

Predicate Calculus for Boolean Valued Functions. Part IX

Shunichi Kobayashi
Ueda Multimedia Information Center
Nagano

Summary. In this paper, we proved some elementary predicate calculus formulae containing the quantifiers of Boolean valued functions with respect to partitions. Such a theory is an analogy of usual predicate logic.

MML Identifier: BVFUNC17.

WWW: <http://mizar.org/JFM/Vol11/bvfunc17.html>

The articles [6], [9], [8], [7], [11], [10], [4], [5], [2], [1], and [3] provide the notation and terminology for this paper.

In this paper Y is a non empty set.

One can prove the following proposition

(3)¹ Let a be an element of $Boolean^Y$, G be a subset of $PARTITIONS(Y)$, and A, B, C be partitions of Y . If G is independent, then $\neg \exists_{\forall a, A, B, C} G \in \neg \forall_{\forall a, B, C, A} G$.

REFERENCES

- [1] Shunichi Kobayashi and Kui Jia. A theory of boolean valued functions and partitions. *Journal of Formalized Mathematics*, 10, 1998. http://mizar.org/JFM/Vol10/bvfunc_1.html.
- [2] Shunichi Kobayashi and Kui Jia. A theory of partitions, I. *Journal of Formalized Mathematics*, 10, 1998. <http://mizar.org/JFM/Vol10/partit1.html>.
- [3] Shunichi Kobayashi and Yatsuka Nakamura. A theory of boolean valued functions and quantifiers with respect to partitions. *Journal of Formalized Mathematics*, 10, 1998. http://mizar.org/JFM/Vol10/bvfunc_2.html.
- [4] Konrad Raczkowski and Paweł Sadowski. Equivalence relations and classes of abstraction. *Journal of Formalized Mathematics*, 1, 1989. http://mizar.org/JFM/Vol1/eqrel_1.html.
- [5] Andrzej Trybulec. Semilattice operations on finite subsets. *Journal of Formalized Mathematics*, 1, 1989. <http://mizar.org/JFM/Vol1/setwiseo.html>.
- [6] Andrzej Trybulec. Tarski Grothendieck set theory. *Journal of Formalized Mathematics*, Axiomatics, 1989. <http://mizar.org/JFM/Axiomatics/tarski.html>.
- [7] Andrzej Trybulec. Function domains and Fränkel operator. *Journal of Formalized Mathematics*, 2, 1990. <http://mizar.org/JFM/Vol2/fraenkel.html>.
- [8] Zinaida Trybulec. Properties of subsets. *Journal of Formalized Mathematics*, 1, 1989. http://mizar.org/JFM/Vol1/subset_1.html.
- [9] Zinaida Trybulec and Halina Świączkowska. Boolean properties of sets. *Journal of Formalized Mathematics*, 1, 1989. <http://mizar.org/JFM/Vol1/boole.html>.
- [10] Edmund Woronowicz. Interpretation and satisfiability in the first order logic. *Journal of Formalized Mathematics*, 2, 1990. http://mizar.org/JFM/Vol2/valuat_1.html.

¹ The propositions (1) and (2) have been removed.

- [11] Edmund Woronowicz. Many-argument relations. *Journal of Formalized Mathematics*, 2, 1990. <http://mizar.org/JFM/Vol2/margrel1.html>.

Received November 4, 1999

Published March 26, 2002
