Requirements Traceability

Purpose:

The purpose of using use cases in this web application project is to define and document the functional requirements of the system from the user's perspective, that is, how users interact with the system and what functionalities they need to perform their tasks. Use cases provide a detailed description of the steps that users must follow to complete a specific task, which helps us achieve an interface design that is appropriate to the user's needs, efficient and easy to use.

In addition, use cases serve as a clear and precise communication between the development team and the users, which helps to minimize misunderstandings and unfulfilled expectations.

Use case 1:

Use Case Name: Implementation of teaching techniques for children with ADHD.

Description: This use case describes how teachers can use a web application to implement effective teaching techniques for different classroom activities for children with ADHD.

Actors: Teachers

Main flow of events

1. The teacher logs into the web application.
2. The teacher is in the main dashboard of the web application.
3. The teacher looks for teaching techniques to implement in an activity for children with ADHD.
4. The teacher implements the teaching techniques in his lesson plan.
5. The web application monitors and records the student's progress in implementing these techniques.
6. The teacher receives feedback and suggestions for improvement based on the student's progress record.

Alternative event streams:

- 1a. If the teacher cannot log in, an error message is displayed.
- 2a. If a suitable technique is not found, the teacher can search an external source and then add the technique to the web application.
- 4a. If the student's progress record shows that the technique is not working, the teacher can modify it or choose a different technique.

Preconditions:

- The teacher must have access to a computer with an internet connection.
- The web application must be available and accessible to the teacher.
- The teacher must be registered and logged in to the web application.

Postconditions:

- Appropriate teaching techniques for children with ADHD are implemented in the teacher's lesson plan.
- Student progress is recorded and monitored in the web application.
- The teacher receives feedback and suggestions for improvement based on the student's progress record.

Associated requirements:

- RF-001: The system will offer the teacher suggestions of adaptable techniques for common activities in the classroom, which are appropriate for children with ADHD and are complemented with their interests.
- RF-003: The system must allow teachers to record information about the activities carried out by the children, including the start and end times, a description of the activity, and any relevant additional comments.
- RF-005: The system will include a user creation mechanism that will allow users to register and authenticate through a login and account registration process, respectively. This process will guarantee access to the web application and the possibility of storing user data.
- RNF-002: The system will have an interface that is easy to navigate, intuitive, and its functions can be used without complication.

Comments: None.

Use case 2:

User case name: Record of information for students with ADHD.

Description: The use case describes how teachers can record relevant information from their Kindergarten students with ADHD in a web application; This information includes child data, such as parental interests and feedback.

Actors:

- Teacher

Main event flow:

1. The teacher accesses the web application and selects the "Student information record" option.
2. The application displays a form to register student information.

3. The teacher enters the relevant information of the student, such as name, age, gender, type of ADHD, interests, among others.
4. The application validates the information entered and displays a successful registration confirmation message.
5. The teacher can add more students or exit the application.

Alternative event streams:

- 3rd. If the information entered is not valid, the application displays an error message and asks the teacher to correct the information.

Preconditions:

- The teacher must have access to the web application.

Postconditions:

- The registered information of the students is correctly stored in the database of the application.

Associated requirements:

- RF-002: The system must allow the teacher to register students with ADHD and store pertinent information on each of them, such as their diagnosis, interests, doctor's recommendations, etc.
- RF-005: The system will include a user creation mechanism that will allow users to register and authenticate through a login and account registration process, respectively. This process will guarantee access to the web application and the possibility of storing user data.
- RNF-002: The system will have an interface that is easy to navigate, intuitive, and its functions can be used without complication.
- RNF-004: The system will securely store data, both users and the data they enter into the system will be encrypted and have a security system.

Comments:

The recorded information will be used to monitor the progress and development of students with ADHD in kindergarten.

Use Case 3:

Use case name: Record of school activities for children with ADHD.

Description: This use case describes the functionality of the web application for teachers to record the school activities of children with ADHD in the classroom, including the description of the activity, the start and end times of the activity, the technique used and other comments.

Actors

- Teacher

Main event flow:

1. The teacher enters the web application and selects the option to record school activities for children with ADHD.
2. The application displays a form for the teacher to enter the description of the activity, the start and end time of the activity, and the technique used.
3. The teacher completes the form and submits the information.
4. The application saves the information and shows a confirmation to the teacher.

Alternative event streams:

- 2a. If the teacher enters incorrect start and end times, the app displays an error message and requests that the data be corrected.
- 2a. If the teacher does not complete all the required fields of the form, the application displays an error message and requests that the missing fields be completed.

Preconditions:

- The teacher must have an account in the web application.
- The teacher must be authorized to record school activities for children with ADHD.

Postconditions:

- The information of the school activity for children with ADHD is registered in the web application.

Associated requirements:

- RF-003: The system must allow teachers to record information about the activities carried out by the children, including the start and end times, a description of the activity, and any relevant additional comments.
- RF-006: The system must have a home screen that shows the functions and tools available in the web application, as well as the last movements of the user in the application.
- RNF-002: The system will have an interface that is easy to navigate, intuitive, and its functions can be used without complication.
- RNF-004: The system will securely store data, both users and the data they enter into the system will be encrypted and have a security system.

Comments:

La funcionalidad de este caso de uso permite a los docentes llevar un registro preciso de las actividades realizadas en el aula para los niños con TDAH, lo que puede ser útil para evaluar su desempeño y planificar futuras actividades específicas para ellos. Además, esto ayuda a los padres y tutores a entender el progreso de los niños con TDAH en la escuela.

Use Case 4:

Use case name: Use of the website for teaching children with ADHD by older teachers who do not use or are not familiar with the use of technology.

Description: This use case describes the functionality of the web application to provide help and support to teachers who are not familiar with technology and who need to use the platform to teach children with ADHD.

Actors

Teachers over 40 years of age who are not familiar with using this type of technology.

Main event flow:

1. The teacher accesses the web application and selects the "Help" option.
2. The web application shows a list of resources and tools so that the teacher can learn to use the platform, including video tutorials, user guides and reference manuals.
3. The teacher selects the resource she needs and accesses it.
4. The web application displays the selected resource on the teacher's screen.
5. The teacher follows the instructions in the resource to learn how to use the platform.
6. The teacher finds useful information and tips for teaching children with ADHD in the web application.
7. The teacher closes the web application.

Alternative event streams:

- If the teacher can't find the resource she needs, she can submit a help request through the web application.
- If the teacher has trouble following the instructions in the resource, she can contact the support team through the web application.

Preconditions:

- The teacher must have an account in the web application.
- The teacher must be registered as a user of the web application.
- The teacher must need help to use the platform.

Postconditions:

- The teacher has access to the necessary resources and tools to learn how to use the platform.
- The teacher obtains useful information and tips for teaching children with ADHD on the website.

Associated requirements:

- RF-005: The system will include a user creation mechanism that will allow users to register and authenticate through a login and account registration process, respectively. This process will guarantee access to the web application and the possibility of storing user data.
- RF-006: The system must have a home screen that shows the functions and tools available in the web application, as well as the last movements of the user in the application.
- RNF-002: The system will have an interface that is easy to navigate, intuitive, and its functions can be used without complication.
- RNF-005: The system will have elements that are easily recognizable to access the most important functions, making the system intuitive.

Comments:

Este caso de uso es importante para garantizar que los docentes mayores con dificultades para usar tecnología tengan acceso a recursos útiles para la enseñanza de niños con TDAH. La página web debe ser fácil de navegar y proporcionar opciones de ayuda adicionales para garantizar que todos los usuarios puedan aprovechar al máximo la información y los recursos proporcionados.

Traceability Matrix

Purpose:

The implementation of the traceability matrix in our project is essential to ensure that all the needs of the project are addressed in the use cases. This allows us to make a clear connection between project requirements and the use cases that satisfy them, ensuring that no important requirements are left out of the software design.

Additionally, the traceability matrix helps us identify requirements that have not yet been addressed in any use case, indicating the need to create new use cases or revise existing requirements. This allows us to fine-tune the design of the software and ensure that all requirements are met.

Furthermore, the traceability matrix is allowing us to track the progress of the project. By being able to clearly see which requirements have already been addressed in the use cases and which have not yet, we can assess the progress of the project and take action if necessary.

Format:

Requirements X User Cases	**Use Case 1:** Implementation of teaching techniques for children with ADHD	**Use Case 2:** Record of information of students with ADHD**.**	**Use case 3:** Record of school activities for children with ADHD.	**Use Case 4:** Use of the website for teaching children with ADHD by older teachers who do not use or are not familiar with the use of technology.
RF-001 Techniques				
RF-002 Tracking System				
RF-003 Tools				
RF-004: Resources				
RF-005 Login and sign up				
RF-006 Home Screen				
RNF-001: Maintainability				
RNF-002 Graphical user interface				
RNF-003 Escalability				
RNF-004 Security				
RNF-005 Friendly and understandable				

Conclusions

In conclusion the construction of this traceability matrix highlights the importance of system usability and suggests that specific features should be implemented to make the system easier to use and understand.

Also, user-centered design is critical; The inclusion of user help and a simple, user-friendly interface indicates that user-centred design is in the works, which is essential to ensure that the system is accepted and used effectively.

The traceability matrix also provides an overview of the scope of the system and the processes it is expected to handle. In particular, the system is expected to record information about students with ADHD, the school activities related to them, and the

teaching techniques used to help them. This suggests that the system could be used by professionals to improve their practice and improve the support they provide to students with ADHD.

References:

Carniel, C.A., Pegoraro, R.A. (2018). Metamodel for Requirements Traceability and Impact Analysis on Agile Methods. In: Santos, V., Pinto, G., Serra Seca Neto, A. (eds) Agile Methods.

https://asana.com/es/templates/requirements-traceability-matrix