

# [A near rings has been developed much](https://assignbuster.com/a-near-rings-has-been-developed-much/)

A near-ring is an algebraic structure similarto a ring but satisfying fewer axioms. The theory of near-ringsenjoys the privilege of not only being deep rooted in many branches ofmathematics like geometry, the theory of automata, non-abelian homologicalalgebra, algebraic topology etc, but also of prossessing fascinating andchallenging areas of current mathematical research. In fact, the time seems reasonablynear for an historically noteworthy combination of the algebraic theory of nearrings with the fields of nonlinear differential equations, functional analysisand analysis.

Twentieth century mathematics has already started revealing thediscipline of mathematics as representing the ultimate in abstraction, formalization and analytic creativity. The theory of near ring is a fastgrowing branch of abstract algebra in Mathematics. In 1905, L. E.

Dickson17 constructedthe first proper near field by ‘ distoring’ the multiplication in a field. Thesetypes of near fields are now called Dickson near-fields.  Two years later, Veblen andWedderburn used near-fields to co-ordinate geometric planes. In a monumentalpaper, H. Zassenhaus showed in 1936 that all finite near-fields are Dicksononce. Fifty one years later, Zassenhaus showed that there do exit non-Dicksoninfinite near-fields of every prime characteristic. Since then the theory of near ringshas been developed much and at present it becomes a sophisticated theory withnumerous application in various areas namely geometries interpolation theory, group theory, polynomials and matrices. Designs are an important application ofnear rings.

The use of planner near-rings to get excellent balanced incompletedesigns and experimental designs is probably the best known application ofnear-ring to the “ outside world”. In recent years its connection with computerscience, automata, dynamical systems, rooted trees, coding theory, cryptographyetc. have also been dealt with. A near-ring is exactly what is needed todescribe the structure of the endomorphisms of various mathematical structuresadequately. Near-rings are generalisations of rings.

It is natural to generalize various concepts of rings to near-rings. Betch, Beidleman, Ramakotaiah, Ligh, Clay, Satyanarayana, Chowdhury and others hadgeneralised various concepts to near-rings. Due to non-ring character of anear-ring the results have their own beauty. Extensive research work are beingcarried out on near-rings and near-ring groups in which structure theory is onearea of importance. Oswald, Beildman, Ligh, Chowdhury and other have doneconsiderable work on various aspects of near-rings with chain conditions onannihilators. In 70’s Oswald33 has obtained the structure theory ofnear-rings in which each near-ring subgroup is principal. In recent years Pitz34, Meldrum and others have obtained elegantly the relations between near-rings andautomata, near-rings and dynamical system, semi-near-rings and rooted trees. D.

W. Blackett7 studied simple and semi-simple near-rings around 1953. S. C. Choudhury, Mason and other have generalised that concept to strictlysemi-simple near-rings.

The first ones to use the name “ near ring” wereZassenhaus in 1936 and Blackett and P. Jordan in 1950. Finally, the fiftiesbrought the start of a rapid development of the theory of near-rings.

If in aring  we ignore the commutativity of ‘+’ and one of thedistributive laws,  becomes a near ring. If we do not stipulatethe left distributive laws,  is a right near-ring. The set of all mappings from a group (  to itself with pointwise addition andcomposition of mappings serves as a natural example of a near–ring and indeedall near rings arise as sub near-rings of such near-rings.             The concept of fuzzy set wasintroduced by Zadeh47 in 1965, utilizing which Rosenfeld37 in 1971 definedfuzzy subgroups. Since then, the different aspects of algebraic systems infuzzy settings had been studied by several authors. The notion of fuzzysubnear-ring and fuzzy ideals of near-rings was introduced by Abou Zaid Salah1.

I want to generalize the different kinds of fuzzy ideals in near-ring and thereproperties. We also investigate some of its properties with example.