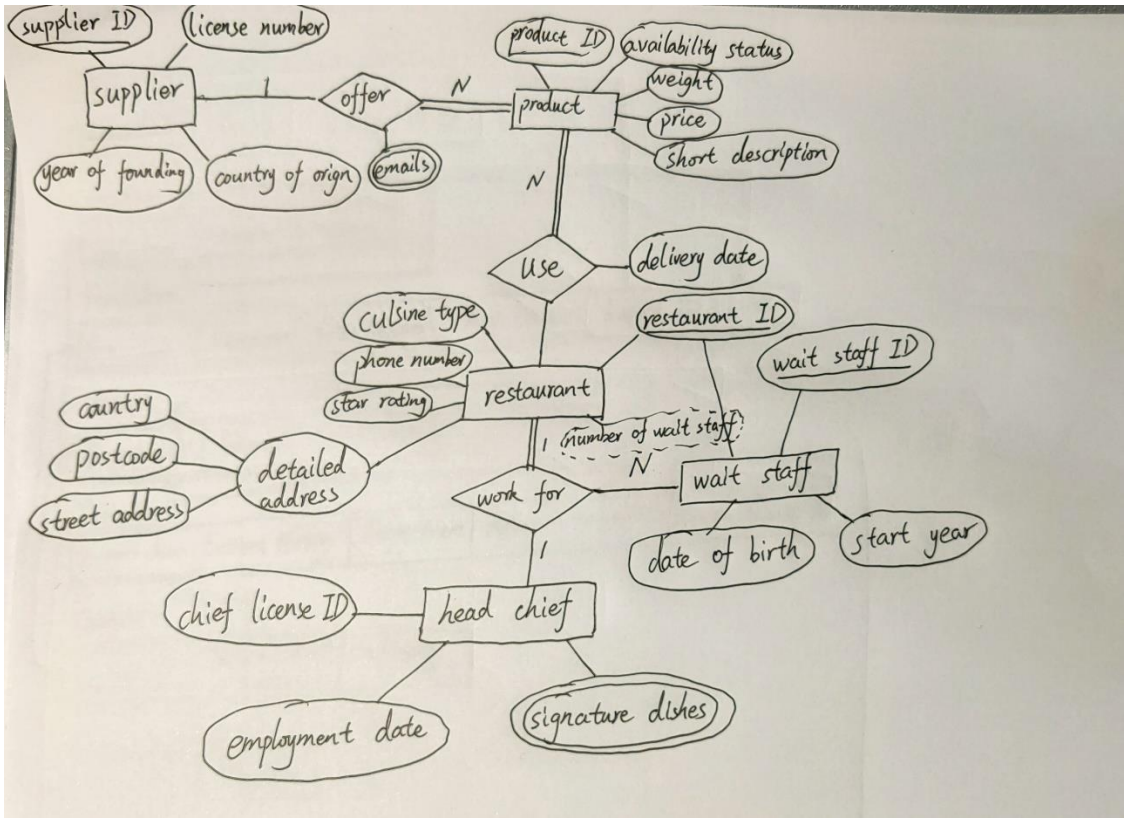
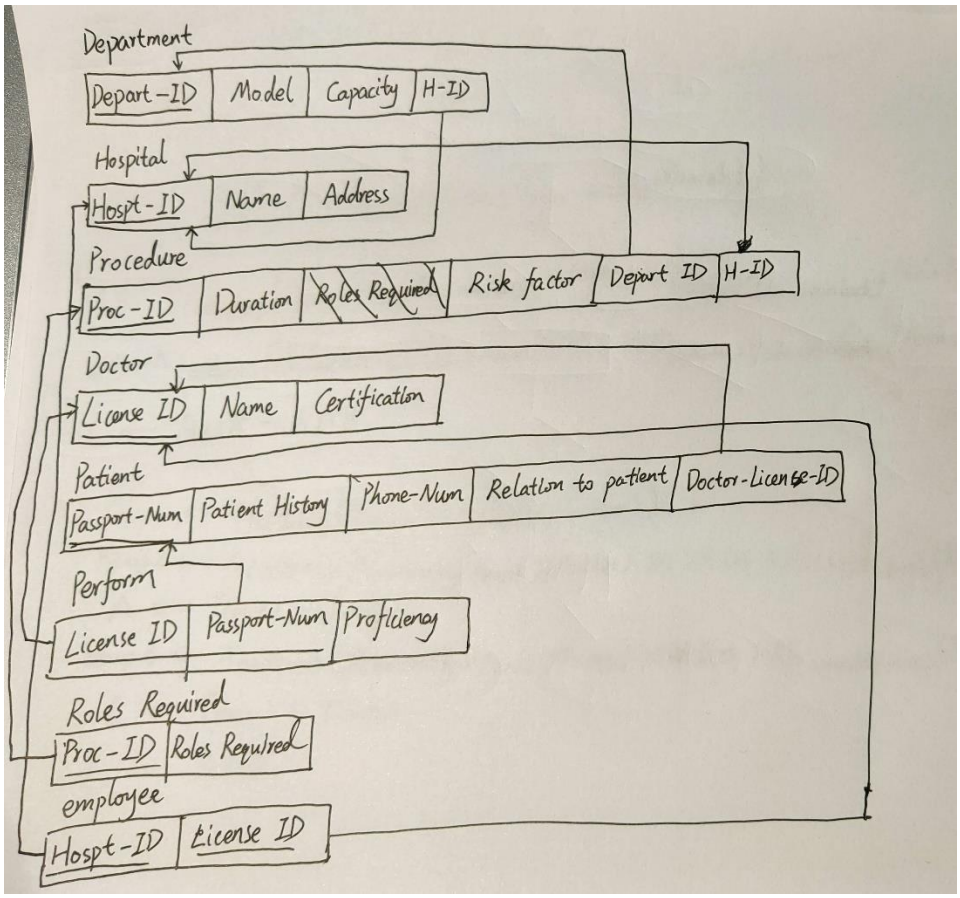
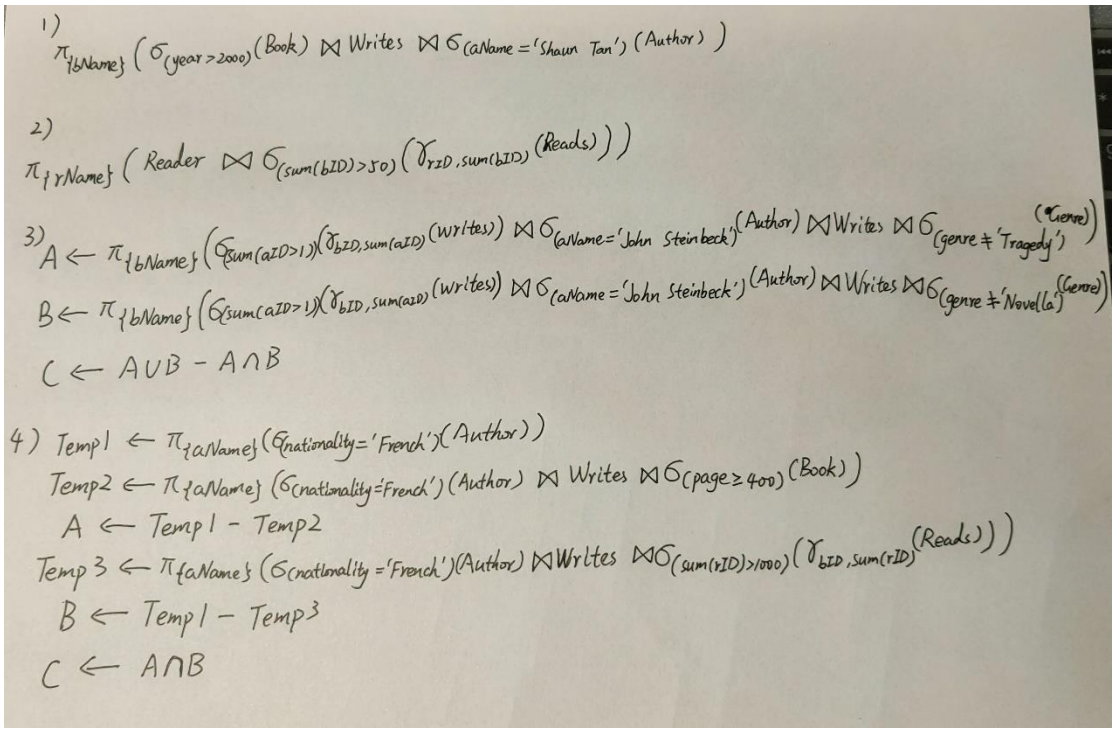
Question 1:



Question2:



Question3:


1)
$\pi_{\{bName\}}(\sigma_{(year>2000)}(Book) \bowtie Writes \bowtie \sigma_{(aName='Shaun\ Tan')}(Author))$
2)
$\pi_{\{rName\}}(Reader \bowtie \sigma_{(sum(bID)>50)}(\gamma_{rID,sum(bID)}(Reads)))$
3)
$A \leftarrow \pi_{\{bName\}}(\sigma_{(sum(aID)>1)}(\gamma_{bID,sum(aID)}(Writes)) \bowtie \sigma_{(aName='John\ Steinbeck')}(Author) \bowtie Writes \bowtie \sigma_{(genre \neq 'Tragedy')}(Genre))$
$B \leftarrow \pi_{\{bName\}}(\sigma_{(sum(aID)>1)}(\gamma_{bID,sum(aID)}(Writes)) \bowtie \sigma_{(aName='John\ Steinbeck')}(Author) \bowtie Writes \bowtie \sigma_{(genre \neq 'Novella')}(Genre))$
$C \leftarrow A \cup B - A \cap B$
4) $Temp1 \leftarrow \pi_{\{aName\}}(\sigma_{(nationality='French')}(Author))$
$Temp2 \leftarrow \pi_{\{aName\}}(\sigma_{(nationality='French')}(Author) \bowtie Writes \bowtie \sigma_{(page \geq 400)}(Book))$
$A \leftarrow Temp1 - Temp2$
$Temp3 \leftarrow \pi_{\{aName\}}(\sigma_{(nationality='French')}(Author) \bowtie Writes \bowtie \sigma_{(sum(rID)>1000)}(\gamma_{bID,sum(rID)}(Reads)))$
$B \leftarrow Temp1 - Temp3$
$C \leftarrow A \cap B$