Task 1 - Supply Bot

Task 1.1 - Angle Alpha

Introduction

The objective of this task is to calculate the angle (in degrees) between two points (the red dot and the green dot) on inner black ring

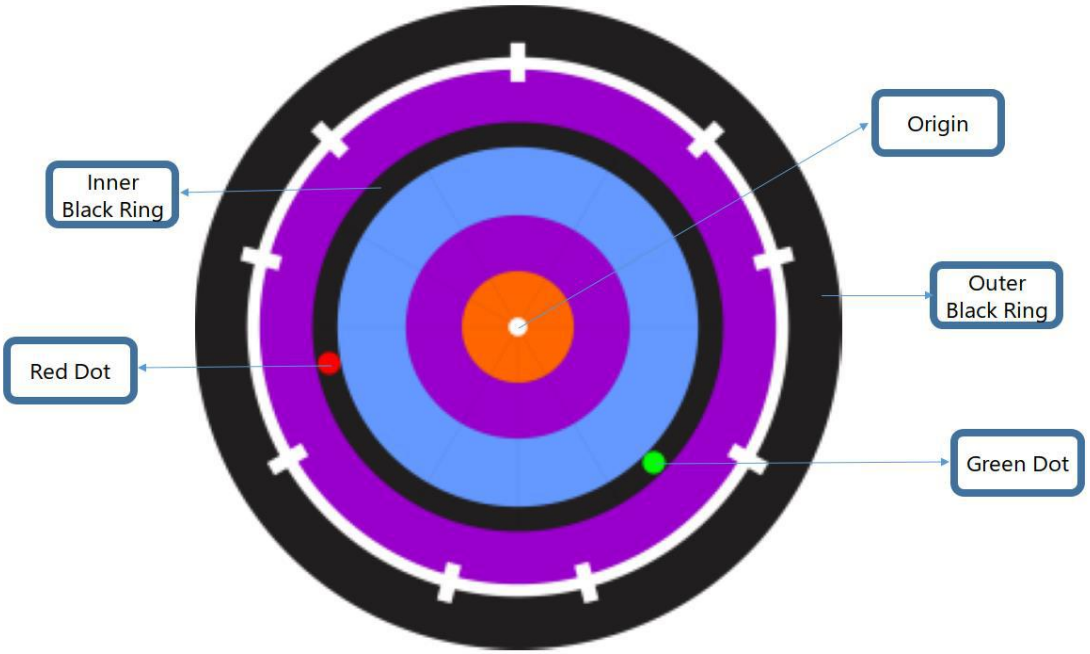
Problem Description

Remember that all file and folder paths in your program should be relative. The images to work on are present in **"Images"** folder. All your output files must be generated in **"Generated"** folder. Write your code in the placeholder file, *"main.py"* which can be found in **"Codes"** folder.

The images present in the **"Images"** folder are:

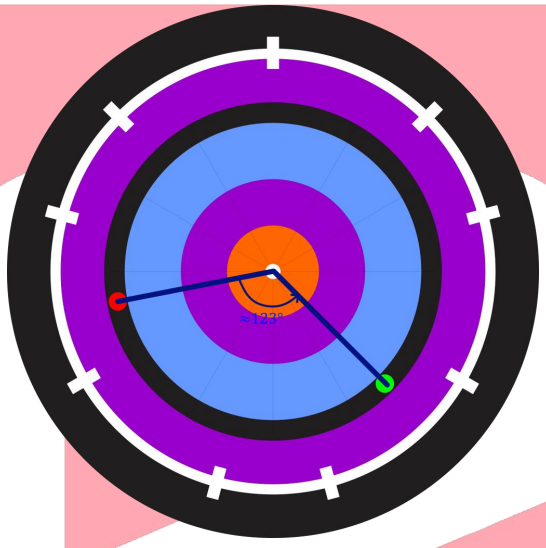
- *image_1.png*
- *image_2.png*
- *image_3.png*

Consider the following image:



All Input Images will be of similar format with the difference being the positions of the red and green dots on the inner black ring. As depicted, note that there exists a centre called ***"Origin"*** which is the centre of all the concentric circles located within the innermost white circle.

As we can see, the angle that the red and green dots make with respect to the origin is $\approx 123°$. A pictorial representation of the same is as follows:



Given this idea, your team has to write the logic in *"main.py"*, your logic is expected to calculate such angles for all the three images ***(image_1.png, image_2.png, image_3.png)*** present in the **"Images"** folder upto 2 decimal places accuracy.

Output

You should generate a ***"angles.csv"*** file (comma separated values) in the **"Generated"** folder with the following format. The i^{th} row in the ***"angles.csv"*** file will be angle between red and green dots in ***"image_i.png"*** image file. Supposedly, if the angle between red and green dot is $\approx 10°, 20°, 30°$ in the files *"image_1.png", "image_2.png", image_3.png"* respectively, the contents of angles.csv file must be

Image Name	Angle
image_1.png	10.00
image_2.png	20.00
image_3.png	30.00

NOTE: Error to a few degrees will be tolerated and will lead to no deduction of points. The tolerance range, however, will be undisclosed.

Thus only the ***"angles.csv"*** is to be submitted in the **Generated** folder of **Task1.1**.

Warnings

1. **IMPORTANT**: The code and documents you submit should be YOUR work in YOUR WORDS. To avoid any copyright violations, you must NOT copy phrases or code snippets directly from manuals or web.
2. The team should NOT mail or upload the document, code or folders anywhere else, except on the portal.
3. Teams failing to submit the document, code or folders by the deadline will lose the marks for this task.
4. e-Yantra WILL NOT entertain any request for extension of deadline for uploading the task.
5. e-Yantra holds complete discretion to disqualify a team if any foul play is suspected.