



Department of Electronic and Telecommunication Engineering  
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## Assignment I

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## Question 1

In the given intensity transformation, pixel values lie within the range 50 to 150 have been increased while other pixels remain same. Above pixel values of a gray scale image generally represent gray colour, hence we can observe that gray colour pixels have been transformed into near white in the output image. Figure 1 shows the original image, intensity transformation function and output image respectively.

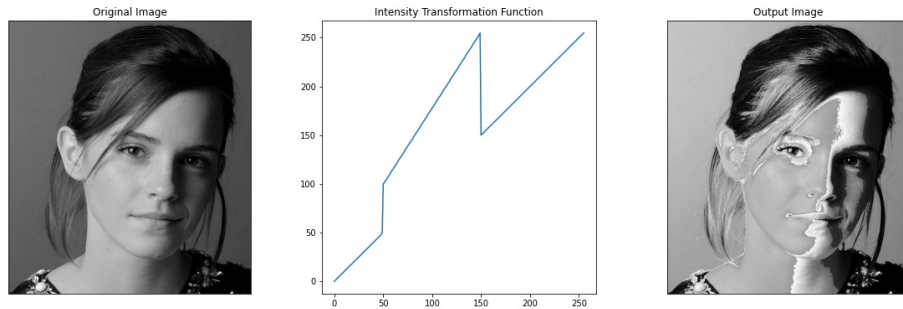


Figure 1: Question 1

## Question 2

- (a) In this part the white matter of brain proton density image has been accentuated. Applied intensity transformation is shown in figure 2. Since both the white matter and gray matter [1] have closer pixel values it is very important to select the correct cut-off value. Here 175 is selected as cut-off value and range between 150 and 200 has transformed linearly while others are shifted to pure white or black.

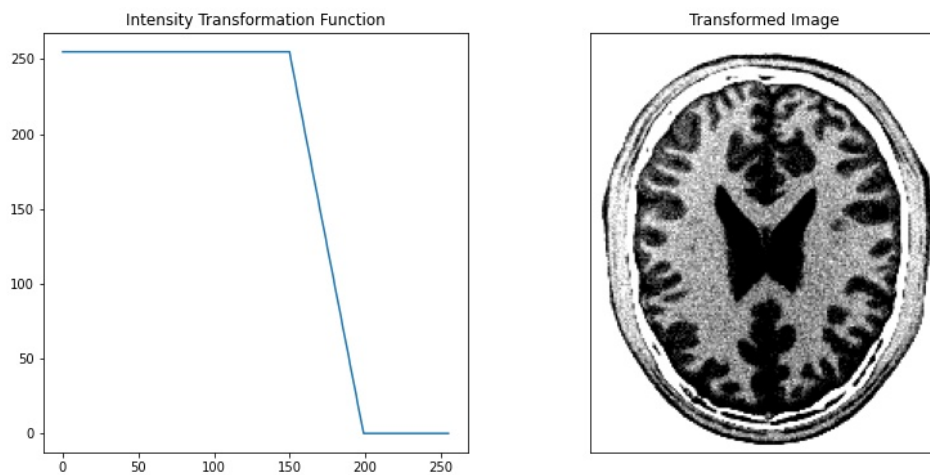


Figure 2: Question 2-a

(b)

## References

- [1] S. Team, “Grey matter vs white matter in the brain,” June 07, 2020. Accessed on: Feb. 14, 2022. [Online]. Available: <https://www.spinalcord.com/blog/gray-matter-vs-white-matter-in-the-brain>.