

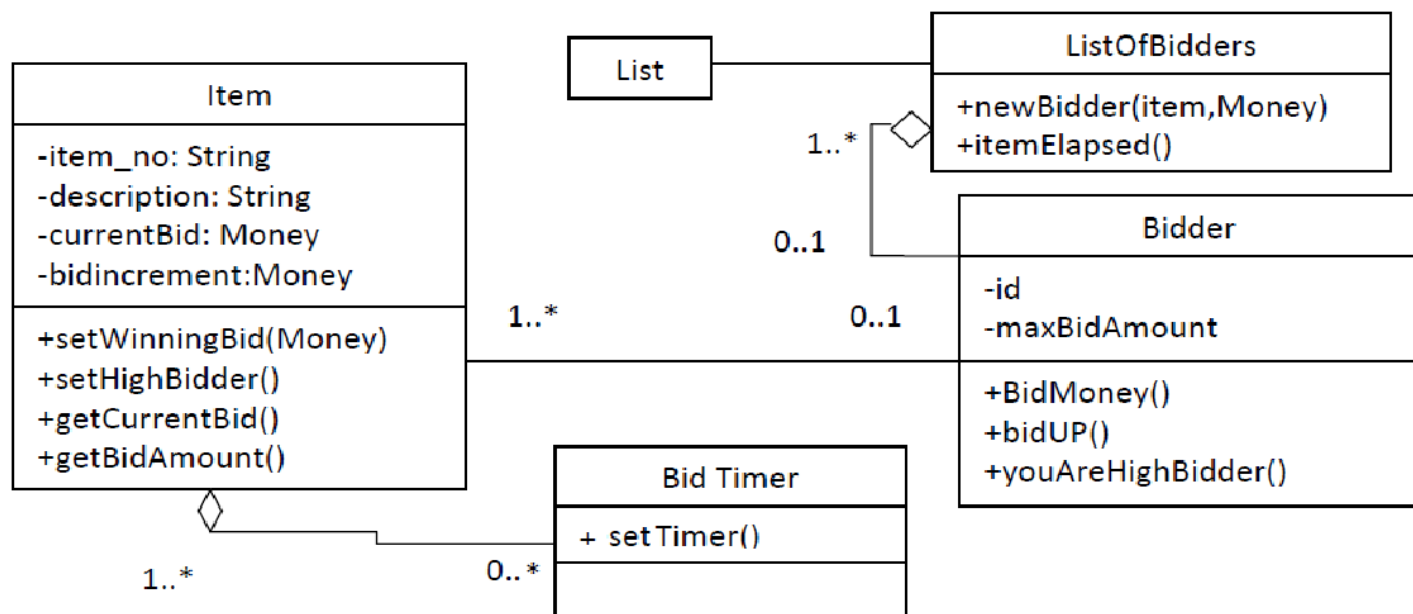
## Practice Assignment: C++/JAVA Programming

### Topic: Object oriented concepts and programming

**Q1.** A class diagram is shown in Fig. 2.1. Implement the classes, appropriate relationships, and respective member functions shown in the class diagram. If needed, define member functions in appropriate classes to answer following queries:

- (a) Find the item and Bidder with highest bid out of a stock of 10 items
- (b) List the items with current bid amount (if any).

**To implement, you can add/update attributes and functions in the below class diagram as required.**



**Q2.** Mobile phones are manufactured by many companies, e.g. Samsung, Sony, etc. Usually performance of these mobile phones are measured by memory (in GB), front camera (in MP), rear camera (in MP), and battery backup (in Hr) and accordingly price of the mobile phones varies. To operate mobile phones, users need sim-card which is to be issued by service provider, e.g. Airtel, Vodafone, etc. Besides the storage capacity, each sim is uniquely identified by the Mobile Number. When a sim is placed into a mobile, then only a mobile is functional otherwise not. Users need to purchase mobile as well as sim to make calls, use internet, etc. In each such phone, user can store contact details of his/her friends in the mobile storage or sim storage. To make a call, user is required to search the mobile number of his/her friend from the contact list (either of phone or of sim or of both). Whenever a call is made from one user (say X) to another user (say Y), it is required to display the message –Airtel/Vodafone/etc. user with mobile no. XXXXXX is calling|| on the mobile screen of Y. Record of this call is to be



stored into both users mobile phone: for X, it is outgoing and for Y, it is incoming. Further, a user may have maximum 5 bank accounts, where he/she can perform the transactions (either deposit or withdrawal). Withdrawal is based on the available balance in an account of the user. Based on the available balance in all accounts of a user, he/she decides whether a specific mobile can be purchased or not. Draw the class diagram and implement it in C++ and answer following: (a) Who are the users capable enough to purchase a specific mobile phone model? (b) Name the user who has made maximum call to a user (say Y, here Y can be called by many user).

