma (2 points)

For this exercise, we are assuming a graphics program that adds together the pixels of two images. The two images are saved as bitmap files with gamma-corrected colors.

You sample the two following gamma-corrected color values from the bitmaps (in hexadecimal notation, 8 bits per color):

C1: #0066AA
C2: #AB1234

Add the two color values in linear color space and provide an output color that can be sent to a common monitor.

T1.4 Monocular cues (1 point)

On slide 39, you can find an overview of monocular cues. Choose one of the monocular cues not presented in the lecture, research it and explain it in your own words.