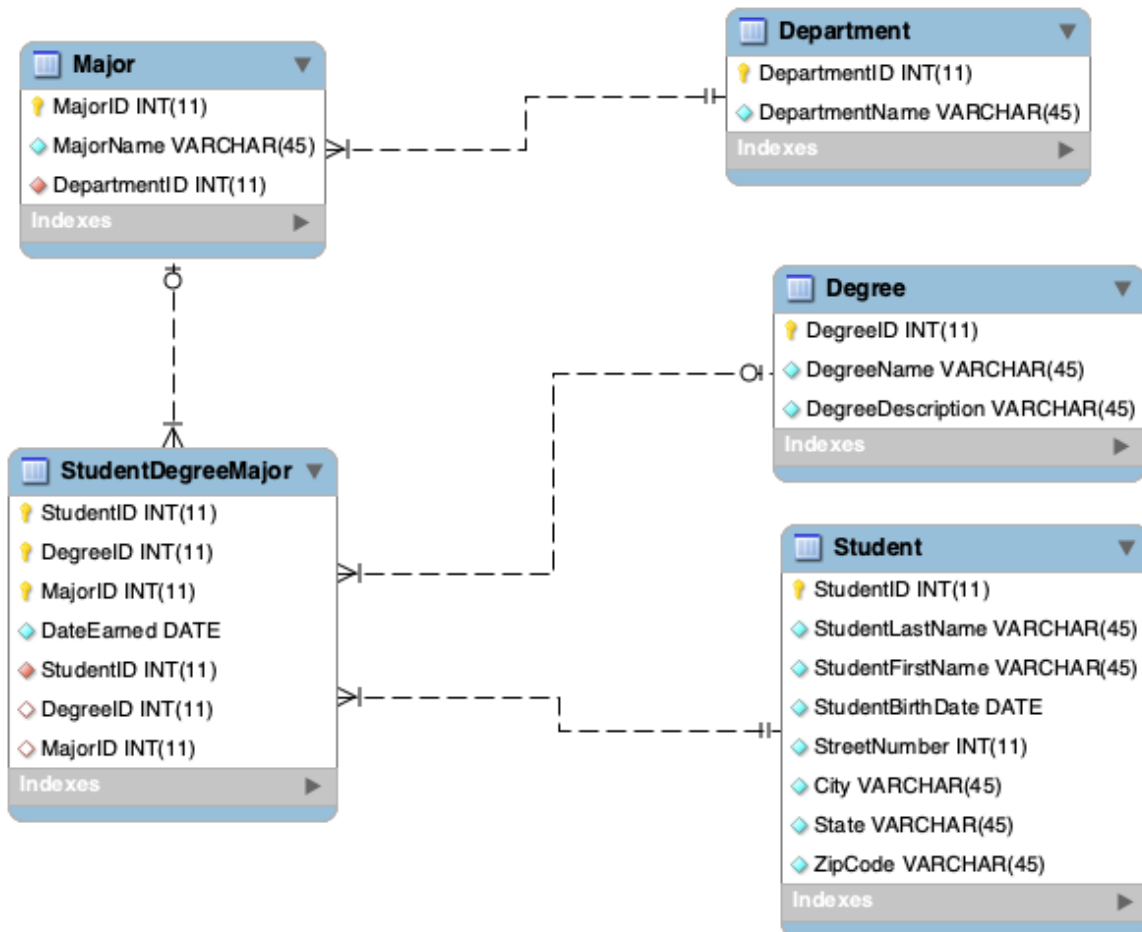
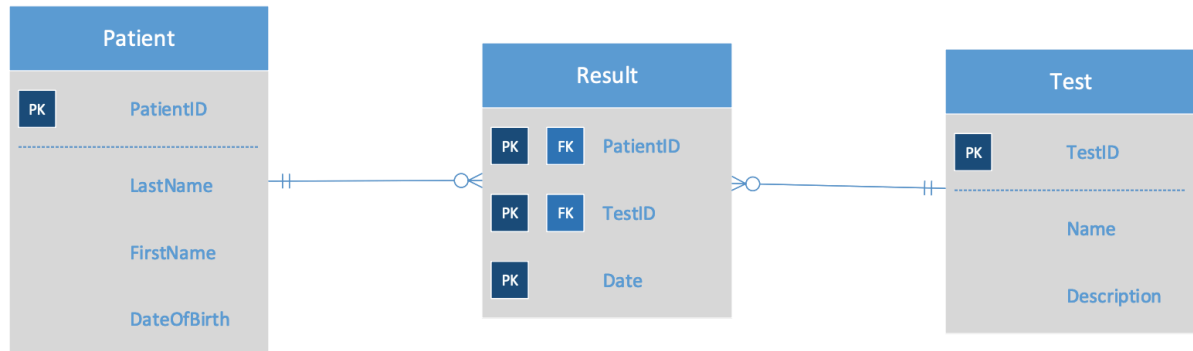


INFO 6210
Lab 1
Kaiyuan Zhao

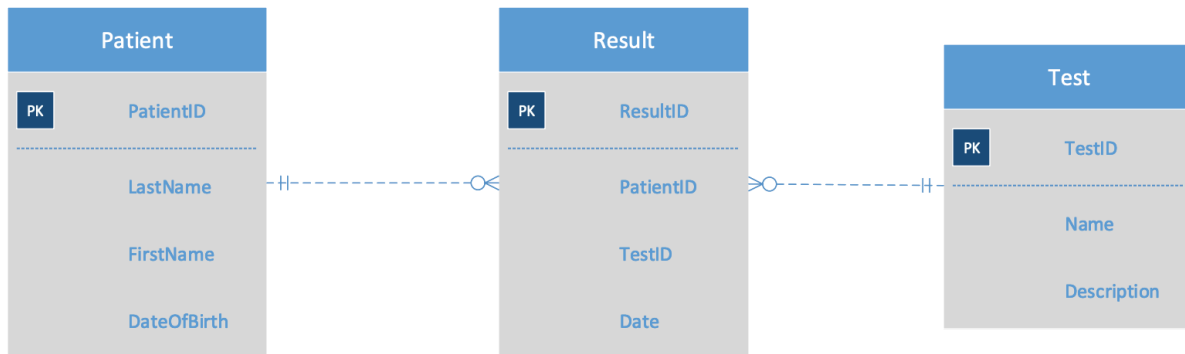
Part I:



Part II:



The above design has two identifying relationships for Result. When we change the design to the model below, what else do we need to do to ensure the business rules can still be maintained? Please elaborate.















There are three things to do to ensure the business rules can still be maintained.

1. We want to make original key attributes mandatory which means when a user updated ResultID in Result entity, PatientID, TestID and Date must be updated as well.
2. We need to make referential integrity for the original key attributes, which means when a PatientID or TestID are updated we need to make sure those corresponding data in Patient entity and Test entity are correct.
3. We need to make the combination of original key attributes is unique, for example, we can use a unique index for the combination of the original key attribute.

Part III:

Documents:

QUERY RESULTS 1-12 OF 12	
	<pre>_id: ObjectId("5d8be3e01c9d44000e047ba") customerID: 11005 salesOrderID: 43704 orderValue: 3729 TotalQuantityInOrder: 1</pre>
	<pre>_id: ObjectId("5d8be4521c9d44000e047bc") customerID: 11005 salesOrderID: 51612 orderValue: 2610 TotalQuantityInOrder: 4</pre>
>	<pre>_id: ObjectId("5d8be49d1c9d44000e047be") customerID: 11005 salesOrderID: 57361 orderValue: 2634 TotalQuantityInOrder: 1</pre> <div></div>
	<pre>_id: ObjectId("5d8be52a1c9d44000e047c2") customerID: 11006 salesOrderID: 51198 orderValue: 2580 TotalQuantityInOrder: 3</pre>
	<pre>_id: ObjectId("5d8be5ed1c9d44000e047c8") customerID: 11007 salesOrderID: 43743 orderValue: 3757 TotalQuantityInOrder: 1</pre>

<div data-bbox="232 216 256 237">></div> <div data-bbox="277 222 558 302"> <pre> _id: ObjectId("5d8be6341c9d44000e047ca") customerID: 11007 salesOrderID: 51581 orderValue: 2643 TotalQuantityInOrder: 5 </pre> </div>	
<div data-bbox="232 373 256 394">></div> <div data-bbox="277 380 558 459"> <pre> _id: ObjectId("5d8be6801c9d44000e047cc") customerID: 11007 salesOrderID: 54705 orderValue: 2673 TotalQuantityInOrder: 2 </pre> </div>	
<div data-bbox="232 531 256 552">></div> <div data-bbox="277 537 558 617"> <pre> _id: ObjectId("5d8be4e61c9d44000e047c0") customerID: 11006 salesOrderID: 43819 orderValue: 3757 TotalQuantityInOrder: 1 </pre> </div>	
<div data-bbox="232 688 256 709">></div> <div data-bbox="277 695 558 774"> <pre> _id: ObjectId("5d8be5881c9d44000e047c4") customerID: 11006 salesOrderID: 58007 orderValue: 2634 TotalQuantityInOrder: 1 </pre> </div>	
<div data-bbox="232 846 256 867">></div> <div data-bbox="277 852 558 932"> <pre> _id: ObjectId("5d8be7141c9d44000e047d1") customerID: 11008 salesOrderID: 43826 orderValue: 3729 TotalQuantityInOrder: 1 </pre> </div>	<div data-bbox="1263 842 1382 867">     </div>
<div data-bbox="232 1003 256 1024">></div> <div data-bbox="277 1010 558 1089"> <pre> _id: ObjectId("5d8be74e1c9d44000e047d3") customerID: 11008 salesOrderID: 51282 orderValue: 2555 TotalQuantityInOrder: 4 </pre> </div>	
<div data-bbox="232 1161 256 1182">></div> <div data-bbox="277 1167 558 1247"> <pre> _id: ObjectId("5d8be78a1c9d44000e047d5") customerID: 11008 salesOrderID: 53765 orderValue: 2673 TotalQuantityInOrder: 2 </pre> </div>	<div data-bbox="1263 1178 1382 1203">     </div>

Code and calculate result:

Find Indexes **Aggregation**

☒ AUTO PREVIEW

Preview of Documents in the Collection

```
_id: ObjectId("5d8be4521c9d440000e047bc")
customerID: 11005
salesOrderID: 51612
orderValue: 2610
TotalQuantityInOrder: 4
```

Output after \$group stage (Sample of 4 documents)

```
_id: 11006
totalPurchaseQuantities: 5
totalPurchaseValues: 8971
```

 AUTO PREVIEW

Preview of Documents in the Collection

```
_id: ObjectId("5d8be4521c9d44000e047bc")
customerID: 11005
salesOrderID: 51612
orderValue: 2610
TotalQuantityInOrder: 4
```

Output after \$group stage (Sample of 4 documents)

```
_id: 11008
totalPurchaseQuantities: 7
totalPurchaseValues: 8957
```

Stage is disabled. Results not passed in the pipeline.

No Preview Documents

