TIJUANA INSTITUTE OF TECHNOLOGY

SYSTEMS AND COMPUTER DEPARTMENT

SEMESTER

January - June 2021

CAREER

Computer Systems Engineer

CLASS

Big data / Data mining

STUDENT

Camacho Manabe Juan Daniel # 17210534

Salazar Ibarra Jesus Rodrigo 16212542

TEACHER

Ing. José Christian Romero Hernández

Tijuana, B.C. to 03/16/2021

What is pair coding?

The method known as pair coding (in Spanish, pair programming) is used mainly in agile software development and, more specifically, in extreme programming (XP). Pair coding specifies that there are always two people working on the code at the same time and that, as far as possible, they sit together. One is in charge of writing the code and the other of supervising it in real time. At the same time, they are constantly exchanging impressions: they discuss problems, find solutions and develop creative ideas.

These two workers are typically assigned different roles: the programmer who has been assigned the pilot role is in charge of writing the code. The programmer who has been assigned the copilot role is in charge of monitoring that code. One of the rules of pair coding states that these two roles are exchanged regularly (at short intervals). In this way, a possible hierarchical gap is avoided: equality between both workers is promoted and a fluid exchange of roles is achieved.

In addition, ideally, the workspace is also tailored to the specific requirements of the pair coding. Each worker must have their own mouse, keyboard and screen, which will always show the same information as the colleague's.

Somewhat less common is the method called remote pair coding. In this case, the programmers do not sit together, but are located in completely different places. For this method to work, you must have special technical solutions. Even despite the distance, colleagues must have a direct line of communication and must be able to access the code and view modifications in real time.

What is the advantage of working in pair coding?

High learning ability. You share the knowledge with your partner.

Code quality. Two people working on the same thing implies a permanent code review, it generates a discussion between peers that promotes better, more efficient and readable solutions, adding to all this the reduction of errors, which generates a much more maintainable and scalable code for a future.

Less procrastination. Increase the focus of work.

Lower exterior interruptions. When there are two people working than when only one does.

Immediate onboarding. The new members who join the project, work in a productive environment from day one, viewing code and adding value. This breaks the rule of two months on average that it takes a programmer to be productive and profitable.

Another of the great advantages derived from communication is the constant development of creativity: the constant exchange that takes place between the pair of programmers causes ideas that might not be had if the work were individual. Intercom also ensures that problems can be better solved in less time. Well, while a person who works alone can feel satisfied with the first option that seems best to him, the people involved in the pair coding must always justify their decisions before the rest. It is possible that they have another perception of the problem and are not satisfied with the solution that is proposed to them. This generates a debate in which new ideas are usually presented that lead to a much better code.

Good code is also concise code: experience dictates that a source text generated by pair coding tends to be shorter in design and therefore more efficient. This allows a later saving in resources in case of maintenance and adaptation.

As we have already mentioned, this technique can also be used to allow more experienced workers to share their knowledge with their younger colleagues. This not only takes advantage of the essential advantage of pair coding, which is the generation of high-quality code, but it can also be used simultaneously for training purposes.

However, this is all very time consuming: two programmers work together much faster than one alone, but no more than two programmers working separately. This means that this method makes projects progress more slowly or requires more staff, which in turn increases costs. Supporters of pair coding estimate that these overtime is compensated because the generated code contains fewer errors, is better structured in general and requires much less maintenance. Another possible downside is that pair coding is suitable for team building, but only if both partners work well together. With such a close collaboration, their problems with each other may slow down the results or end up escalating to something much worse. It is for this reason that the assignment of pairs in this method cannot be carried out.

Bibliography

1. *Rosado-Gómez, A., Quintero-Duarte, A., & Meneses-Guevara, C. D. (2012). Recuperado el (16/03/21) de Desarrollo ágil de software aplicando programación extrema. Revista Ingenio, 5(2), 24-29.*

2. *Solís, M. C. (2003). Recuperado el (16/03/21) de Una explicación de la programación extrema (XP). Willi. Net.*

3. *Salinger, S., Plonka, L., & Prechelt, L. (2008). Recuperado el (16/03/21) de A coding scheme development methodology using grounded theory for qualitative analysis of pair coding. Human Technology: An Interdisciplinary Journal on Humans in ICT Environments.*