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CSCI 3287

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12/07/2023

ACDB Relational Algebra

1. Tenant Information

$TENANT\ INFORMATION \leftarrow \pi_{TENANT.FName, TENANT.LName, TENANT.TenantEmail, LEASE.ApartmentNo}$
 $(TENANT *_{TENANT.LeaseID=LEASE.LeaseID} LEASE)$

2. Late Rent Payment List

LATE RENT PAYMENT LIST

$\leftarrow \pi_{TENANT.FName, TENANT.LName, TENANT.TenantEmail, LEASE.LeaseID, TRANSACTION.RentDueDate\ AS\ "Due\ Date", TRANSACTION.TDate\ AS\ "Payment\ Date", TRANSACTION.Total\ Cost+75\ AS\ "Rent\ Due\ with\ Late\ Fee", (LEASE.EndDate-LEASE.StartDate)\ AS\ "Lease\ Term\ In\ Months"}$
 $\sigma_{TRANSACTION.TDate\ IS\ NOT\ NULL\ OR\ TRANSACTION.TDate > TRANSACTION.RentDueDate}$
 $(TENANT *_{TENANT.LeaseID=LEASE.LeaseID} LEASE)$
 $*_{TENANT.TenantEmail=TRANSACTION.TenantEmail} TRANSACTION$

3. Lease Expiration Status

LEASE EXPIRATION STATUS

$\leftarrow \pi_{TENANT.FName, TENANT.LName, TENANT.TenantEmail, LEASE.LeaseID, LEASE.StartDate, LEASE.EndDate, AMENITY.StorageNo, AMENITY.GarageNo}$
 $\sigma_{LEASE.EndDate \geq Today() \ AND \ LEASE.EndDate \leq Today()+90\ days}$
 $(LEASE *_{LEASE.LeaseID=TENANT.LeaseID} TENANT) *_{TENANT.AmenityID=AMENITY.AmenityID} AMENITY)$

4. Amenity Sales Reports

$AMENITY\ SALES\ REPORT_{Year, Month, Total\ Sales, Total\ Loans}$
 $\leftarrow Year(TRANSACTION.TDate), Month(TRANSACTION.TDate)$
 \bowtie
 $SUM(AMENITY.UnitPrice(COALESCE(Month(TRANSACTION.TDate))),$
 $SUM((AMENITY.DailyFee\ AND\ AMENITY.Deposit)COALSECE(Monthy(TRANSACTION.DateReturned - TRANSACTION.DateReturned))))$
 $(\sigma_{TRANSACTION.DateLoaned=Today()-365\ days\ AND\ (AMENITY.Item\ OR\ AMENITY.EquipmentType)})$
 $(TRANSACTION *_{TRANSACTION.AmenityID=AMENITY.AmenityID} AMENITY)$

5. Maintenance Logs

MAINTENANCE LOGS

$\leftarrow \pi_{\text{MAINTENANCE.ProjectType AS "Project Type",MAINTENANCE.DateRequested AS "Date Requested",}} \\ \text{MAINTENANCE.DateScheduled AS "Date Scheduled",MAINTENANCE.DateCompleted AS "Date Completed"}} \\ \sigma_{\text{MAINTENANCE.DateCompleted IS NOT NULL}}(\text{MAINTENANCE})$

6. Quarterly Maintenance Reports

*QUARTERLY MAINTENANCE REPORTS*_{Job Category,# of Projects,Percentage Completed,Avg Completion Time}
 $\leftarrow (\pi_{\text{MAINTENANCE.ProjectType,\# of Projects,Percentage Completed,Avg Completion Time}} \\ (\text{MAINTENANCE.ProjectType} \bowtie \text{COUNT}(\text{MAINTENANCE.DateCompleted}), \text{AVG}(\text{MAINTENANCE.DateCompleted} - \text{MAINTENANCE.DateScheduled}). \\ \text{COUNT}(\text{MAINTENANCE.DateCompleted})/\text{COUNT}(\text{DateScheduled})*100) (\text{MAINTENANCE}))$