Software Development Effort Estimation Using Fuzzy Techniques

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A subject of the research is preliminary estimation of software development effort, which is the major point in program project planning and building. Exactly this estimation is critical for both stages.

Generally, the software estimation technique includes algorithm, that incorporates parameters as objective data; for example the number of functional points, also experts' responses for such characteristics of software, as its complexity, the programmer's experience in working with similar projects and etc.

One of the most popular method is COCOMO II model, proposed in 1981 by Barry Boehm, which combines as expert as well algorithmic approaches.

On the present stage of the research are considered two approaches for evaluating software size, which is one of the most important parameters for estimation of software development effort. These approaches are: FPA (functional points analysis) and method offered by Boehm in COCOMO II. Using these two approaches was calculated the size of real software and compared with real size on example of EMC Studio (software created by EMCoS Company). The practice has demonstrated a number of problems, which accompany estimation process and which are mainly related to experts' participation. These problems concern to complexity of taking of the experts' knowledge, complexity of converting the expert data into numerical estimate, the existence of difference in estimation of several experts and etc.   Overcoming the abovementioned difficulties is planned by using fuzzy methods in processing of expert knowledge.

The next stage of research involves investigation of more then one expert's   knowledge condensation methods for the techniques of mentioned fuzzy parameters.

References

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