Pal, Manindra Chandra; **Bhattacharyya, P.**
Feeble and strong forms of preirresolute functions. (English) Zbl 0885.54010
Bull. Malays. Math. Soc., II. Ser. 19, No. 2, 63-75 (1996).

A subset A of a topological space X is said to be pre-open if $A \subset \mathrm{Int}(\mathrm{Cl}(A))$ [*A. S. Mashhour*, *M. E. Abd El-Monsef* and *S. N. El-Deeb*, Proc. Math. Phys. Soc. Egypt 53, 47-53 (1982; Zbl 0571.54011)]. A is preclosed if $X - A$ is pre-open and $\mathrm{Pcl}(A) = \bigcap\{B : B \text{ preclosed in } X \text{ and } B \supset A\}$ [*N. El-Deeb*, *I. A. Hasanein*, *A. S. Mashhour* and *T. Noiri*, Bull. Math. Soc. Sci. Math. Répub. Soc. Roum., Nouv. Sér. 27(75), 311-315 (1983; Zbl 0524.54016)]. A function $f : X \to Y$ is said to be pre-irresolute [*I. L. Reilly* and *M. K. Vamanamurthy*, Acta Math. Hung. 45, 27-32 (1985; Zbl 0576.54014)] if $f^{-1}(V)$ is pre-open for every pre-open set V of Y. In this paper two forms of pre-irresolute functions are introduced.

Definition: A function $f : X \to Y$ is said to be quasi-pre-irresolute (strongly pre-irresolute) at $x \in X$ if for each pre-open set V containing $f(x)$ there exists a pre-open set U of X containing x such that $f(U) \subset \mathrm{Pcl}(V)$ ($\mathrm{Pcl}(U) \subset V$).

Some characterizations and their basic properties are obtained. The intrinsic connection with other weakened forms of continuity (precontinuity, quasi-precontinuity or almost weak continuity, pre-irresoluteness and α-irresoluteness) are also studied.

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