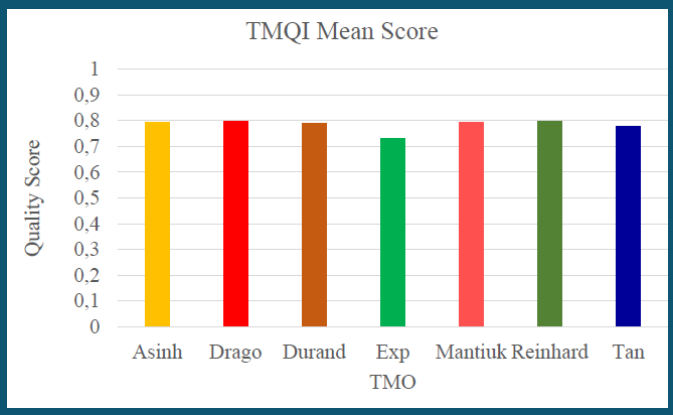
Diploma Thesis

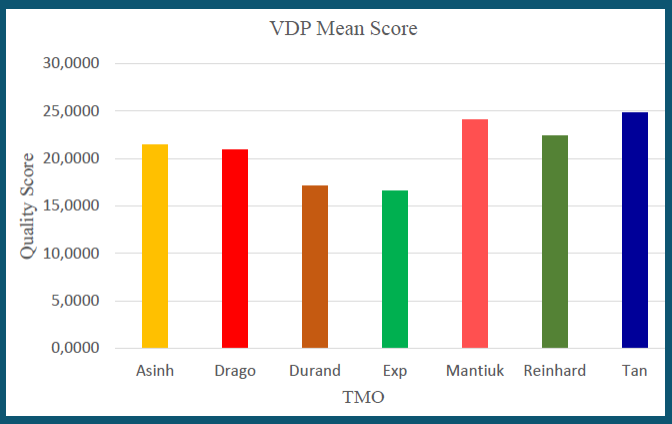
HDR Images Depiction: Correlation of TMOs to Quality Metrics

- *High-Dynamic-Range* imaging offers a radically new approach of representing colors in digital images and video. Instead of using the range of colors produced by a given display device, HDRI methods manipulate and store all colors and brightness levels visible to the human eye.
- HDR images can not be directly reproduced in conventional display devices with limited dynamic range. To solve that problem and be able to display HDR images in conventional display devices, a process named *Tone Mapping* must be applied to the HDR images.
- Tone Mapping is a technique used to map one set of colors to another, to approximate the appearance of HDR image in a SDR that has a more limited dynamic range.
- *Tone Mapping Operators* are the algorithms that compress the dynamic range of HDR images.

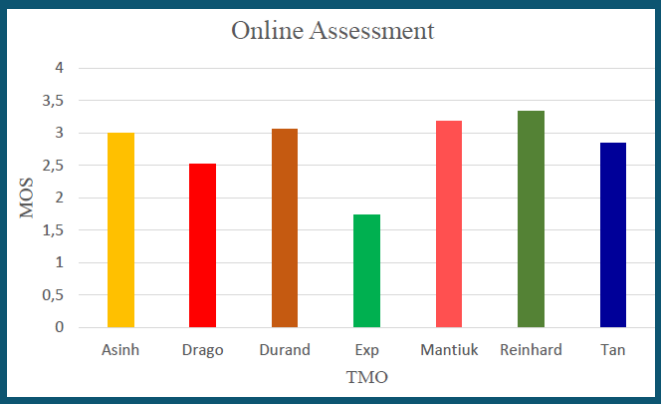
❖ The aim of that thesis is to study the performance of some TMOs, implement two new TMOs using tan and $sinh^{-1}$ functions and examine the correlation of these TMOs to the quality of the tone mapped images in a subjective and an objective way.

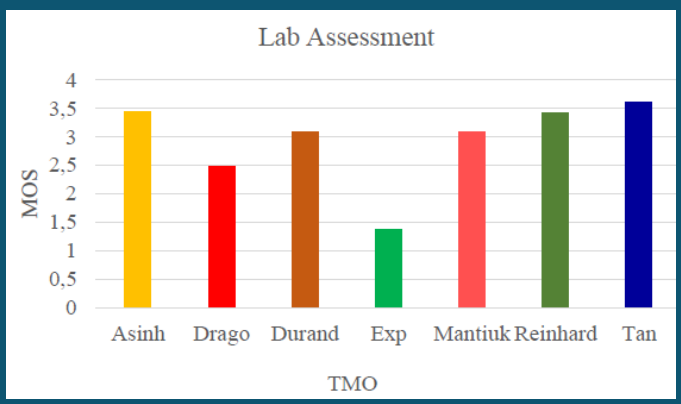
❖ Assessment results are shown in the charts.





Objective Assessment





Subjective Assessment

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