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	Nota di contenuto	Chapter 1. Preliminaries -- Chapter 2. Structure Theory of Semisimple Rings -- Chapter 3. Representation Theory of Finite Groups -- Chapter 4. Representation Theory of the Symmetric Group -- Chapter 5. Symmetric Polynomials -- Chapter 6. Schur-Weyl Duality and the Relationship Between Representations of Sd and GLn (C) -- Chapter 7. Structure Theory of Complex Semisimple Lie Algebras -- Chapter 8. Representation Theory of Complex Semisimple Lie Algebras -- Chapter 9. Generalities on Algebraic Groups -- Chapter 10. Structure Theory of Reductive Groups -- Chapter 11. Representation Theory of Semisimple Algebraic Groups -- Chapter 12. Geometry of the Grassmannian, Flag and their Schubert Varieties via Standard Monomial Theory -- Chapter 13. Singular Locus of a Schubert Variety in the Flag Variety SLn=B -- Chapter 14. Applications -- Chapter 15. Free Resolutions of Some Schubert Singularities -- Chapter 16. Levi Subgroup Actions on Schubert Varieties, and Some Geometric Consequences.
	Sommario/riassunto	This book discusses the importance of flag varieties in geometric objects and elucidates its richness as interplay of geometry, combinatorics and representation theory. The book presents a discussion on the representation theory of complex semisimple Lie algebras, as well as the representation theory of semisimple algebraic

groups. In addition, the book also discusses the representation theory of symmetric groups. In the area of algebraic geometry, the book gives a detailed account of the Grassmannian varieties, flag varieties, and their Schubert subvarieties. Many of the geometric results admit elegant combinatorial description because of the root system connections, a typical example being the description of the singular locus of a Schubert variety. This discussion is carried out as a consequence of standard monomial theory. Consequently, this book includes standard monomial theory and some important applications—singular loci of Schubert varieties, toric degenerations of Schubert varieties, and the relationship between Schubert varieties and classical invariant theory. The two recent results on Schubert varieties in the Grassmannian have also been included in this book. The first result gives a free resolution of certain Schubert singularities. The second result is about certain Levi subgroup actions on Schubert varieties in the Grassmannian and derives some interesting geometric and representation-theoretic consequences.