1. Introduction

1.1 Purpose

The objective of this document is to describe the requirements and verification for the Diabetic Retinopathy application. Diabetic Retinopathy application is intended to predict the status of Diabetic Retinopathy based on fundus photography images capturing rear of an eye.

1.2 Audience

The intended users of this document are developers, test engineers and project leads/managers, management of CARL ZEISS team.

1.3 Scope

The scope of this document is capture the requirements and verification of Diabetic Retinopathy application. The specification and requirements are derived from the Task AI application requirement and verification engineer document.

2. General description

Diabetic Retinopathy application will be software application requires python and its related packages, list of packages are in the requirements.txt file.

2.1 Product Perspective and Function

The main purpose of the Diabetic Retinopathy application to detect diabetic retinopathy by uploading the fundus photography images using html page and predict the class of Diabetic Retinopathy. The result or class of Diabetic Retinopathy is also shown on the html page.

2.2 Acceptance Criteria

Dynamic test case are done on the application code to check the behaviour of the application.

2.3 Assumptions and risk:

- Assuming only fundus photography images will be uploaded to the html page, if any other images are uploaded the results will be display results but it will not be informative from the application perspective.

- Most application also use python tool it better to isolate dependencies using Docker image to not have any dependencies with other python tool application.

3. Functional requirements

Diabetic Retinopathy application requires python programming tool (packages) and web browser to run the application.
DiabeticRetinopathy folder structure:

```
DiabeticRetinopathy
|--src
    |-template/index.html and results.html
    |-Model/densenet_.h5
    |-app.py
|-test/test_app.py
|-requirements.txt
|-pytest.ini
|-fakeimage1.png
```

4. Test requirements

All test cases are in the test_app.py file.