Project

On

Rotate the image by an angle through image processing

In this project we have to input an image, input an angle, rotate the image by the angle given, display the image with the help of OpenCV with Visual Studio.

OpenCV

OpenCV is a library which is open source and which allow you to perform computer vision.

Computer vision

It is used for extracting useful information from image, videos, text.

Platform used

In this project the platform which is used is Visual Studio 2019.

Installation process or setup of OpenCV with Visual Studio 2019(C++)

- First we have to install OpenCV4.1.2 version from its git repository.
- After installation we have to extract the OpenCV4.1.2 file int the drive.
- Now we have to set the Environment variable. So, we have to go to the extracted file path>OpenCV>build>X64>vc15>bin and then copy the address and go to edit the System Environment Variable we have to

paste address.

- Now go to Official site of Visual Studio, then download Visual Studio Community 2019 version. After that install and open Visual Studio.
- After opening Visual Studio. Click the check box of Desktop development with C++ and then go to download all, then install option. After that restart your PC.
- Now, we have to set our Visual Studio, then go to create a new project, then go for empty project. After clicking to next button. We have to give the Project name, Solution name and the Location where we have to store project then go for create button.
- After this we have to change debugger to X64 configuration. Then we have to click on Project>Add new file>New item and then change the name of your project.
- After that go to project then click project properties then go to VC++ directories, after that give the path address of project to include directory and in library directory give the lib address of project.
- After that go to Linker, go to additional depedencies then copy and paste object file library in it, then click ok button and Visual Studio is all set.

Methods, libraries and function used

- The header file which is used in this project is #include<opencv2/opencv.hpp> - it is going to include all necessary header file for your application.
- namespace cv is used to include all the necessary function and classes that you will use in application.
- **Imread()**

  This function is used to load or read particular image for us.

Syntax: imread(“filename”, int flag)

This imread function will store in an object type Mat.

- **namedWindow()**

  This function is used to create a window.

  Syntax: namedWindow(window name, int flag)

- **Imshow()**

  This function is used to display the image.

- **destroyWindow()**

  This function is used to destroy window.

- **waitKey()**

  This function is used to stop execution of a program until you press a key.

Output process

For the output first we have to give input (image file) to the project directory. after that we have to click on local window debugger to run the program and output will be shown as rotated image.