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**A Logical Characterisation of the Computational
Complexity Class BPP**

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Abstract We give a characterisation of the class of languages decided by a probabilistic Turing machine in polynomial time (BPP) in terms of formulas in first-order logic with a least fixed point operator, and a special relation-counting operator which we define. We show that BPP is equivalent (modulo a suitable encoding of logical structures) to the set of finite structures which satisfy some such formula having a specific semantic property.