

646-21 Visual Acuity Screening Test User Guide

December 2022

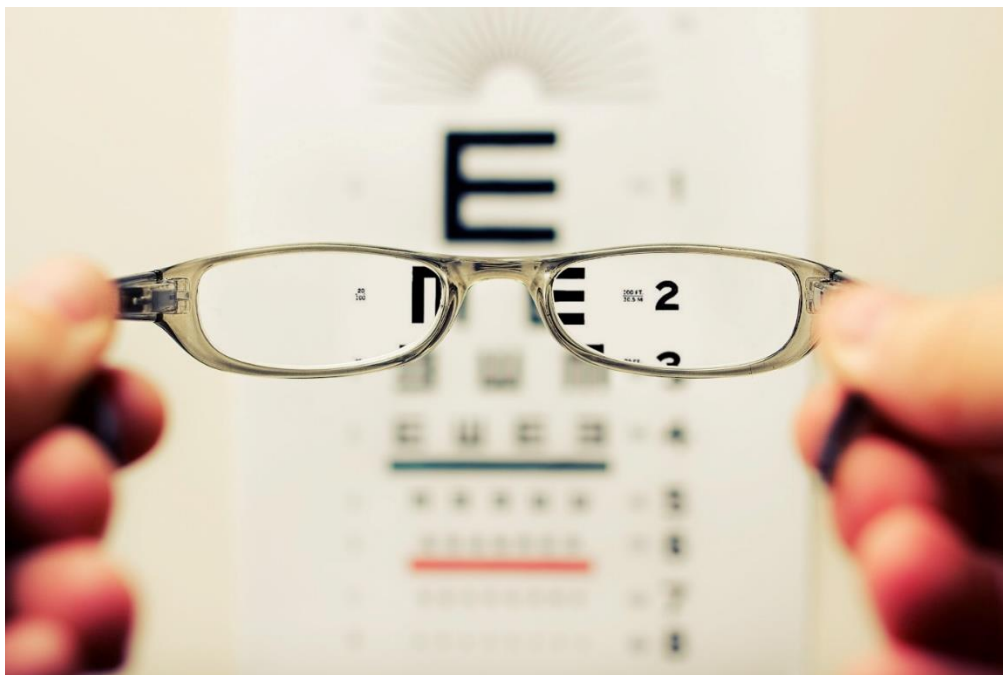


Photo by [David Travis](#) on [Unsplash](#)

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1. Description:

A. Project




Visual Acuity Screening Tool is an application designed to perform vision test digitally.

There is a main screen where a stimulus (a Landolt C) appears in a defined angle and position, and a second screen used as a controller to select the desired answer with four buttons.

The results must be stored in a database and the application must have the possibility to run offline.

B. Developer Team

The team behind this project is composed of 4 students from the HES-SO:

		
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C. Versioning:

Version	Who	When	What
1.00	Flament Quentin	15.10.2022	Creating the template
2.00	Flament Quentin	08.12.2022	Explanation of using
3.00	Flament Quentin	10.12.2022	Finalization
4.00	Hagenbuch Matthieu	15.12.2022	Refactor

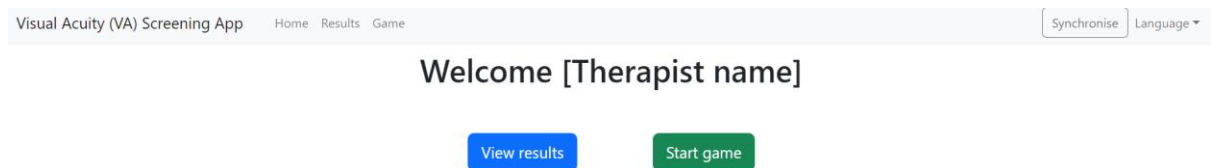
2. Installation:

The application is a web application available offline, but we must load it online the first time.

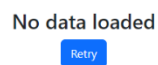
The data are saved in the local storage, and when we have an available connection again, we can synchronize the local storage and the database with a button.

3. Use:

First you can go to the following link <https://magical-klepon-7470b6.netlify.app/> to enter to our website:



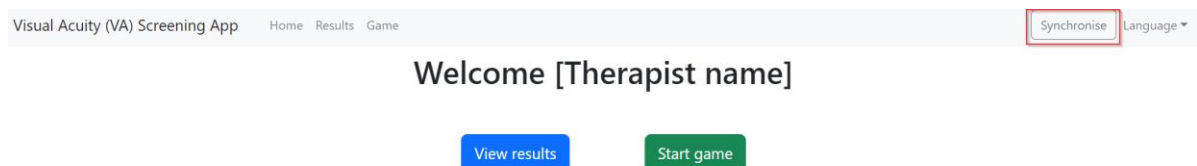
If there is a problem for the first connection in download and store in local storage you have to reload the page with a good connection otherwise an error page appears.



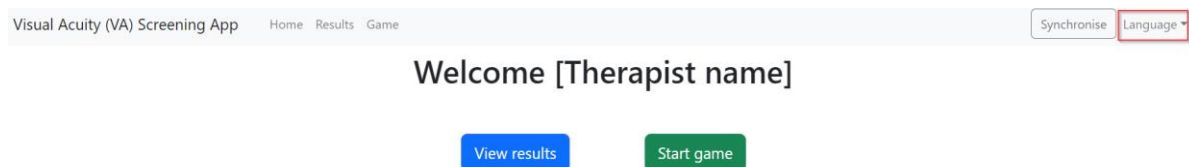
You have two main buttons:

- [View Result] you can see all the results in database and/or not synchronized in database
- [Start game] you can start the game and do the visual acuity test

The synchronize button is used to synchronize all the finished test into the database when there is an internet connection



The Language button is not yet available but it's for change the language of the site



View Results

In the View Result there is all the results in the database and the results from your local storage

You can:

- Filter each Class, School, Name
- Export all filtered data in a CSV file
- Synchronize your results if you have an internet connection
 - If there is internet you have a success pop-up
 - If there is not internet you have a failure pop-up

All results

 School: Class: Fullname: [Export results](#)

School	Class	Fullname	DOB	Date	Glasses	Understood	Rounds	vaRe	vaLe	Synchronised
HES	607_7	Murilo Sousa Melo	1991-05-28	2022-12-04 8:47 pm	true	true	1	0.98	0.98	true
HES	1101	Laura Almeida Rocha	2016-11-28	2022-12-04 9:40 pm	false	true	1	0.63	0.63	true
Harvard	202	Diogo Barbosa Alves	2022-11-18	2022-12-04 8:47 pm	true	true	1	0.98	0.98	true

All filtered results:

All results

 School: Class: Fullname: [Export results](#)

School	Class	Fullname	DOB	Date	Glasses	Understood	Rounds	vaRe	vaLe	Synchronised
HES	1101	Laura Almeida Rocha	2016-11-28	2022-12-04 9:40 pm	false	true	1	0.63	0.63	true

Exported filtered results:

	A	B	C	D	E	F	G	H	I	J	K
1	schoolName	class	fullName	dob	dateTest	correction	comprehensive	rounds	vaRe	vaLe	synchronised
2	HES	1101	Laura Almeida	28/11/2016	04/12/2022 21:40	false	true	1	0.63	0.63	true
3											

Start game

In Start game you can select a patient from different methods:

- One of the imported database patients from school roster
- You can import a school list with an Excel file
- You can add a patient manually

Patient from school roster

You can filter for searching a patient and click on it, and it import the selection

Before filtered school roster:

[Add new student](#) or Import Excel file: [Choose File](#) No file chosen

Students

 School: Class: Fullname:

Students from school roster

Fullname	DOB	Class	School	Date	vaRe	vaLe
Arthur Correia Barros	1991-11-11	11A	HES	-	-	-
Diogo Barbosa Alves	2022-11-18	202	Harvard	2022-12-04 8:47 pm	0.98	0.98
Laura Almeida Rocha	2016-11-28	1101	HES	2022-12-04 9:40 pm	0.63	0.63
Murilo Sousa Melo	1991-05-28	607_7	HES	2022-12-04 8:47 pm	0.98	0.98
Vítór Correia Martins	2015-11-28	1101	HES	-	-	-

After filter applied:

Visual Acuity (VA) Screening App Home Results Game Synchronise Language ▼

Add new student or Import Excel file: Choose File No file chosen

Students

School: Class: Fullname:

Students from school roster

Fullname	DOB	Class	School	Date	vaRe	vaLe
Arthur Correia Barros	1991-11-11	11A	HES	-	-	-
Laura Almeida Rocha	2016-11-28	1101	HES	2022-12-04 9:40 pm	0.63	0.63
Vitór Correia Martins	2015-11-28	1101	HES	-	-	-

And select your choice

Visual Acuity (VA) Screening App Home Results Game Synchronise Language ▼

Add new student or Import Excel file: Choose File No file chosen

Students

School: Class: Fullname:

Students from school roster

Fullname	DOB	Class	School	Date	vaRe	vaLe
Arthur Correia Barros	1991-11-11	11A	HES	-	-	-
Laura Almeida Rocha	2016-11-28	1101	HES	2022-12-04 9:40 pm	0.63	0.63
Vitór Correia Martins	2015-11-28	1101	HES	-	-	-

Visual Acuity (VA) Screening App Home Results Game Synchronise Language ▼

Ready?

School
HES

Full name
Laura Almeida Rocha

Class
1101

Date of birth
11/28/2016

Back to student list Let's play

Patient from Excel file

You must use only this model and only the red identifications can be modified

If you use another one or modify something else all the importation could be false



PREFEITURA
DA CIDADE DO RIO DE JANEIRO
Secretaria Municipal de Educação

Relação de alunos por turma

Designação	Denominação	Série	Turma	Ano Letivo
E SUBE/CRE(11.20.025)	EM ALBERTO DE OLIVEIRA	3º ano	1301	2022

Chamada	Código	Nome	DtNascimento	Sexo	Repet	Depend	Avaliação	Cor
1	2018107630284	test	28/10/2015	F	N		-	PA
2	2018107630284	test	28/10/2016	M	N		-	PA
3	2018107630284	test	28/10/2017	M	N		-	PA
4	2018107630284	test	28/10/2018	M	N		-	ND
5	2018107630284	test	28/10/2019	M	N		-	PA
6	2018107630284	test	28/10/2020	F	N		-	PA
7	2018107630284	test	28/10/2021	F	N		-	PA
8	2018107630284	test	28/10/2022	M	N		-	BR
9	2018107630284	test	28/10/2023	M	N		-	PA
10	2018107630284	test	28/10/2024	M	N		-	PA
11	2018107630284	test	28/10/2025	F	N		-	PR
12	2018107630284	test	28/10/2026	F	N		-	BR
13	2018107630284	test	28/10/2027	F	N		-	PA
14	2018107630284	test	28/10/2028	F	N		-	BR
16	2018107630284	test	28/10/2029	M	N		-	PA
17	2018107630284	test	28/10/2030	M	N		-	PA
18	2018107630284	test	28/10/2031	F	N		-	BR
20	2018107630284	test	28/10/2032	M	N		-	BR

Visual Acuity (VA) Screening App

Home Results Game

Synchronise

Language ▾

Add new student

or Import Excel file :

Choose File

No file chosen

Students

School: Class : Fullname :

Students from school roster

Fullname	DOB	Class	School	Date	vaRe	vaLe
Arthur Correia Barros	1991-11-11	11A	HES	-	-	-
Diogo Barbosa Alves	2022-11-18	202	Harvard	2022-12-04 8:47 pm	0.98	0.98
Laura Almeida Rocha	2016-11-28	1101	HES	2022-12-04 9:40 pm	0.63	0.63
Murilo Sousa Melo	1991-05-28	607_7	HES	2022-12-04 8:47 pm	0.98	0.98
Vitór Correia Martins	2015-11-28	1101	HES	-	-	-

And you can download your class list from the Excel file.

Visual Acuity (VA) Screening App Home Results Game Synchronise Language ▾

Add new student or Import Excel file : Choose File No file chosen

Students

School: Class: Fullname:

Students from school roster

Fullname	DOB	Class	School	Date	vaRe	vaLe
Arthur Correia Barros	1991-11-11	11A	HES	-	-	-
Diogo Barbosa Alves	2022-11-18	202	Harvard	2022-12-04 8:47 pm	0.98	0.98
Laura Almeida Rocha	2016-11-28	1101	HES	2022-12-04 9:40 pm	0.63	0.63
Murilo Sousa Melo	1991-05-28	607_7	HES	2022-12-04 8:47 pm	0.98	0.98
Vitor Correia Martins	2015-11-28	1101	HES	-	-	-

New students from this session

Fullname	DOB	Class	School	Date	vaRe	vaLe
Test 1	2015-11-28	1101	EM ALBERTO DE OLIVEIRA	-	-	-
Test 2	2016-11-28	1101	EM ALBERTO DE OLIVEIRA	-	-	-
Test 3	2017-11-28	1101	EM ALBERTO DE OLIVEIRA	-	-	-
Test 4	2018-11-28	1101	EM ALBERTO DE OLIVEIRA	-	-	-
Test 5	2019-11-28	1101	EM ALBERTO DE OLIVEIRA	-	-	-

The imported list is in the second part of the page. It can be filtered to find a patient if needed.

Add manually patient

If you have no class list and no patient in the school roster you can add a new patient for a test.

All parameters are mandatory. If you forgot one of them, you can't go further.

Visual Acuity (VA) Screening App Home Results Game Synchronise Language ▾

Back to student list

School

Full name

Please fill out this field.

Date of birth

mm/dd/yyyy

Let's play

When all the field are completed, you can start the test.

Lets's Play

When the patient has been selected or added you can start the test by pressing Let's play.

Visual Acuity (VA) Screening App Home Results Game Synchronise Language ▾

New student

School
HES

Full name
test

Class
607_3

Date of birth
12/10/2022

Back to student list Let's play

A Pop-up appears and ask you if the patient is wearing glasses for the test.

HES

Full name
test

Class
607_3

Date of birth
12/10/2022

Correction ✕

Is the patient wearing prescription glasses now ?

Yes No

When the response is saved the Visual Acuity Test start.

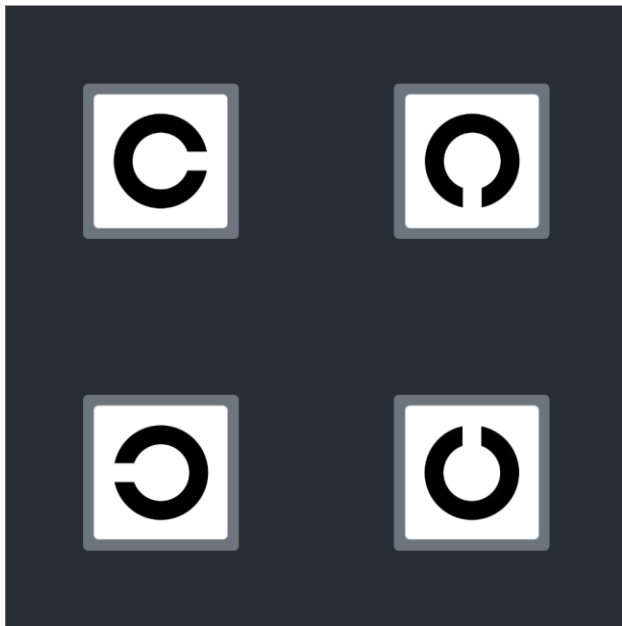
Visual Acuity Test

The test is implemented in two screens:

- Controller Screen
- Visual Test Screen

You can use the visual test screen in the computer and the controller screen with an external screen (tactile or not) connected by cable (HDMI, USB-C) with the patient standing 1.5m away from the Visual Test Screen.

Controller Screen



The screen is inactivated at the beginning of the test for 1 second.

For a valid test you must click twice in 200 ms for validate the response.

The selected C is activated and colored in green and inactivated 200ms when the response is validated.

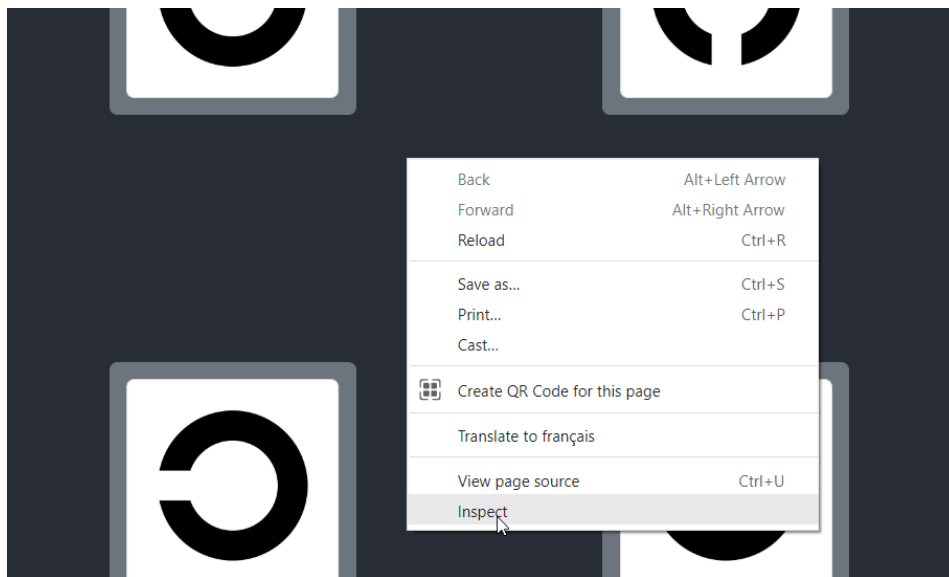


The response is not valid if:

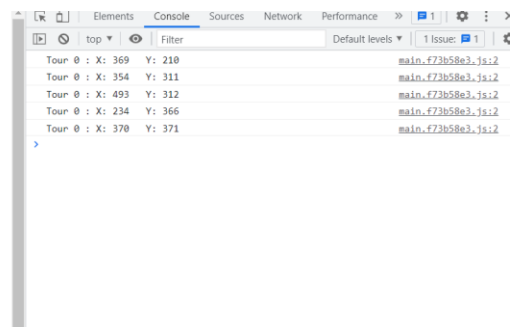
- You click for the second click after 200 ms
- If you click for the second click outside of the first C selection

Information about all click on the screen are printed in the console. You can have access easily by following procedure:

- Right click on the page and go in "inspect"

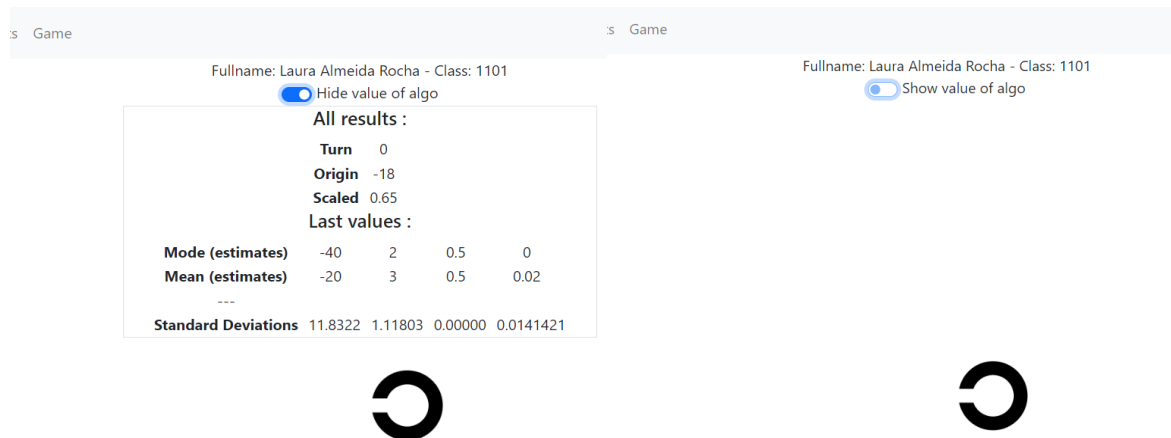


- Go into console and you can see all information about click and at which tour it's for statistic or other.



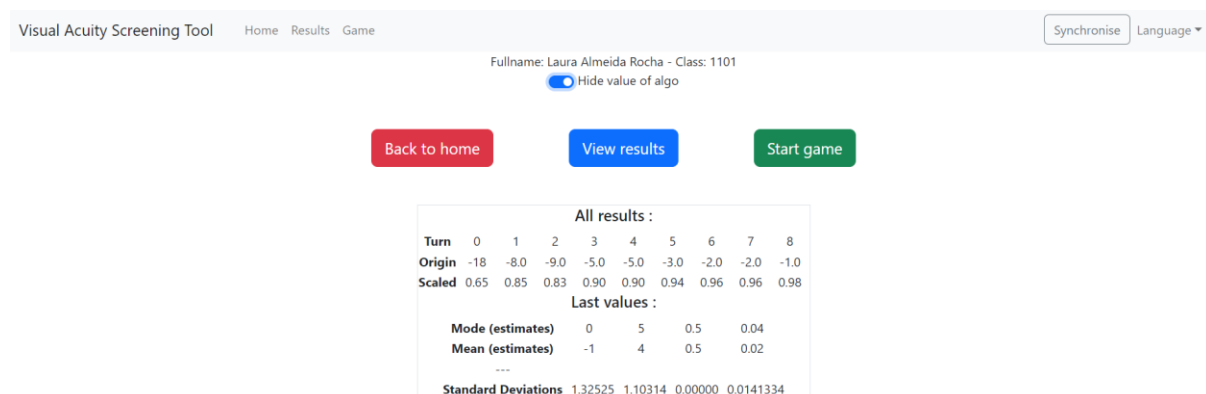
Visual Test Screen

In the Visual Test Screen there are the patient information, temporarily all the data of results to test the algorithm (removable with the toggle switch button) and the C with size generated by the algorithm depending of the previous answer



At the end of the test, you can return to the home page, view results or start a new game and choose a new patient.

Temporarily there are all the result displayed to test the JSQuest+ algorithm



Limitation

- All the tests are assigned to Katia Therapist because therapists can't connect yet.
- It is not possible to add a student to an unsynchronized school.
- It is not possible to change the language yet.
- It is not possible to edit a student, a school or a test except in the database.
- There is no duplicate check when importing and adding students.