Assignment 2

Name Surname
Matriculation number

Inpainting

1. Write the Primal-Dual formulation for this problem..
2. Write the explicit expressions for the Primal-Dual steps $y^{n+1} = \text{prox}_{\sigma F^*}(y^n + \sigma K \bar{x}^n)$ and $x^{n+1} = \text{prox}_{\tau G}(x^n - \tau K^* y^{n+1})$.
3. **Implement primal-dual method for inpainting.** In this section you should:
   - Show some images, as the the primal-dual method progresses iteration by iteration. Display the initial and the final image and 3 more images in between.
4. **Find optimal λ.** In this section you should:
   - Display the SSD vs. λ graph.
   - Describe the effect of λ with respect to the SSD between the ground truth and the solution image.
5. **Conclusions.** Discuss the two methods. In this section you should:
   - Discuss the advantages and disadvantages of each method.