RANCANG BANGUN SOFTWARE MEKANIKA REKAYASA SEBAGAI ALAT BANTU PEMBELAJARAN PERANCANGAN STRUKTUR

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ABSTRACT

One of the stages in the design of the construction in civil engineering is the analysis and design of the construction. The analysis and design is the steps that aims to know the behavior of the construction when loaded with the service loads in accordance with the function and environmental conditions of the construction. This phase is the beginning stage where a construction had been modeled using a specific device and then given the working load that has been planned to act on the construction. The purpose that you want to achieve with this modeling, in addition to know the behavior of the construction, is to get design parameters that can be used as a basis for consideration for the design of the final construction. To be able to perform analysis and design phase, and basic knowledge about engineering mechanics is an absolute necessary. In addition, other knowledge that need to be controlled among others: strength of materials, earthquake engineering, concrete technology, steel technology, wood technology and etc. The more complex construction that must be analyzed and designed, then required the knowledge that far more complete.

This is a development research where the product that will be produced is a software. The design of this software using Borland Delphi XE 3. The data will be analyzed in the form of data nodal displacement, reactions, and styles in, in the form of different relative to the reference software. The data obtained during testing processed and presented in the form of tables and graphs. As comparison to verify the data issued, used MS Excel and commercial program.

Based on the results of the research can be deduced that: (1) Program designed still has relative error 0%. This indicates that the program is designed to have the level of thoroughness is good enough, (2) The program can be started with a simple input and can run well without any obstacles, (3) Program is still limited to the delivery of the result is numeric, not display the results in the form of graphics, (4) Input data entered is also still in the form of numbers, not be graphics.

Kata Kunci: *structural analysis, mechanics, Borland Delphi*