

## **ABSTRACT**

*Technological developments in Indonesia are currently causing very tight business competition, especially in the sector that uses software as a tool to carry out its main business activities. To improve services and maintain customer loyalty, companies need to always develop the technology or features contained in their software. But in its development, software development projects often fail because of the difficulty in finding the right composition within the development team. There are two factors that cause team of software developers not find the right composition, there are including people and environmental factors. In creating an appropriate team composition, it is needed a match between the qualification of the abilities possessed by an individual and the requirements of the positions contained in a team. An individual's knowledge and experience become a real indicator when faced with the situation. It also requires an appropriate work environment, such as how cooperation is seen in a team and how communication between roles or positions contained in a team.*

*There are three important stages that must be passed to create a development team with the right composition. First, make an assessment that is used to measure the ability of an individual. Then the second is to determine the requirements that must be owned by individuals in a position on the team. Finally, matching between individual abilities and positions in a team. These stages will be applied by the author in a web-based software platform called Assessment Tool. The Making of this application has aim to provide solutions to the difficulties faced by the human resource division or its kind when conducting a session to develop a team of developers.*

*To do a match between individual abilities and role requirements, the authors implement Google OR-Tools as an engine to run the algorithm used to optimize team building. The algorithm used for this optimization is included in the combinatorial optimization algorithm with the type of case "Assignment as a Min Cost Flow Problem". This type of case is a type of case that is used to determine tasks with "x" requirements which correspond to an individual having the "y" ability. In implementing the engine in the Job Matching module, the author along with three other developers who are developing the Competency, 360 Degree and Report modules use a software development methodology called Collaboration Model of Software Development. This methodology is suitable for use in developing face-to-face applications by prioritizing communication that occurs within a development team.*

**Keywords: web, application, software, algorithm, Google OR-Tools**