Sprint Retrospective Document

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Sprint 9 summary

Item ID (from the previous retrospect ive doc)	Workpackage ID (from the Kick-off doc)	Status	Group's comments
13	WP4	In Progress	We are still implementing the creation of heap data structure.
19	WP4	In Progress	We are dealing with the errors we encountered in compute shader functions.
22	WP5	Complete	We have completed the partial diffuse global illumination implementation.
23	WP5	In Progress	Implementation of data transfer to GPU about the area light is started.
24	WP5	In Progress	Transferring CPU global illumination to GPU shaders is started.
25	WP5	In Progress	Masking algorithm will be started once we have a working GPU based global illumination model.
26	WP6	Complete	A sampling method (uniform random) is choosen and implemented in CPU.
27	WP7	Complete	An offline render (Mitsuba) is selected and will be compared with our ray tracer.

Demo Day plan

Item ID	Workpackage ID (from the Kick-off doc)	Description	Status
13	WP4	Transfering the BVH structure to GPU memory as a heap data structure.	Leftover from Sprint7
19	WP4	Implementation of BVH intersection in Unity compute shaders.	Leftover from Sprint8
23	WP5	Area light implementation in Unity compute shaders.	Leftover from Sprint9
24	WP5	Global Illumination implementation in Unity compute shaders.	Leftover from Sprint9
25	WP5	Implementation of Masking Algorithm in Unity compute shader.	Leftover from Sprint9
26	WP5	Multisampling implementation in Unity Compute Shaders.	New
27	WP7	Implementation of camera controller to compare with offline renderers.	New
28	WP7	Performance test and possible improvements on GPU ray tracer.	New

Overall progress

	Sprint 1	Sprint 2	Sprint 3	Sprint 4	Sprint 5	Sprint 6	Sprint 7	Sprint 8	Sprint 9
MF1	0%	10%	10%	50%	50%	60%	65%	65%	70%

MF2	0%	50%	70%	70%	70%	70%	80%	80%	80%
MF3	0%	0%	0%	0%	0%	0%	0%	0%	0%
MF4	0%	0%	0%	0%	0%	0%	0%	0%	0%
MF5	0%	0%	0%	30%	35%	50%	65%	75%	80%
MF6	0%	0%	0%	0%	0%	0%	100%	100%	100%
MF7	0%	0%	0%	0%	0%	0%	40%	70%	75%
MF8	0%	0%	0%	0%	0%	0%	0%	0%	30%
MF9	0%	0%	0%	0%	0%	0%	20%	30%	60%
MF10	0%	0%	10%	90%	90%	90%	90%	90%	95%
MF11	0%	10%	20%	30%	30%	30%	40%	50%	60%

Discussion with Supervisor

With our supervisors suggestion, we will use our implementation to generate four different renders and compare them with one another. Two of these renders will include global illumination (one is partial "global illumination" another is full).