20

SAD - CT - 3

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1. Suppose you are investing $3000, $4000, and $4000 at present, after 3 years and after 4 years respectively. In return after 2, 3, 4 and 5 years you will receive Revenue $2100, $4020, $6000 and $9000 respectively. **[10]**

Find out Profit/Loss through the Net Present Value (NPV) Method Consider bank interest 10%

1

Interest, $r = 10\% = 0.1$

$$\text{Investment} = 3000 + \frac{4000}{(1+0.1)^3} + \frac{4000}{(1+0.1)^4}$$

$$= 8737.30$$

$$\text{Return} = \frac{2100}{(1+0.1)^2} + \frac{4020}{(1+0.1)^3} + \frac{6000}{(1+0.1)^4} + \frac{9000}{(1+0.1)^5}$$

$$= 14442.19$$

$\therefore$ Net present value = Return − Investment

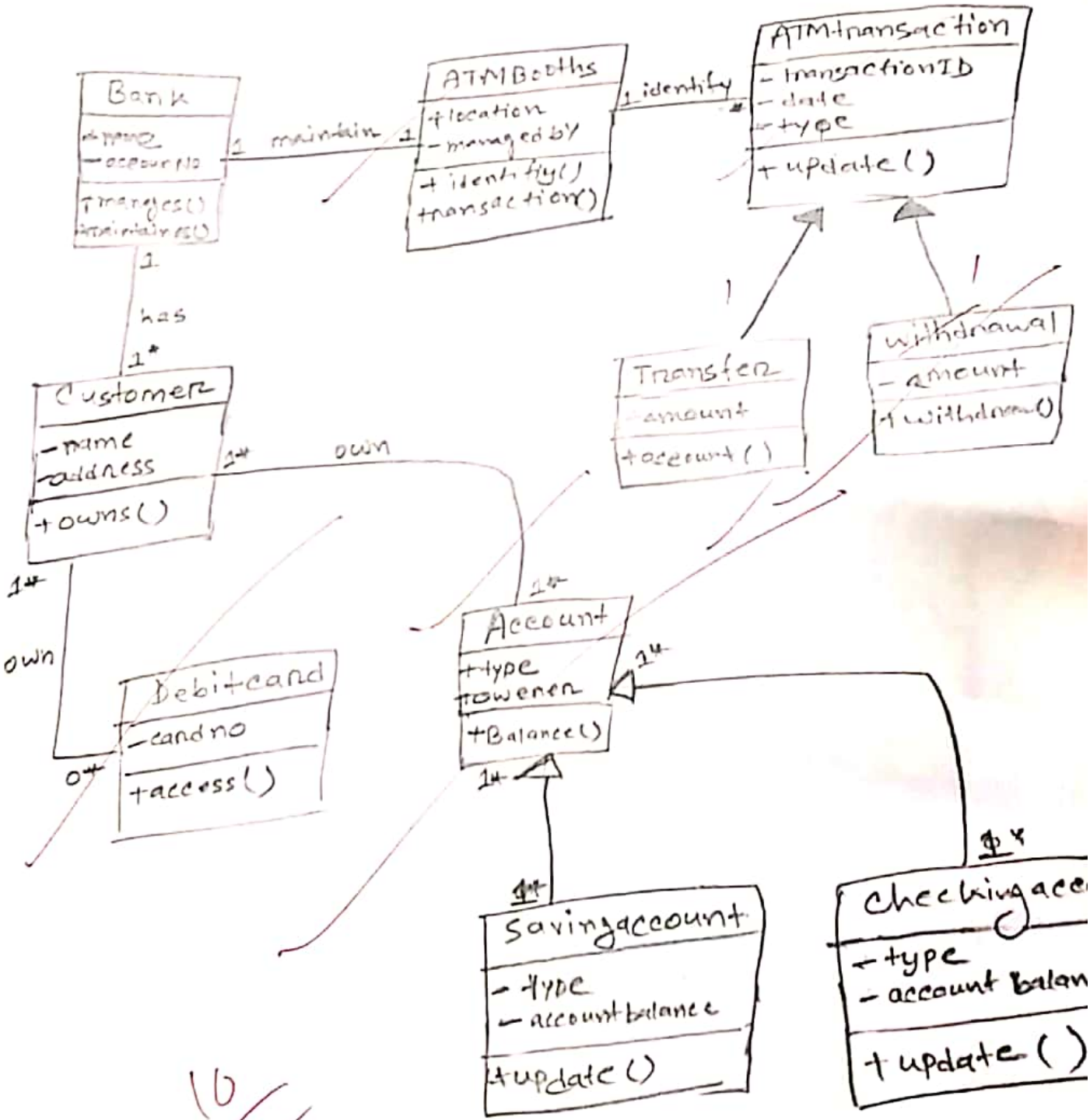
$= 14442.19 - 8737.30$

$= 5704.89$ $\therefore$ NPV > 0 → Get profit

$\therefore$ profit = $5704.89.

10

2. Draw a class diagram for the following scenario: The banks maintain the ATM booths and all ATM transactions are made by the ATMs. The transactions are of ***two kinds***, one is a transfer and another one is withdrawal. Besides, the customer has a bank account and owns a debit card. The cards are managed by the banks. All the transactions are related to the owners account as any debit or credit takes place on the owners account. The accounts can be a ***savings account or a checking account***. Now model this scenario by UML class diagrams with appropriate relationships and hierarchy. **[10]**



10