

## REFERENCE LIST

- [1] L. Prechelt, B. Unger, W. F. Tichy, P. Brossler and L. G. Votta, "A controlled experiment in maintenance: comparing design patterns to simpler solutions," in IEEE Transactions on Software Engineering, vol. 27, no. 12, pp. 1134-1144, Dec. 2001, doi: 10.1109/32.988711.
- [2] Vokáč, Marek & Tichy, Walter & Sjøberg, Dag & Arisholm, Erik & Aldrin, Magne. (2004). A Controlled Experiment Comparing the Maintainability of Programs Designed with and without Design Patterns—A Replication in a Real Programming Environment. Empirical Software Engineering. 9. 149-195. 10.1023/B:EMSE.0000027778.69251.1f.
- [5] L. Prechelt, B. Unger, W.F. Tichy, P. Brossler and L.G. Votta, "A controlled experiment in maintenance: comparing design patterns to simpler solutions," IEEE Transactions on Software Engineering, vol. 27, no. 12, Dec. 2001, pp. 1134-1144.
- [6] L. Prechelt and M. Liesenberg, "Design Patterns in Software Maintenance: An Experiment Replication at Freie University at Berlin," Second International Workshop on Replication in Empirical Software Engineering Research (RESER), Sept. 2011 pp.1-6, 21. DOI 10.1109/ RESER.2011.12
- [7] N. Juristo, S. Vegas, "Design Patterns in Software Maintenance: An Experiment Replication at UPM - Experiences with the RESER'11 Joint Replication Project," Second International Workshop on Replication in Empirical Software Engineering Research (RESER), Sept. 2011, pp.7-14, 21. DOI 10.1109/RESER.2011.8
- [8] N. -L. Hsueh, L. -C. Wen, D. -H. Ting, W. Chu, C. -H. Chang and C. -S. Koong, "An Approach for Evaluating the Effectiveness of Design Patterns in Software Evolution," 2011 IEEE 35th Annual Computer Software and Applications Conference Workshops, 2011, pp. 315-320, doi: 10.1109/COMPSACW.2011.59.
- [9] Oman, P. & Hagemester, J. "Metrics for Assessing a Software System's Maintainability," 337-344. Conference on Software Maintenance 1992.Orlando, FL, November 9-12, 1992. Los Alamitos, CA: IEEE Computer Society Press, 1992
- [10] Halstead, Maurice H. Elements of Software Science, Operating, and Programming Systems Series Volume 7. New York, NY: Elsevier, 1977
- [11] McCabe, Thomas J., "A Complexity Measure," IEEE Transactions on Software Engineering, SE-2 No. 4, pp. 308-320, December 1976
- [12] Kuipers, Tobias, Visser, Joost "Maintainability index revisited—position paper". 2007/01/01
- [13] F. B. e Abreu, "The MOOD Metrics Set," Proceedings of ECOOP'95 Workshop on Metrics, Aarhus, 1995, pp. 150-152.

- [14] Baroni, Aline & Braz, Sofia & Brito e Abreu, Fernando & Portugal, Nova. (2002). Using OCL to Formalize Object-Oriented Design Metrics Definitions.
- [15] B. Henderson-Sellers, L. Constantine, and I. Graham, "Coupling and Cohesion (towards a Valid Metrics Suite for Object-Oriented Analysis and Design)," *Object Oriented Systems*, Vol. 3, 1996, pp. 143-158.
- [16] A. Van Koten, A.R. Gray, an application of Bayesian network for predicting object-oriented software maintainability, *Information and Software Technology*, Jan. 2006, pp. 59–67.
- [17] Mohammed, Mawal & Elish, Mahmoud. (2013). A Comparative Literature Survey of Design Patterns' Impact on Software Quality. 2013 International Conference on Information Science and Applications, ICISA 2013. 1-7. 10.1109/ICISA.2013.6579460.
- [18] Ampatzoglou, Apostolos & Kritikos, Apostolos & Arvanitou, Elvira Maria & Gortzis, Antonis & Chatziasimidis, Fragkiskos & Stamelos, Ioannis. (2011). An empirical investigation on the impact of design pattern application on computer game defects. *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments, MindTrek 2011*. 10.1145/2181037.2181074.
- [19] Aversano, L. & Canfora, Gerardo & Cerulo, Luigi & Grosso, Concettina & Di Penta, Massimiliano. (2007). An empirical study on the evolution of design patterns. 385-394. 10.1145/1287624.1287680.
- [20] Osborne, Jason W. (2019) "Prediction in Multiple Regression," *Practical Assessment, Research, and Evaluation*: Vol. 7, Article 2. DOI: <https://doi.org/10.7275/7j20-gg86> Available at: <https://scholarworks.umass.edu/pare/vol7/iss1/2>
- [21] Hegedüs, Péter & Bán, Dénes & Ferenc, Rudolf & Gyimóthy, Tibor. (2012). Myth or Reality? Analyzing the Effect of Design Patterns on Software Maintainability. *Communications in Computer and Information Science*. 340. 138-145. 10.1007/978-3-642-35267-6\_18.
- [22] C. Zhang and D. Budgen, "What Do We Know about the Effectiveness of Software Design Patterns?" in *IEEE Transactions on Software Engineering*, vol. 38, no. 5, pp. 1213-1231, Sept.-Oct. 2012, doi: 10.1109/TSE.2011.79.
- [23] Alghamdi, Fatimah & Qureshi, M. Rizwan. (2014). Impact of Design Patterns on Software Maintainability. *International Journal of Intelligent Systems and Applications*. 6. 41-46. 10.5815/ijisa.2014.10.06.
- [24] Riaz, M., Mendes, E., & Tempero, E. (2009, October). A systematic review of software maintainability prediction and metrics. In *2009 3rd international symposium on empirical software engineering and measurement* (pp. 367-377). IEEE.

- [25] Coleman, D., Lowther, B. and Oman, P., 1995. The application of software maintainability models in industrial software systems. *Journal of Systems and Software*, 29(1), pp.3-16.
- [26] Aggarwal, Krishan K., Yogesh Singh, and Jitender Kumar Chhabra. "An integrated measure of software maintainability." *Annual Reliability and Maintainability Symposium. 2002 Proceedings (Cat. No. 02CH37318)*. IEEE, 2002.
- [27] Chen, Jie-Cherng, and Sun-Jen Huang. "An empirical analysis of the impact of software development problem factors on software maintainability." *Journal of Systems and Software* 82.6 (2009): 981-992.
- [28] Elish, Mahmoud O., and Karim O. Elish. "Application of treenet in predicting object-oriented software maintainability: A comparative study." *2009 13th European Conference on Software Maintenance and Reengineering*. IEEE, 2009.
- [29] Yamashita, Aiko, and Leon Moonen. "Exploring the impact of inter-smell relations on software maintainability: An empirical study." *2013 35th International Conference on Software Engineering (ICSE)*. IEEE, 2013.
- [30] Berns, Gerald M. "Assessing software maintainability." *Communications of the ACM* 27.1 (1984): 14-23.
- [31] Ash, D., Alderete, J., Oman, P. W., & Lowther, B. (1994, September). Using Software Maintainability Models to Track Code Health. In *ICSM (Vol. 94, pp. 154-160)*.
- [32] Chatterji, D., Carver, J. C., Kraft, N. A., & Harder, J. (2013, October). Effects of cloned code on software maintainability: A replicated developer study. In *2013 20th Working Conference on Reverse Engineering (WCRE)* (pp. 112-121). IEEE.
- [33] Kumar, B. (2012, September). A survey of key factors affecting software maintainability. In *2012 international conference on computing sciences* (pp. 261-266). IEEE.
- [34] Chen, C., Lin, S., Shoga, M., Wang, Q. and Boehm, B., 2018, July. How do defects hurt qualities? an empirical study on characterizing a software maintainability ontology in open source software. In *2018 IEEE International Conference on Software Quality, Reliability and Security (QRS)* (pp. 226-237). IEEE.
- [35] Atalag, K., Yang, H. Y., Tempero, E., & Warren, J. R. (2014). Evaluation of software maintainability with openEHR—a comparison of architectures. *International journal of medical informatics*, 83(11), 849-859.
- [36] Saraiva, J. (2013, May). A roadmap for software maintainability measurement. In *2013 35th International Conference on Software Engineering (ICSE)* (pp. 1453-1455). IEEE.

- [37] Kim, C. and Westin, S., 1988. Software maintainability: Perceptions of EDP professionals. *Mis Quarterly*, pp.167-185.
- [38] Abílio, R., Teles, P., Costa, H. and Figueiredo, E., 2012, September. A systematic review of contemporary metrics for software maintainability. In *2012 Sixth Brazilian Symposium on Software Components, Architectures and Reuse* (pp. 130-139). IEEE.
- [39] Pratap, A., Chaudhary, R. and Yadav, K., 2014, February. Estimation of software maintainability using fuzzy logic technique. In *2014 International Conference on Issues and Challenges in Intelligent Computing Techniques (ICICT)* (pp. 486-492). IEEE.
- [40] Sneed, H.M. and Kaposi, A., 1990, November. A study on the effect of reengineering upon software maintainability. In *Proceedings. Conference on Software Maintenance 1990* (pp. 91-99). IEEE.
- [41] Hegedus, P., 2013, September. Revealing the effect of coding practices on software maintainability. In *2013 IEEE International Conference on Software Maintenance* (pp. 578-581). IEEE.
- [42] Barbosa, N. and Hiramã, K., 2013. Assessment of software maintainability evolution using C&K metrics. *IEEE Latin America Transactions*, 11(5), pp.1232-1237.
- [43] Gupta, S. and Chug, A., 2020. Software maintainability prediction of open source datasets using least squares support vector machines. *Journal of Statistics and Management Systems*, 23(6), pp.1011-1021.
- [44] Anan, M., Saiedian, H. and Ryoo, J., 2009. An architecture-centric software maintainability assessment using information theory. *Journal of Software Maintenance and Evolution: Research and Practice*, 21(1), pp.1-18.
- [45] Heričko, T. and Šumak, B., 2023. Exploring Maintainability Index Variants for Software Maintainability Measurement in Object-Oriented Systems. *Applied Sciences*, 13(5), p.2972.
- [46] Orenyi, B.A., Basri, S. and Jung, L.T., 2012, November. Object-oriented software maintainability measurement in the past decade. In *2012 International Conference on Advanced Computer Science Applications and Technologies (ACSAT)* (pp. 257-262). IEEE.
- [47] Asadi, M. and Rashidi, H., 2016. A model for object-oriented software maintainability measurement. *International Journal of Intelligent Systems and Applications*, 8(1), p.60.
- [48] Haboush, A., Alnabhan, M., Al-Badareen, A., Al-Nawayseh, M. and El-Zaghmouri, B., 2014. Investigating Software Maintainability Development: A Case for ISO 9126. *International Journal of Computer Science Issues (IJCSI)*, 11(2), p.18.

- [49] Jain, P., Sharma, A. and Ahuja, L., 2018. Software Maintainability Estimation in Agile Software Development. *International Journal of Open Source Software and Processes (IJOSSP)*, 9(4), pp.65-78.
- [50] Soi, I.M., 1985. Software complexity: an aid to software maintainability. *Microelectronics Reliability*, 25(2), pp.223-228.
- [51] Suri, P.K. and Bhushan, B., 2007. Simulator for Software Maintainability. *IJCSNS International Journal of Computer Science and Network Security*. VOL7, (11), pp.216-220.
- [52] Punter, T., 1998. Developing an evaluation module to assess software maintainability. In *Proceedings of Conference on Empirical Assessment in Software Engineering (EASE)*.