

Central Asian University

Data Structures and Algorithms, Fall - 2024

Custom “*Hand by Hand*” Queue data structure

Due date: 29th September;

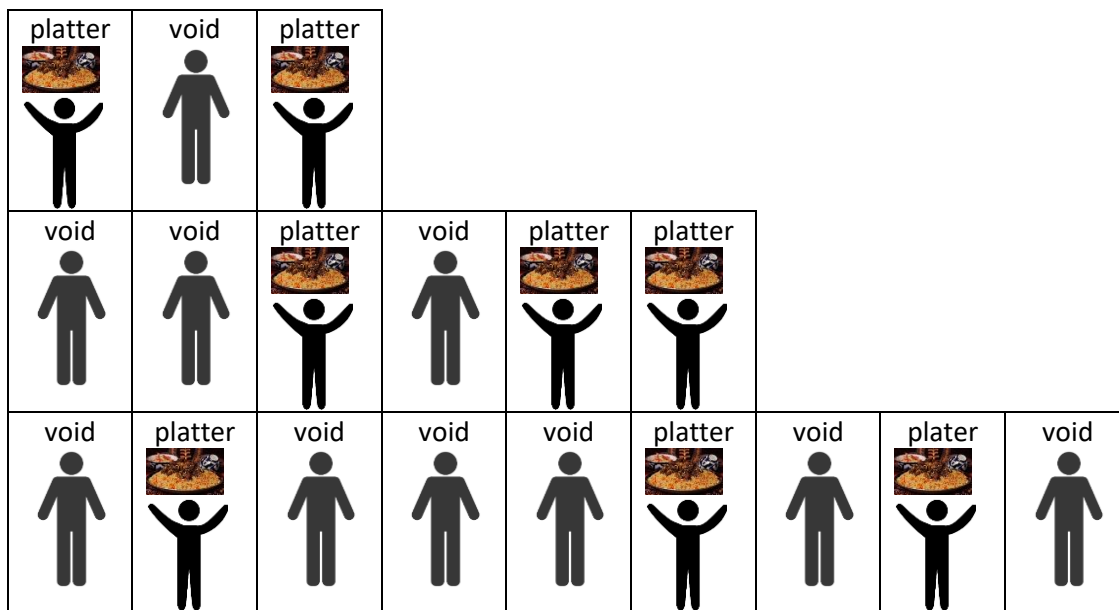
Experimental assignment carrying 7%*

*First 5 students finished successfully shall get full score (7%), others get 5%

Origin: In Uzbekistan, during traditional morning pilaf serving, usually people stand side by side to pass the platter (lagan) until it reaches the table. This way of gathering can be a good example of queue data structure except with some minor variations.

People gather to form a moving chain and this chain can grow and shrink. Usually, depending on the distance it needs to reach. Also, usually platter passes one at a time where chain holders shall wait or stay void to get next platter to pass.

This form of custom data structure shall be the first experimental assignment given for Data Structures and Algorithms course for Fall, 2024. The name we give for this custom data structure is (H2Q) Hand By Hand Queue or because tradition is part of wedding ceremonies another short name is **QudaQueue** (From Uzbek Quda translates as *family members in law*).



We can see from above illustration that, first row we have three chain members, two of them carry platter and one is void. In second scenario, we have more chain members and more platters, end of the chain is stuck with two platters. Last scenario shows that we have long chain of members and few members in between are void.

There is not one optimal solution. But, your program should mimic the given description.