



Sign Language Learning Material for Undergraduate Students

Brazilian Sign Language Glossary

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Schedule

- Deaf Education Timeline
- Problem
- Methodology
- Results
- Conclusions
- Future Work

Deaf Education Timeline (World)

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Thomas Hopkins Gallaudet (1787 - 1851 CE)

Traveled to France to learn the method developed by Charles-Michel de l'Épée. He is the founder of the first school for deaf people in the United States of America.



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The son of Thomas Hopkins Gallaudet and founder of the first college for deaf people in the world, the Gallaudet University.



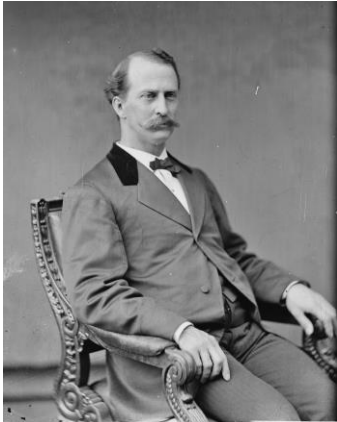
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Teacher Education Undergraduate Courses in Brazil

- Biology
- Chemistry
- Dancing
- Geography
- History
- Languages
- Linguistics
- Literature
- Mathematics
- Music
- Pedagogy
- Philosophy
- Physical Education
- Physics
- Sociology
- Visual Arts

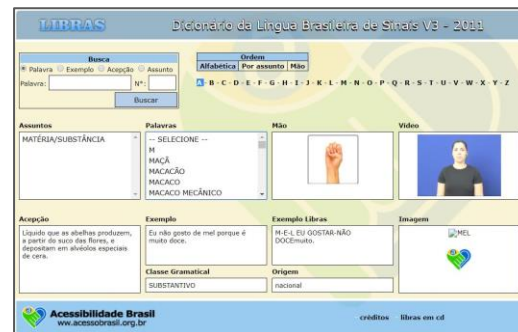
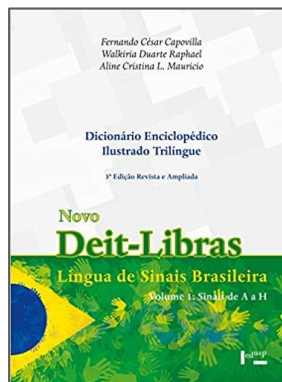
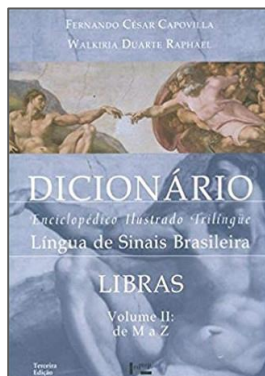
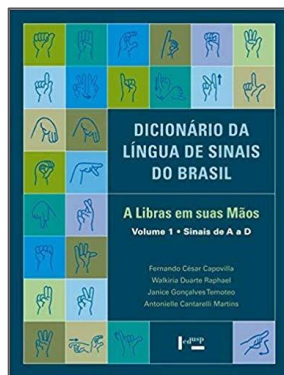
How to design a good learning material for SL?

- Visual;
- Organized;
- Allow distance learning and self-learning.

How to develop a learning material?



Linguistic Research



Native Speaker

- Must be a deaf person;
- Must be a fluent signer.

Recording of Signs

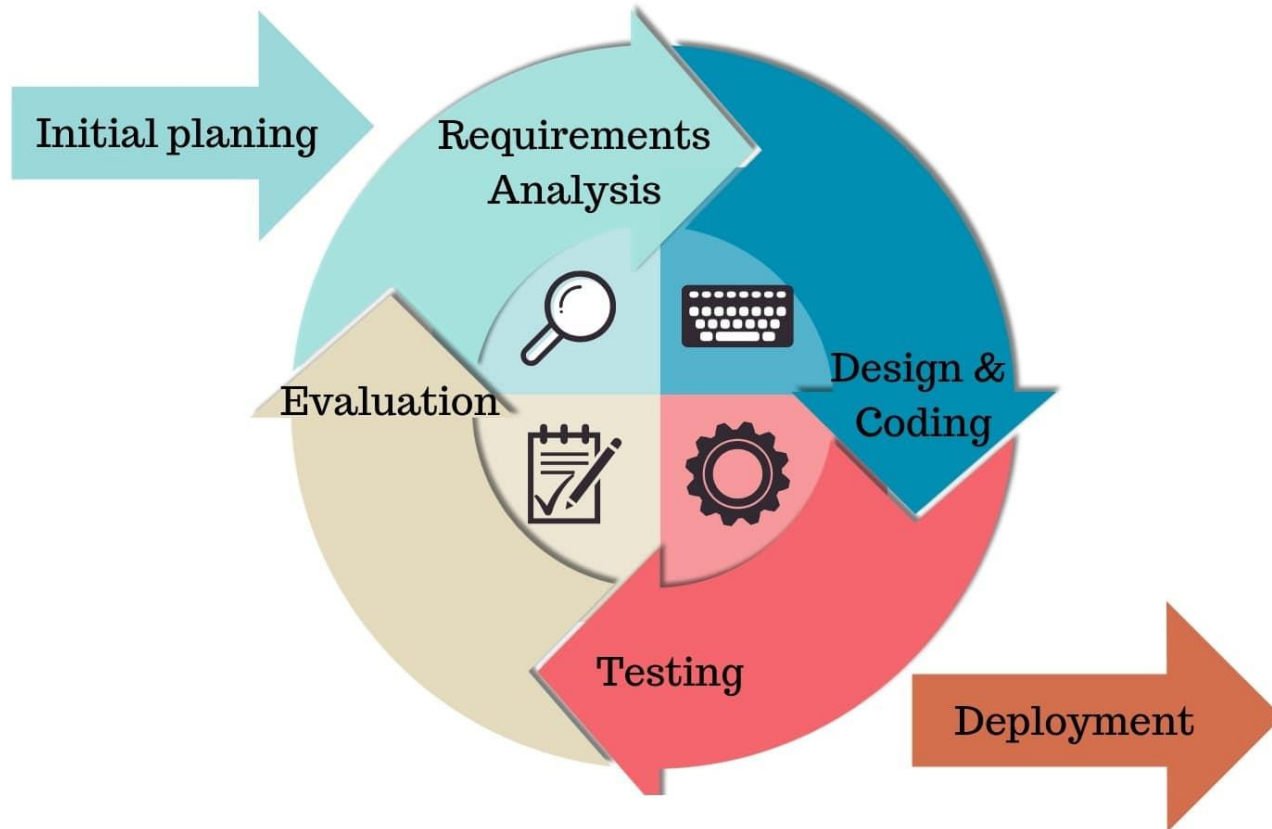


System Development



Research Group of Assistive Technologies for the
Deaf (TAS)

System Development (Development Model)



System Development (Requirements)

Functional Requirements

- Management of administrators, semantic categories and signs;
- The searchability of signs by name, first letters of name, or semantic category.

System Development (Requirements)

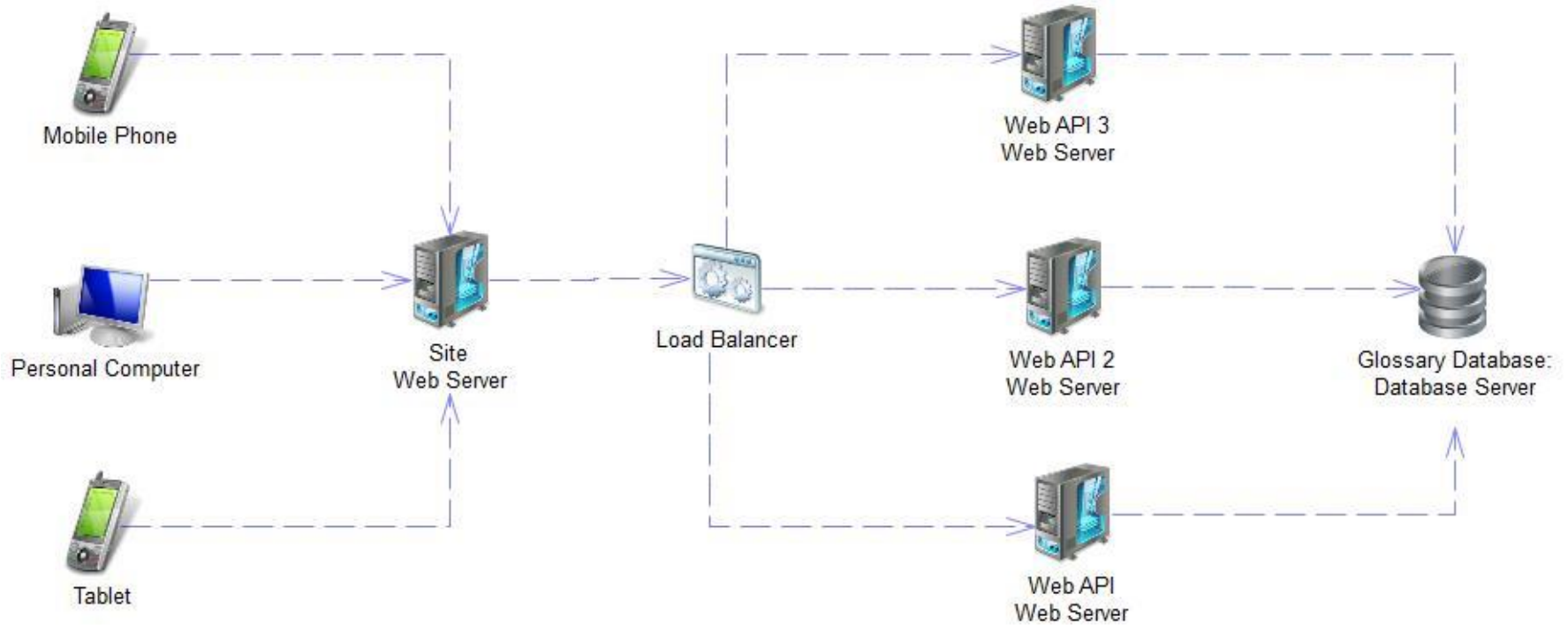
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Non Functional Requirements

- Support to a large number of accesses (**Availability and Scalability**);
- Restricted access for content management (**Security**);
- Responsive interface capable of adapting to screens of different devices such as computers, tablets or smartphones (**Portability**);
- Facility to search for signs or semantic categories (**Usability**).

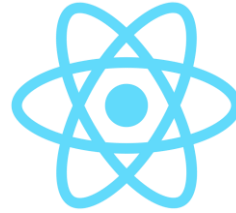
System Development (System Architecture)



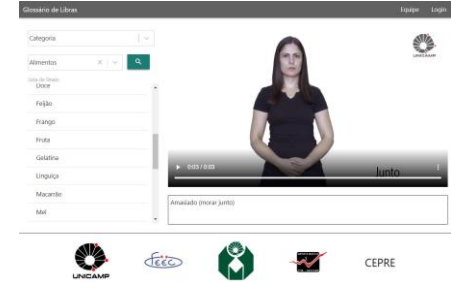
System Development (Graphical User Interface)



REACT



Computer



Mobile



System Development (Data Manipulation Logic)



+

express



```
exports.create = (user, done) => {  
  async.waterfall([  
    function(done) {  
      userRepository.findByUser(user.user, done);  
    },  
    function(data, done)  
    {  
      if (data)  
      {  
        done({  
          code: 422,  
          message: "O usuário informado já existe na base de dados!!"  
        }, null);  
        return;  
      }  
      userRepository.findByMail(user.mail, done);  
    },  
    function(data, done)  
    {  
      if (data)
```

System Development (Technology)



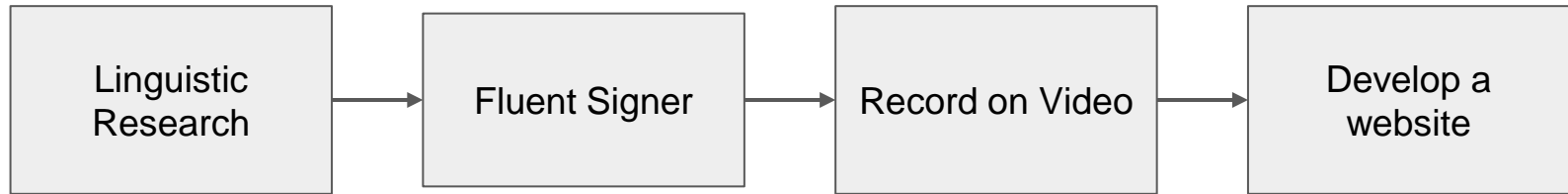
Limit to 1000 rows

```
1 • SELECT * FROM fn468_libras.signs;
```

Result Grid

	ID	SIGN	COMMENTS	FILE_NAME	VIDEO_PATH
1	Sinal 01	Sinal 01	futebol.mp4	C:\FCM_LIBRAS\b67c2677-d450-4b03-bf15-db962165fbf5.mp4	
2	Sinal 02	Sinal 02	futebol.mp4	C:\FCM_LIBRAS\fe44d11f-1c47-43b9-b24a-2505e39e0f75.mp4	
3	Sinal 03	Sinal 03	futebol.mp4	C:\FCM_LIBRAS\55ca6925-0cc9-4118-ac68-c365a96224f3.mp4	
4	Sinal 04	Sinal 04	futebol.mp4	C:\FCM_LIBRAS\df5a98ed-cee6-44d4-9905-f97be98e7a11.mp4	
5	Sinal 05	Sinal 05	futebol.mp4	C:\FCM_LIBRAS\5425701f-4fdc-46ff-ab56-dc4a3f74297d.mp4	
6	Sinal 07	Sinal 07	futebol.mp4	C:\FCM_LIBRAS\32fe1850-3bab-44ed-9c32-958bc26961f3.mp4	
7	Sinal 08	Sinal 08	futebol.mp4	C:\FCM_LIBRAS\bcfdb937-1aa7-4fcc-86d9-822831a05e9d.mp4	
8	Sinal 09	Sinal 09	futebol.mp4	C:\FCM_LIBRAS\5f236b23-bcd3-4572-a96c-7cad0f42f9b7.mp4	

Summarizing



Result

← → ↻ ⓘ Not secure | libras.fee.unicamp.br



Glossário de Libras

Equipe Login

Sinal



Começa com...



Lista de Sinais:



CEPRE

Conclusion

The Brazilian Sign Language Glossary is a partnership between the School of Medical Sciences and the School of Electrical and Computer Engineering;

It records 2,000 signs didactically divided into 33 semantic categories, which enables any hearing person who speaks Portuguese to learn the Brazilian Sign Language;

It is a useful signs database for research in the fields of linguistics, lexicology, and lexicography of the Brazilian Sign Language;

It can also be used in computational research aimed at recognizing and translating sign language into oral languages.

Future Work

- The expansion of the number of signs and semantic categories in the platform;
- The inclusion of exercises involving the signs in a contextualized way;
- The analysis of the results obtained with the tool in the learning process.

Acknowledge



Questions & End

Our source code is available on:

https://github.com/lucasvieirademiranda/fcm_libras_frontend

https://github.com/lucasvieirademiranda/fcm_libras_backend



We remain at your disposal for any question at:

lucasvieirademiranda@gmail.com

janicetm@unicamp.br

martino@unicamp.br



Thank you!

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