This department welcomes short notes and problems believed to be new. Contributors should include solutions where known, or background material in case the problem is unsolved. Send all communications concerning this department to I.G. Connell, Department of Mathematics, McGill University Montreal, P.Q.

A REMARK ON R_1 SPACES

B.V. Rao

A topological space $(X, \mathfrak{J})$ is an R_1 - space if and only if $x, y \in X$, and $\{\bar{x}\} \neq \{\bar{y}\} \Longrightarrow \exists\ U, V \in \mathfrak{J}$ such that $U \cap V = \phi$ and $x \in U$, $y \in V$, where $\bar{A}$ denotes closure of the set A. Let $(X, \mathfrak{J})$ be an R_1 - space. Define

$$x \sim y \text{ if and only if } \{\bar{x}\} = \{\bar{y}\} .$$

Denote by $(\tilde{X}, \tilde{\mathfrak{J}})$ the quotient space (Refer: J.L. Kelley, "General Topology"). Let r be the usual projection map of X onto $\tilde{X}$. Then

PROPOSITION.

(i) r is open, closed continuous map.

(ii) $(\tilde{X}, \tilde{\mathfrak{J}})$ is Hausdorff space. There is an algebraic isomorphism between the function spaces $C(X)$ and $C(\tilde{X})$.

(iii) $(X, \mathfrak{J})$ has property P if and only if $(\tilde{X}, \tilde{\mathfrak{J}})$ has, where P may be any one of the following: Lindelöf, compact, locally compact, regular, completely regular, normal, paracompact, countably paracompact, second countable, first countable, separable.

https://doi.org/10.4153/CMB-1967-042-5 Published online by Cambridge University Press

From the above proposition - which is easy to prove - and from the well known properties of Hausdorff spaces, almost all the results of M.G. Murdeshwar and S.A. Naimpally ("R_1-Topological Spaces", this journal, 1966, Vol. 9, No. 4, p.521) will immediately follow.

Indian Statistical Institute

https://doi.org/10.4153/CMB-1967-042-5 Published online by Cambridge University Press