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CPT242 – H02

Vince's Vinyl Database

**Documentation for Vince's Vinyl Database Management System**

# Note 8

Date: October 22, 2023

1. **Data Access Needs of Vince’s Users:**
2. Employee

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table Name | SELECT | INSERT | UPDATE | DELETE | Constraints |
| Album | **X** | **X** | **X** |  |  |
| Artist | **X** | **X** | **X** |  |  |
| Inventory | **X** | **X** | **X** |  |  |
| Person | **X** | **X** | **X** |  |  |
| Purchase | **X** | **X** | **X** |  |  |
| PurchaseDetail | **X** | **X** | **X** |  |  |
| Sale | **X** | **X** | **X** |  |  |
| SaleDetail | **X** | **X** | **X** |  |  |

1. Customer

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table Name | SELECT | INSERT | UPDATE | DELETE | Constraints |
| Album | **X** |  |  |  |  |
| Artist | **X** |  |  |  |  |
| Inventory | **X** |  |  |  |  |
| Person | **X\*** | **X\*** | **X\*** | **X\*** | \*Only themselves |
| Purchase | **X\*** |  |  |  | \*Only their orders |
| PurchaseDetail | **X\*** |  |  |  | \*Only their orders |
| Sale | **X\*** |  |  |  | \*Only their orders |
| SaleDetail | **X\*** |  |  |  | \*Only their orders |

1. Manager

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table Name | SELECT | INSERT | UPDATE | DELETE | Constraints |
| Album | **X** | **X** | **X** | **X** |  |
| Artist | **X** | **X** | **X** | **X** |  |
| Inventory | **X** | **X** | **X** | **X** |  |
| Person | **X** | **X** | **X** | **X** |  |
| Purchase | **X** | **X** | **X** | **X** |  |
| PurchaseDetail | **X** | **X** | **X** | **X** |  |
| Sale | **X** | **X** | **X** | **X** |  |
| SaleDetail | **X** | **X** | **X** | **X** |  |

1. **Security Plan:**

* **Authentication:**
  1. All users must provide a valid username and password to access the system.
  2. Passwords must be at least 12 characters long and contain a mix of upper- and lower-case letters, numbers, and special characters.
  3. Passwords must be changed every 60 days.
  4. Multi-factor authentication can be considered for critical roles.
* **Authorization:**
  1. Role-based access control will be used. Employees will only have access to specific data based on their role.
  2. Use stored procedures to encapsulate the logic for data access.
  3. Views can be used to provide a filtered perspective of a table. This way, sensitive data can be hidden from certain roles.
  4. Regular audits of access logs to ensure unauthorized access is quickly detected.
* **General Policies & Procedures:**
  1. Regular training for employees on the importance of data security and best practices.
  2. An incident response plan should be in place in case of any security breaches.
  3. Regular backups of data.
  4. All data transfers must be encrypted.

1. **Preliminary Threat Analysis:**

* **External Threats:**
  1. Cyberattacks targeting the database to extract customer and financial data.
  2. Denial of Service attacks to disrupt services.
  3. Phishing attacks targeting employees to gain unauthorized access.
* **Internal Threats:**
  1. Employees intentionally or unintentionally modifying data.
  2. Unauthorized data access by employees.
  3. Data leaks by employees.

1. **Disaster Recovery Plan for Vince's Vinyl**
2. **Objective**:
   * Safeguard data pertaining to customers, orders, inventory, and employees.
   * Ensure data integrity, availability, and prompt recovery in the wake of unexpected events, including cyberattacks or natural disasters.
3. **Potential Threats**:
   * Natural disasters (floods, fires, earthquakes).
   * Malicious cyberattacks or accidental data breaches.
   * Hardware or system failures.
   * Unintended alterations or deletions by employees.
4. **Backup Strategy**:

a. **Regular Backups**:

* + Perform daily backups of the entire database, retaining them in multiple locations, both on-site and off-site.

b. **Cloud Backups**:

* + Utilize a cloud backup service for enhanced protection against threats such as fires or floods.

1. **Authentication & Authorization**:
   * Only grant specific staff members access to and the ability to restore backups.
   * Consistently evaluate and modify permissions to align with the changing requirements of the business.
2. **Online Platform Security**:
   * Bolster security protocols for the online store to prevent potential cyber threats.
   * Partner with trusted payment gateways that adhere to rigorous security standards.
3. **Physical Infrastructure**:
   * Fortify the premises of Vince's Vinyl against potential threats, especially if located in regions susceptible to specific natural disasters.
   * Secure storage of physical inventory and records.
4. **Disaster Response Team**:
   * Assemble a team with distinct roles to act promptly during and after emergencies.
   * Designate roles for IT recovery, communication, and coordination.
5. **Training & Awareness**:
   * Instruct employees on the correct disaster response measures and inform them about the consequences of data mishaps.
   * Conduct periodic drills to ensure everyone is well-versed in the procedures.
6. **Review & Update**:
   * Conduct routine assessments of the disaster recovery plan to identify and rectify potential vulnerabilities.
   * Keep security documentation up-to-date, facilitating a faster recovery process after a disaster.
7. **External Partnerships**:

* Establish relationships with expert IT consultants or firms to provide specialized knowledge and expedited recovery support in the aftermath of a disaster.

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