This thesis concerns following hyphotesis: whenever I is two-sided idempotent ideal in group ring $\mathbb{Z}S_n$, such that $I\mathbb{Q}$ is non-trivial ideal of $\mathbb{Q}S_n$, $I\mathbb{Q}$ has to be so called augmentation ideal. The vylidity of this hypothesis would give us weak version of the fact that in the case of solvable group G, there are no two-sided non-trivial idempotent ideals in $\mathbb{Z}G$. At first I desctibe methodt how to calculate idempotent ideals in $\mathbb{Z}S_n$ and then show that hypothesis holds in the case of S_5, but fail in the case of $\mathbb{Z}S_5$. In theoretic part, I firstly switch to local point of view and describe two-sided idempotent ideals in $\mathbb{Z}_{(p)}S_n$, for primes p dividing order of group S_n, as trace ideals of finitely generated projective $\mathbb{Z}_{(p)}S_n$-modules. Next, I describe functor $-\otimes_{\mathbb{Z}_{(p)}}\mathbb{Q} : Proj(\mathbb{Z}_{(p)}S_n) \to Mod(\mathbb{Q}S_n)$ using the language of Grothendiecks groups by matrix E. Matrix E shows to be transposition of decomposition matrix, which we can calculate using Braeur's character.