Auction: we have a set of buyers and sellers in the market the more the situation becomes close to the perfect market scenario. An exterme opposite case is where there is only a single seller_an auction.
The auction rules define the social choice, i.e. the identity of the winner.
We have a set of alternatives (situations) A and a set n of players I.
We have a valuation function $v_i : A \longrightarrow R$, where $v_i(a)$ denotes the "value" (or valuation) that i assigns to alternative a being chosen. The value is in terms of some currency. We assume that if a is chosen and then player i is additionally given some quantity m of money, then its utility is $u_i = v_i(a) + m$, this utility beging the abstraction of what the player desires and aims to maximize. Utilities of this form are called quasilinear preferences denoting the separable and linear dependence on money.

Vickery's Second Price Auction

we have a single item to sell and we have n players.
Each player i has valuation v_i that he is "willing to pay" for this item. If he wins the item, he has to pay some price p for this item, then his utility is $w_i - p$, while if someone else wins the item then is utility is 0. thus the set of alternatives here is the set of possible winners, $A = \{i\text{-wins} \mid i \in I\}$ and the valuation of each bidder i is $v_i(i\text{-wins}) = w_i$ and $v_i(j\text{-wins}) = 0$ for all $j \neq i$.
A social choice, i.e., an aggregation of the preferences of the different participants toward a single joint decision, is to allocate the item to the player who values it highest: choose i-wins, where $i = \arg\max_j w_j$.
However we do not know all values, which are private, and we want to make sure that our mechanism decides on the allocation_ the social choice _ in a way that cannot be strategically manipulated (be truthful or strategy proof or Incentive comp.)
our degree of freedom is the definition of the payment by the winner.