

EXPENSE REIMBURSEMENT SYSTEM (EXP)

EXP is an expense reimbursement system used in a large trading firm. EXP assists the sales director of the firm in determining the fee to be charged to each senior sales manager or sales manager for any “excessive” mileage in the use of the company car, and in processing reimbursement requests regarding various kinds of expenses such as airfare, hotel accommodation, meals, and phone calls. A sales staff uses EXP to make his claim at the end of each month.

1. Levels of Sales Staff

There are three levels of sales staff who are related to EXP: senior (sales) manager, (sales) manager, and (sales) supervisor.

2. Company Car and Allowable Mileage

For each senior manager or manager, he/she will be given a company car (for business or personal use) with a monthly *allowable* mileage (x km). For a senior manager, $x = 4,000$; for a manager, $x = 3,000$. Given a senior manager or a manager, if his/her *actual* monthly mileage (y km) is not larger than his/her respective x , he/she does not need to pay any fee to the firm for the use of the company car. However, if $y > x$, then the senior manager or the manager needs to pay a fee to the firm according to the following scheme:

<u>Level of Sales Staff</u>	<u>Fee Paid to the Firm</u>	<u>Condition</u>
Senior Manager	$\$5 \times (y - x)$	if $y > x$, where $x = 4000$
Manager	$\$8 \times (y - x)$	if $y > x$, where $x = 3000$

Note that a supervisor is not entitled to the above benefit, because he/she will not be given a company car.

3. Airfare Reimbursement

All the three levels of sales staff are entitled to airfare reimbursement (in full amount) if the following requirement is met:

<u>Level of Sales Staff</u>	<u>Requirement</u>
Senior Manager	No requirement
Manager	Monthly sales amount $\geq \$50,000$
Supervisor	Monthly sales amount $\geq \$80,000$

The “monthly sales amount” refers to the sales figure for the month when the airfare is incurred. For example, if the airfare is incurred in June 2013, EXP will consider the monthly sales amount earned by the concerned staff in June 2013, in order to determine the eligibility of airfare reimbursement.

4. Reimbursements Other Than Airfare

Sales staff members of any level are entitled to this reimbursement benefit (in full amount), provided that their monthly sales amounts are not less than \$100,000.

Similar to airfare reimbursement, monthly sales amounts refer to the sale figures for the month when the above reimbursements (other than airfare) are incurred.

5. Input Screens and Input Fields

There are two input screens, through which the reimbursement requests and other related details (such as the staff ID, staff name, staff level, and actual monthly mileage) for each staff member are entered into the system. The first input screen allows the user to enter the following information into EXP:

- (a) Staff ID
- (b) Staff name
- (c) Staff level (that is, senior manager, manager, or supervisor)
- (d) Actual mileage for the month (applicable only to senior managers or managers)
- (e) Monthly sales amount
- (f) Airfare

Input item (d) above will only be available for input if staff level is “senior manager” or “manager”.

If EXP detects that the monthly sales amount is not less than \$100,000, then the second screen will automatically be displayed, allowing the user to enter the following information:

- (g) Other expenses

6. System Output

For each staff member:

- (a) Staff ID
- (b) Staff name
- (c) Staff level (that is, senior manager, manager, or supervisor)
- (d) Total reimbursement amount, which is equal to (Reimbursement amount for airfare + Reimbursement amount for other expenses – Fee to be paid back to the firm due to the excess mileage) for senior managers or managers, and equal to (Reimbursement amount for airfare + Reimbursement amount for other expenses) for supervisor.

For “total reimbursement amount”, a positive value means that money has to be paid to the staff member by the firm, whereas a negative value means that money has to be paid to the firm by the staff member.

7. A complete example

Suppose there is a senior manager, whose name is Jerry, staff ID is 001. At the end of July, he logged in EXP and entered the following information:

- Staff level: senior manager
- Actually mileage (of July): 5000km
- Airfare (of July): \$2000
- Monthly sales amount (of July): \$150,000

Since Jerry's monthly sales amount is higher than the requirement of \$100,000, he is entitled to claim other expense. Thus, he entered his other expense of July as follows.

- Other expenses (of July): \$500

Refer to Section 2, a senior manager is allowed to have at most 4000km for free. But after 4000km, he needs to pay back to the company for his excessive usage. Jerry used 5000km in July, thus he needs to pay back to the company for the excessive 1000km. The payback amount is $\$5 \times (5000 - 4000) = \5000 . Refer to Section 3, the company does not have any requirement on the monthly sales amount for senior managers, thus Jerry will have his airfare (\$2000) reimbursed. Finally, with regard to the other expense, since Jerry's monthly sales amount is \$150,000 which is higher than the requirement of \$100,000, he will have his other expense in July (\$500) reimbursed. In summary, the total output of Jerry's claim is calculated as follows.

$$\text{total} = \$2000 + \$500 - \$5000 = -\$2500$$

In other words, Jerry needs to pay back to the company \$2500 for July.