

# A PEDAGOGICAL ARCHITECTURE FOR SYSTEMS DESIGN AND DEVELOPMENT IN REMOTE LEARNING BASED ON SOFTWARE ECOSYSTEMS CHARACTERISTICS

## Questionnaire

TABLE I  
PARTICIPANT CHARACTERIZATION QUESTION

ID	Questions	Type
1	Do you have any experience with systems development out of the academic context?	Closed
2	Have you ever used any software repository? Example: GitHub	Closed
3	How do you consider your affinity with programming?	Closed
4	Please, select the items/languages you know.	Closed
5	Did you have a GitHub account before the course?	Closed

TABLE 2  
SCENARIOS AND RELATED CHARACTERISTICS

ID	Scenario	Characteristics
1	<i>“One or more members are the team’s source of expertise and are called upon to answer questions”.</i>	Source of learning
2	<i>“A developer actively participates by contributing with substantial code to the project”.</i>	Participation with code
3	<i>“The contributions of one member of the team were of high value for the project to achieve its objectives”.</i>	Content value
4	<i>“A team member devoted much time to the project, whether it’s documentation, development, or testing”.</i>	Long-time interaction with the project
5	<i>“The comments, suggestions, and/or criticisms of a team member were important for the project development”.</i>	Participation with comments
6	<i>“The good relationship among team members contributed to the project’s success”.</i>	Closeness to the GitHub project owner

TABLE 3  
DISCIPLINE ASSESSMENT

ID	Questions	Type
1	How was your experience with the discipline?	Close
2	If we offer the discipline remotely again, would you have any tips and/or suggestions for improvement?	Open

TABLE 4  
ILLUSTRATION OF THE CODING PROCESS

**Observation notes:** The developers on the team knew the front-end and back-end. This made it easier to achieve a good result when delivering artifacts related to part of the project. Sometimes, developers S20 and S23 stayed up all night to project and execute on time.”

Preliminary code	Focused code	Category	Category
Developers knew the front-end and back-end	Contribution of codes to the project	Technical	Participation with code
S20 and S23 stayed up all night to project and execute	Long interaction with the project	Social	Long-time interaction with the project