IMAGE RESIZER : SEAM CARVING

Problem Statement : Apply seam carving content aware image-resizing algorithm on a given image. Take the height and width (in pixels) of the output image as inputs from the user.

What is Seam Carving?
- Seam-carving is a content-aware image resizing technique where the image is reduced in size by one pixel of height (or width) at a time.
- A vertical seam in an image is a path of pixels connected from the top to the bottom with one pixel in each row.
- A horizontal seam is a path of pixels connected from the left to the right with one pixel in each column.

Program Flow:
- Extract individual pixel's RGB values from the sample image and load the RGB values in a 3D matrix (Height x Width x 3).
- Algorithm:
  - Energy Calculation: Each pixel has some RGB values. Calculate energy for each pixel. For ex.- You can use a dual-gradient energy function but you are free to use any energy function of your choice.
  - Seam Identification: Identify the lowest energy seam.
  - Seam Removal: Remove the lowest energy seam.
- Generate sample image output using the RGB values for resized image (New_Height x New_Width x 3).

Input Image

Output Image

Input Image

Output Image