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Could ray-tracing be used to develop graphics hardware benchmarking tools which provide the user with more useful insight?

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1 Introduction

As technological advances continue to grow year-on-year in both hardware and software, existing benchmarking tools fall behind and are slow to adapt to support or take full advantage of the advances companies such as Intel, AMD, and NVIDIA make.

This results in hardware or software no longer being supported by benchmarking tools resulting in hardware instability with existing benchmarks or the benchmark no longer working properly in newer operating systems.

This project looked into how existing graphics benchmarks can be improved by taking what people dislike about the existing benchmarking tools and then building upon them.

2 Project Aims

Aim 1: Discover existing computer benchmarking tools and conclude where they could be improved.

Aim 2: Discover existing tools and technologies used by games and new and emerging technologies gaining traction.

Aim 3: Design and develop a new hardware benchmarking tool based on research carried out in the first two aims.

Aim 4: Review and survey of proposed tool to gather feedback.

3 Solution Primary Research Results

The system's design is easy to understand and use.

Large majority of the users liked the benchmark, with that majority willing to recommend the benchmark providing small issues are fixed.

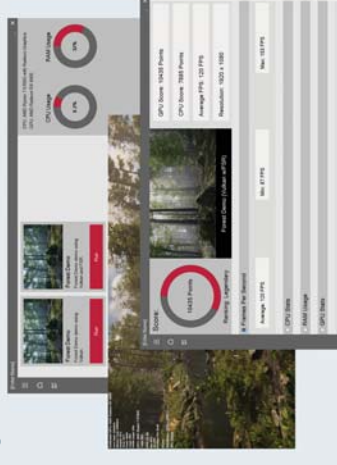
17 out of 20 found the benchmark data helpful.

Users encountered an issue with crashing on the first launch of the Unity demo.

7. Did you find the benchmark data at the end helpful?



4 The Final Solution



5 Conclusions

One conclusion is that there is room for possible improvement within the benchmarking software industry.

Another conclusion that can be drawn is that the new system is a marginal success.

6 Recommendations

Create a fully custom Unity scene rather than relying on assets from the asset store. Use more primary research methods to gather more useful information.

Making the final solution provide a portable HTML file that is time-stamped instead of just a text file.

Adding more test runs to find further bottlenecks and a dedicated CPU benchmark run.