

1. Suppose a new table called CustomerBill has been added to the Library database. The create table statement for the table is shown below.

```
create table CustomerBill(billNum serial primary key, amount money, billDate date, cid int not null, foreign key(cid) references Customer(cid))
```

Write a stored procedure called makeBill that is passed a customer id, a start date and an end date. The procedure calculates the total fines the customer owes between the start date and the end date inclusive and generates a new CustomerBill row for that customer. The billDate value for the new row is the current date. For example if a call to makeBill is passed customer id 10 and the dates 2021-02-01 (February 1, 2021) and 2021-02-28 and customer 10 has fines of \$1.00, \$0.75 and \$2.25 for books returned on 2021-02-01, 2021-02-12 and 2021-02-28 respectively then the procedure inserts a row into the CustomerBill table containing the values (4.00, 2021-03-05, 10) (assuming March 5, 2021 is the current date). Remember since billNum is of type serial a value will be assigned to the billNum attribute of the new row by the database.

2. Let the Universal table be $R = \{A, B, C, D, E, F, G, H\}$

Let $FD = \{AE \rightarrow B, B \rightarrow C, C \rightarrow D, CF \rightarrow DE, CH \rightarrow D, D \rightarrow E, DE \rightarrow F, EFG \rightarrow D, F \rightarrow G, FH \rightarrow C\}$ be the functional dependency set

A. What is the closure of ABH?

B. Is ABH a super key?

C. Is ABH a key? Why?