

|                |  |
|----------------|--|
| <b>Name</b>    |  |
| <b>Surname</b> |  |

## KANBAN Philosophy

**1.** The exercise is based on an adaptation of the following experiment proposed by Jon Cook on the Yahoo Critical Chain list. The exercise demonstrates the difficulty of working in parallel. Fundamentally, it is related to the influence of task switching both within the same project and between different projects, i.e. switch time.

In order to carry out all the sections of this exercise, the duration of each of them must be timed. The times (measured in seconds) invested in filling in each of the tables will be put in the following table:

| Project                               | Time spent |
|---------------------------------------|------------|
| 1.1 Simple, multitasking project      |            |
| 1.2 Simple project, sequential tasks  |            |
| 1.3 Complex project, multitasking     |            |
| 1.4 Complex project, sequential tasks |            |

One of the important features of Kanban is the measurement of times in all the tasks involved in a project. By means of this measurement, everything related to these tasks can be characterized much better for when they must be planned. To do this, after performing the tasks of the exercise, a first approximation will be made in the calculation of the switch time<sup>1</sup>. In this case, switch time is the time of switching between tasks (i.e. between switching from Task 1 to Task 2, from Task 2 to Task 3, and from Task 3 to Task 1 (since there are three tasks in the exercise)).

---

<sup>1</sup> Obviously, the calculation presented in this exercise does not represent switch time, but an "intuitive" way of obtaining a numerical value. To calculate switch time efficiently, the entire process must be monitored so that the actual time invested in the task and the actual time invested in changing tasks or, as is the case, in changing projects, are obtained.

1.1 In the project we have three tasks, one per column. We will first develop in parallel (i.e. multitasking) and then sequentially. The tasks to do in the project are:

- 1) Task 1. write the letters from A, to J
- 2) Task 2. Write the numbers from 1 to 10
- 3) Task 3. write Roman numerals from I to X

The output of the table should look similar to the following:

| TASK 1 | TASK 2 | TASK 3 |
|--------|--------|--------|
| A      | 1      | I      |
| B      | 2      | II     |
| ...    | ...    | ...    |
| J      | 10     | X      |

Multitasking. Fill in the three columns, going row by row. That is, first row one for the three tasks, then row two for the three tasks, etc.

| TASK 1 | TASK 2 | TASK 3 |
|--------|--------|--------|
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |

1.2 Sequential: Fill in the three columns first with the column of task 1, then with the column of task 2 and end with the column of task 3

| TASK 1 | TASK 2 | TASK 3 |
|--------|--------|--------|
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |

Variation with increased complexity (in case the times of the two previous years have been very similar). Fill in the table, in the same way, but now the tasks consist of:

- 1) Task 1. write the letters from A to J, alternating upper and lower case.
- 2) Task 2. Write the even numbers from 20 to 1 (in descending order).
- 3) Task 3. write the odd numbers, in Roman numeral format from I to XX.

1.3 Multitasking. Fill in all three columns, row by row. That is, first row one for the three tasks, then row two for the three tasks, etc.

| TASK 1 | TASK 2 | TASK 3 |
|--------|--------|--------|
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |

1.4 Sequential: Fill in the three columns, first with the column of task 1, then with the column of task 2 and end with the column of task 3

| TASK 1 | TASK 2 | TASK 3 |
|--------|--------|--------|
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |

1.5 If the switch time (between tasks) were 1 second, what would be the total switch time spent on completing the three projects in multitasking?

- ☐ a) 2 seconds  
☐ b) 3 seconds  
☐ c) 29 seconds  
☐ d) 30 seconds

Explanation:

1.6 If the switch time were 1 second, what will be the total switch time spent in carrying out the three projects in the sequential mode?

- ☐ a) 2 seconds  
☐ b) 3 seconds  
☐ c) 29 seconds  
☐ d) 30 seconds

Explanation:

## Kanban Cards

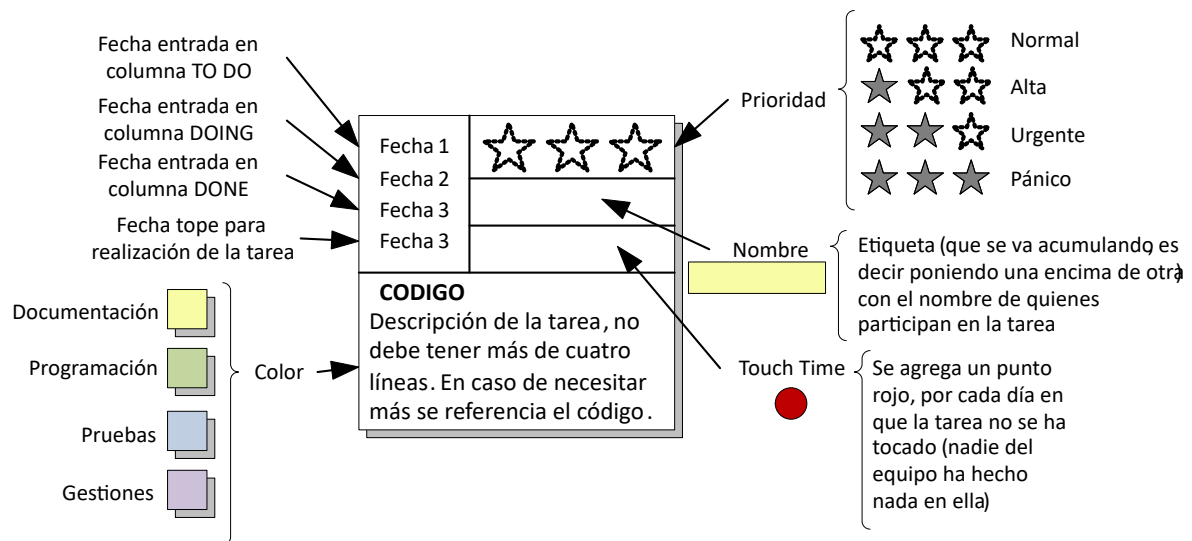
2. Answer the following questions, taking into account the following Kanban board

| TO DO | DOING | DONE |
|-------|-------|------|
|       |       |      |

The following calendar dates for the month of September 2014 (we consider working days to be Monday to Friday)

| Septiembre |           |           |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <u>Lu</u>  | <u>Ma</u> | <u>Mi</u> | <u>Ju</u> | <u>Vi</u> | <u>Sa</u> | <u>Do</u> |
| 1          | 2         | 3         | 4         | 5         | 6         | 7         |
| 8          | 9         | 10        | 11        | 12        | 13        | 14        |
| 15         | 16        | 17        | 18        | 19        | 20        | 21        |
| 22         | 23        | 24        | 25        | 26        | 27        | 28        |
| 29         | 30        |           |           |           |           |           |

And finally, the following way of structuring the card:



The following questions refer to the information contained in the following card

|                                                                                                                                              |           |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 10/09/2014 (x)                                                                                                                               | ★         |
| 12/09/2014 (v)                                                                                                                               |           |
| 15/09/2014 (L)                                                                                                                               | Juan Jose |
| 19/09/2014 (V)                                                                                                                               |           |
| <b>WP4.T05.015</b><br><b>Programar la función que recoge la información de la interfaz de la App y compone el mensaje JSON para enviarlo</b> |           |

2.1 What can we deduce about the dates of completion of the task?

- ☐ a) The task was completed on time
- ☐ b) The task was not completed on time
- ☐ c) The task began to be done at the same time it was put on the Kanban board
- ☐ d) There is an incongruity of dates

Explanation:

2.2 Which of the following answers is true?

- ☐ a) The task had a normal priority
- ☐ b) The task had a high priority
- ☐ c) The task was worked on by a single member of the team
- ☐ d) The color of the assignment is not appropriate to its description

Explanation:

2.3 What is the touch time of the task (on weekdays)?

- ☐ a) Two
- ☐ b) Three
- ☐ c) Five
- ☐ d) Touch time cannot be measured with the data on the card

Explanation:

2.4 What is the cycle time of the task (in working days)?

- ☐ a) Two
- ☐ b) Three
- ☐ c) Five
- ☐ d) Cycle time cannot be measured with the data on the card

Explanation:

2.5 What is the lead time of the task (in working days)?

- ☐ a) Two
- ☐ b) Three
- ☐ c) Four
- ☐ d) You can't measure lead time with the data on the card

Explanation:

The following questions are based on the following Kanban board

| TO DO | DOING | DONE |
|-------|-------|------|
|       |       |      |

The dates of completion of the tasks refer to the month of September 2014 (we consider working days to be Monday to Friday).

| Septiembre |           |           |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <u>Lu</u>  | <u>Ma</u> | <u>Mi</u> | <u>Ju</u> | <u>Vi</u> | <u>Sa</u> | <u>Do</u> |
| 1          | 2         | 3         | 4         | 5         | 6         | 7         |
| 8          | 9         | 10        | 11        | 12        | 13        | 14        |
| 15         | 16        | 17        | 18        | 19        | 20        | 21        |
| 22         | 23        | 24        | 25        | 26        | 27        | 28        |
| 29         | 30        |           |           |           |           |           |

And the following card format will be used

|                                                                                                                                 |               |
|---------------------------------------------------------------------------------------------------------------------------------|---------------|
| 08/09/2014 (L)                                                                                                                  |               |
| 15/09/2014 (L)                                                                                                                  |               |
| 19/09/2014 (V)                                                                                                                  | Ana Jose Juan |
| 19/09/2014 (V)                                                                                                                  | ●●●●          |
| <b>WP3.T04.001</b><br>Crear la lista de distribución de los partners del proyecto comprobando que las direcciones son correctas |               |

2.6 Which of the following statements is true?

- ☐  
☐  
☐  
☐

a) The task is programming

b) The task was worked on by a single member of the team

c) The task was not completed on time

d) The task has the lowest priority

Explanation:

2.7 What is the touch time of the task (on weekdays)?

- ☐ a) One
- ☐ b) Four
- ☐ c) Five
- ☐ d) Touch time cannot be measured with the data on the card

Explanation:

2.8 What is the cycle time of the task (in working days)?

- ☐ a) One
- ☐ b) Four
- ☐ c) Five
- ☐ d) Cycle time cannot be measured with the data on the card

Explanation:

2.9 What is the lead time of the task (in working days)?

- ☐ a) One
- ☐ b) Five
- ☐ c) Ten
- ☐ d) You can't measure lead time with the data on the card

Explanation:

2.10 In the reflection meeting of the previous week (on Mondays) What reflection (or reflections) could correspond to the card?

- ☐ a) We are prioritizing management tasks too much
- ☐ b) Someone placed the card in the DOING column ahead of time
- ☐ c) We are leaving the negotiations to the last minute
- ☐ d) Too many people have worked to make a mailing list and check that it works

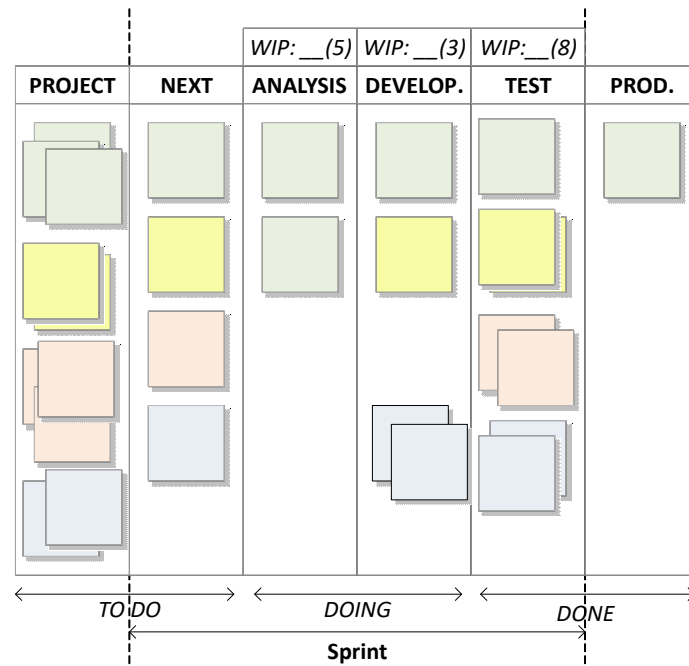
Explanation:

## Kanban Board

3. Answer the following questions, keeping in mind the following configuration of a Kanban board. The WIP is expressed as follows:

*Current WIP (Maximum WIP)*

The board is being used to manage tasks in a SCRUM-based project, so some of the columns belong to the sprint. In addition, from the point of view of the SCRUM master, the TEST column implies that the task is finished, even if it is not tested.



3.1 What is the current WIP (respectively) of the columns (ANALYSIS/DEVELOP./TEST)?

- ☐ a) (2,4,7)
- ☐ b) (3,-1,1)
- ☐ c) (5,3,8)
- ☐ d) (8,8,8)

Explanation:

3.2 Are there any columns with overload?

- ☐ a) Yes, the one from ANALYSIS
- ☐ b) Yes, DEVELOP's.
- ☐ c) Yes, the TEST
- ☐ d) No, all columns are balanced

Explanation:

3.3 Is there any column with less load than can be assumed?

- ☐ a) Yes, the one from ANALYSIS
- ☐ b) Yes, DEVELOP's.
- ☐ c) Yes, the TEST
- ☐ d) No, all columns are balanced

Explanation:

3.4 How many tasks do we have left to do? **Get Started** in the current iteration of the project (isn't it about how many tasks the project has left)?

- ☐ a) Four
- ☐ b) Ten
- ☐ c) Fourteen
- ☐ d) Seventeen

Explanation:

3.5 How many tasks do we have left to do? **Finish** in the current iteration of the project?

- ☐ a) Ten
- ☐ b) Fourteen
- ☐ c) Seventeen
- ☐ d) Twenty

Explanation:

3.6 How many tasks do we have left to do? **Finish** of the project?

- ☐ a) Ten
- ☐ b) Fourteen
- ☐ c) Twenty
- ☐ d) Twenty-eight

Explanation:

4. From the following situation (taking into account the card nomenclature presented in the activity 2), answer the following questions

| TO DO                                                                                                           |   | DOING |
|-----------------------------------------------------------------------------------------------------------------|---|-------|
| 10/09/2014(x)                                                                                                   |   |       |
| / / ( )                                                                                                         |   |       |
| / / ( )                                                                                                         |   |       |
| 15/09/2014(x)                                                                                                   |   |       |
| WP4.T05.015                                                                                                     |   |       |
| Programar la función que recoge la información de la interfaz de la App y compone el mensaje JSON para enviarlo |   |       |
| 10/09/2014(x)                                                                                                   | ★ |       |
| / / ( )                                                                                                         |   |       |
| / / ( )                                                                                                         |   |       |
| 18/09/2014(x)                                                                                                   |   |       |
| WP4.T05.016                                                                                                     |   |       |
| Programar la función que recoge el mensaje JSON y lo envía al servidor                                          |   |       |

The criteria, sorted by priority from highest to lowest, for switching from EVERYTHING to DOING are as follows

1. Highest priority
2. Whichever has the closest end date

4.1 Yes, today is 12/09/2014. What task will we choose to move on to DOING?

- ☐ a) The WP4 code. T05.015  
☐ b) The WP4 code. T05.016  
☐ c) Any of them could be switched to DOING  
☐ d) The one the programmer prefers, since they are programming tasks.

Explanation:

4.2 If the main criterion for choosing a task is "the one with the highest priority", which task will be the one we choose to move on to DOING?

- ☐ a) The WP4 code. T05.015
- ☐ b) The WP4 code. T05.016
- ☐ c) Any of them could be switched to DOING
- ☐ d) The one the programmer prefers, since they are programming tasks.

Explanation:

4.3 A programmer tells us that the two tasks should have the same priority and therefore simply choose the one that

- ☐ a) The WP4 code. T05.015
- ☐ b) The WP4 code. T05.016
- ☐ c) Any of them could be switched to DOING
- ☐ d) The one the programmer prefers, since they are programming tasks.

Explanation: