

Name	
Surname	

The project

Variables that influence a project

1 The presentation employed the technique of "generating emotion" prior to the presentation of the arguments, which may create a predisposition towards the message conveyed by the professor. To shift perspectives, students are encouraged to find (or create) the most appropriate phrase for each component of the project. You can find phrases at:

	www.wikiquote.org
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Component	A phrase that describes what one is thinking
The idea to develop	
The problem to be solved	
The product to be obtained	
Time spent	
The project team	
Customers	
The environment in which the project is developed	

The intention of the exercise is to define one's own opinion about the variables (in general) that will determine the success of the project.

Project management

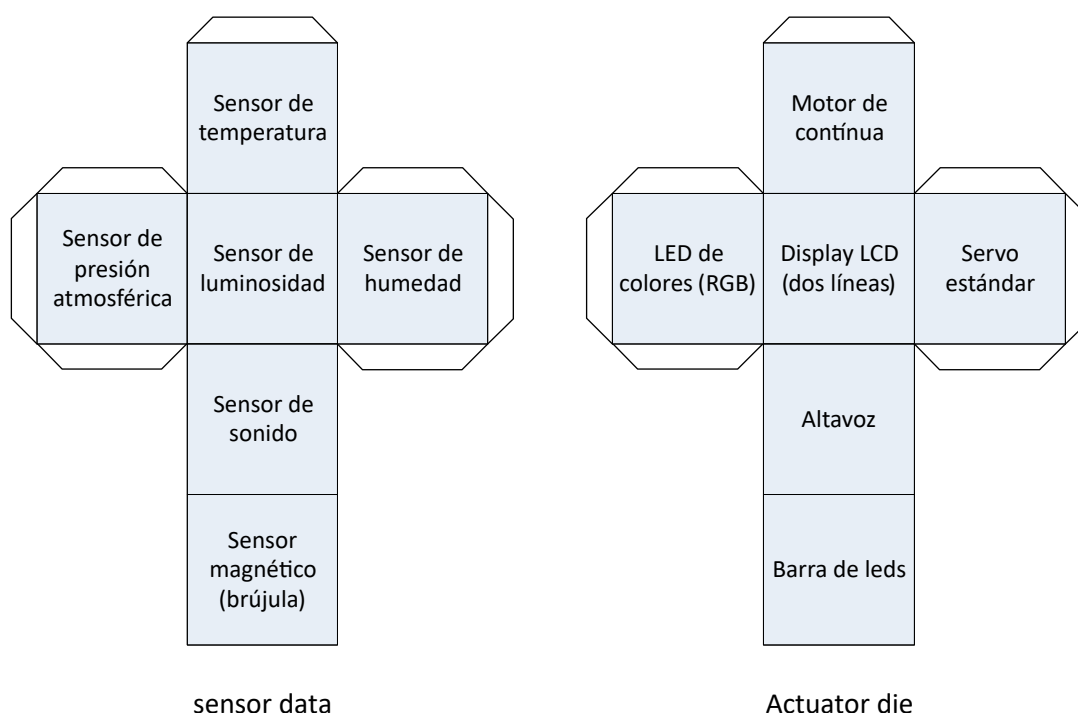
2, Determine which aspects are related to each of the project components in the project quality pyramid. To solve this think about a project you have managed. The objective of the exercise is to relate the project components to the project's goal: a quality product. In this way, we can see how what a problem in predictive methodologies might be can be an advantage in agile methodologies.

Aspects	TIME	SCOPE	COST
The idea to develop			
The problem to be solved			
The product to be obtained			
Time spent			
The project team			
Customers			
The environment in which the project is developed			

The change

Disruptive thinking

Disruptive thinking (like any other type of thinking derived from any of our multiple intelligences) can be trained. This activity will be used as an example of using disruptive thinking (gamification ¹) ²for a specific topic. The tool will be decision dice. In the example, they are used to decide on a control task that involves reading data from sensors (first die) and writing data to actuators (second die). This breaks down the student's preconceived notion of working with sensors and actuators (traditionally, they would choose a temperature sensor and an LCD display to visualize intensity).



The exercise consists of rolling the two dice and creating a setup that fulfills the function:
READ FROM A <SENSOR DIE> AND DISPLAY VIA AN <ACTUATOR DIE>

3. Fill in (and if possible, play) the necessary dice and generate the function (associate) that links the results of both dice so that the game is adapted to your work environment. NOTE: The dice to fill in are in the appendix at the end of the bulletin. Provide an example of the result obtained:

¹An example of how classic tools (Word, Excel, etc.) based on office work are not adapted to agile methodologies is seeing how many words like "gamification" generate a spelling error.

²Gamification involves performing a task through a game.

The philosophy: LEAN

MUDAS, MURIS and MURAS

4. We need to move a load of boxes weighing a total of 6000 kg between two warehouses. The forklift we have can carry up to 2000 kg. Determine what each of the following load distributions corresponds to (MUDA, MURI, MURA and optimal solution).

Distribution	It is a...
2 trips of 2000Kg and two trips of 1000Kg	MURA (mismatch) since the first trips are optimal (at maximum load, but the next two are done at half load)
2 trips of 3000Kg	
3 trips of 2000Kg	
6 trips of 1000Kg	

5. Recognize MUDAS (waste, friction = “slowdowns”), MURIS (resources consumed) and MURAS (imbalances) in the following cases:

Case	MUDAS, MURIS and MURAS
 Example: Use cups like the one shown in the figure in the company's coffee room for coffees and infusions that need to be heated in a microwave.	UNNECESSARY MOVEMENT: To put the cup in the microwave, you must remove the metal handle ³, which is time-consuming. MUDA (defects and errors): If an employee forgets to remove the metal handle and puts the cup in the microwave, short circuits will occur that can trigger a serious accident. I DIED: It takes more time than necessary. It's only a few seconds, but heating many cups adds up to a considerable amount of time. MURA: When dividing the cup into two parts (to be heated in the microwave), pieces are left behind that can be lost, resulting in cups without handles or handles without cups.
 Using a single tool panel in an electronics workshop that must be shared by different employees.	

³ Metal cannot be put in a microwave oven as it creates very dangerous short circuits.

Case	MUDAS, MURIS and MURAS
 Establish a fixed schedule for cleaning oil stains in the aisles of a warehouse.	

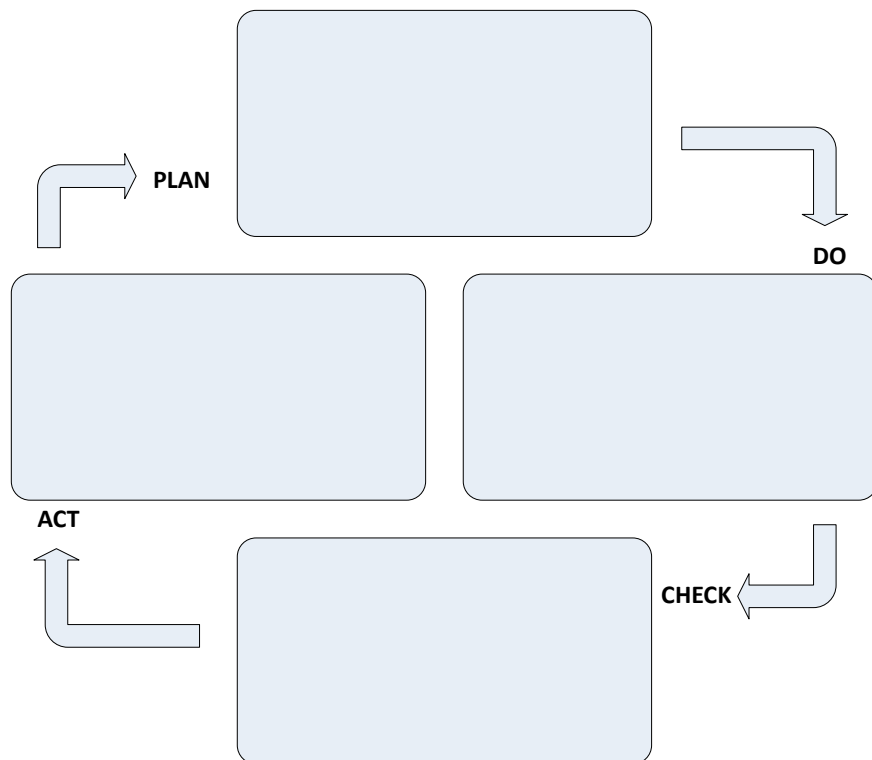
6 Recognize MUDAS (waste, friction = “slowdowns”), MURIS (resources consumed) and MURAS (imbalances) in some of the processes carried out in your own projects:

CHANGES	Case in the usual project
Unnecessary waiting	
Unnecessary transport	
Unnecessary processes	
Unnecessary movements	
Defects and errors	
Unnecessary inventory (stock)	
Overproduction	
MURIS	
WALLS	

KAIZEN

The concept of Kaizen is related to the concepts of Muda, Muri, and Mura, since it is the detection of these aspects that allows us to improve the product. However, adapting to circumstances means that, in addition to the optimization already mentioned, a mechanism must be enabled to allow for this detection continuously. This mechanism is called Kaizen in Lean, or a continuous improvement mechanism. There is a wide variety of such mechanisms. Among them is the well-known PDCA ⁴(Plan-Do-Check-Act) cycle ⁵.

7For one of the projects or processes you have underway or planned, complete the sections of the PDCA.



⁴Also known as the Deming circle/cycle/wheel

⁵Sometimes, in more academic contexts, PDSA (Plan-Do-Study and Act) is mentioned.

The Agile Manifesto

Analysis of the manifesto

8 The Agile Manifesto has twelve points with which one may disagree to a greater or lesser degree, depending on personal or company criteria. This activity involves assessing your level of agreement with each of the manifesto's points.

The scale to be used is as follows:

1	2	3	4	5
Strongly disagree	Disagree	Indifferent	OK	I completely agree

Point of the manifesto	1	2	3	4	5
1. Our highest priority is to satisfy the customer through the early and continuous delivery of the product with value.	☐	☐	☐	☐	☐
2. We accept that requirements will change, even late in development. Agile processes leverage change to provide a competitive advantage for the customer.	☐	☐	☐	☐	☐
3. We deliver functional products frequently, between two weeks and two months, with preference given to the shortest possible period.	☐	☐	☐	☐	☐
4. Business managers and developers work together daily throughout the project.	☐	☐	☐	☐	☐
5. Projects are developed around motivated individuals. They need to be given the environment and support they require and trusted to carry out the work.	☐	☐	☐	☐	☐
6. The most efficient and effective method of communicating information to the development team and among its members is face-to-face conversation.	☐	☐	☐	☐	☐
7. A working product is the primary measure of progress.	☐	☐	☐	☐	☐
8. Agile processes promote sustainable development. Promoters, developers, and users must be able to maintain a constant pace indefinitely.	☐	☐	☐	☐	☐
9. Continuous attention to technical excellence and good design improves Agility.	☐	☐	☐	☐	☐
10. Simplicity, or the art of maximizing the amount of work not done, is essential.	☐	☐	☐	☐	☐
11. The best architectures, requirements, and designs emerge from self-organized teams.	☐	☐	☐	☐	☐
12. At regular intervals the team reflects on how to be more effective and then adjusts and refines its behavior accordingly.	☐	☐	☐	☐	☐

Synthesis and creation of the manifesto

The Agile Manifesto has twelve points that were analyzed (from a personal/professional perspective) in the previous exercise. Each point is related to one of the project components. To determine which project components are most closely aligned with our criteria, match each point of the Agile Manifesto with each project component, noting which components correspond to our highest-rated points in the manifesto.

	Idea	Problem	Product	Time	Equipment	Customer	Around
1. Our highest priority is to satisfy the customer through the early and continuous delivery of the product with value.	☐	☐	☐	☐	☐	☐	☐
2. We accept that requirements will change, even late in development. Agile processes leverage change to provide a competitive advantage for the customer.	☐	☐	☐	☐	☐	☐	☐
3. We deliver functional products frequently, between two weeks and two months, with preference given to the shortest possible time period.	☐	☐	☐	☐	☐	☐	☐
4. Business managers and developers work together daily throughout the project.	☐	☐	☐	☐	☐	☐	☐
5. Projects are developed around motivated individuals. They need to be given the environment and support they require, and trusted to carry out the work.	☐	☐	☐	☐	☐	☐	☐
6. The most efficient and effective method of communicating information to the development team and among its members is face-to-face conversation.	☐	☐	☐	☐	☐	☐	☐
7. A working product is the primary measure of progress.	☐	☐	☐	☐	☐	☐	☐
8. Agile processes promote sustainable development. Promoters, developers, and users must be able to maintain a constant pace indefinitely.	☐	☐	☐	☐	☐	☐	☐
9. Continuous attention to technical excellence and good design improves Agility.	☐	☐	☐	☐	☐	☐	☐
10. Simplicity, or the art of maximizing the amount of work not done, is essential.	☐	☐	☐	☐	☐	☐	☐
11. The best architectures, requirements, and designs emerge from self-organized teams.	☐	☐	☐	☐	☐	☐	☐
12. At regular intervals the team reflects on how to be more effective and then adjusts and refines its behavior accordingly.	☐	☐	☐	☐	☐	☐	☐

Creation of the manifesto

10. Based on the two previous exercises, create your own manifesto focusing on the points you most agree with. It doesn't need to have 12 points; in fact, one point might be enough, or you might need 20 points.

APPENDIX: DECISION DATA

