**DAT502**

**Assessment 1**

**Blake Gillanders**

**01/08/2023**

**Data Management and Usage**

**1. Identify and explain the problems and limitations of managing data in the current system**

After reading through the dialogue between jill and the interviewer I have noticed several issues with the current data management system first they store all their customers information on 2 separate spreadsheets on Microsoft excel and share them between all the staff members this raises significant concerns. First this raises a big problem with the security of customers’ information as each staff member has equal access to the database and they can review and modify any information on the database even if they aren’t required to. This poses a significant security risk.

Another problem with sharing an excel document between multiple users is that it leads to accessibility challenges as Excel is primarily designed for single-user operations which can potentially cause conflicts and restrictions when multiple staff members are attempting to access and update information. These put limitations on simultaneous modifications.

The third problem with using excel as their main database is the lack of a search feature this greatly hinders their ability to locate the information, they require makes it a more time-consuming activity to located specific customer data when needed.

**2. Identify and describe the type of information the organization collects and describe how it is used and managed**

Jills real estate organization has 2 different spreadsheets/ databases that they store information on one of them is the customer spreadsheet which has contact and personal information on the customers/tenants the spread sheet includes the customers; First and last name, Date of birth, Full name (first and last), has the name of their company listed for some of the customers/tenants, property number/identifier which isn’t unique to each property, Either or both email address and phone number listed in separate columns, address, ID number and an inspection column where the write in notes about the inspection e.g. damages etc.. This information is all written on an excel spreadsheet so they can keep a record of the customers details and write in information about the customers previous inspections this system isn't efficient or suitable for what they need for example they have the customers names full names written twice side by side taking up more space on the spread sheet the property numbers aren't unique to each person making the database confusing. They have an inspection column to keep track of any findings on the inspections but have limited space to write anything in and are unable to upload photos of damage. In the property spreadsheet they track similar information but about the property owners there is a property identifier number in column A, Column B has a list of all the rental property addresses. Column C has the city that they’re located in Column D has the postcodes of a few of the listed properties Next column has a mix of both the weekly rent for some properties and the monthly rent amount for others followed by the properties bond in the next column there's also a rent start and rent end column which shows the dates the properties will be rented from. In the next column most, properties have the agent for the property listed followed by the property owner for each property in the next column is well as contact information such as Phone number and Email address in following columns is well as an ID column and a mostly empty advertisement column It’s mostly recorded the same way as the customer spreadsheet to keep track of the owners information and the rental amounts this database suffers from the same problems and limitations of the first database.

All data recorded in the customers spreadsheet is used to track the tenant/customer's personal information and contact information so the organization can write reports on the tenants the properties they have rented. It is also a way for the organization to easily contact the customers based on the information they have supplied. The database also uses a property number to link the customers to the properties in the second spreadsheet. It is managed by the organization's staff manually entering results into the spread sheet resulting in missing or outdated data.

The second spread sheet is called the “property” spreadsheet, and the organization uses it to track their current property owners and what properties they own it has a full list of contact information for the property owners to contact them easy and is used to store information related to the properties such as rent amounts and start dates, advertising and bond its managed the same way as the previous spreadsheet.

**3. Identify and describe the current staff and contractor roles and explain their responsibilities**

**Rental agent.**

1. **Description of their role:** A rental agent is someone who Searches for Property owners who are looking to rent out their property/s and helps them advertise their properties to draw in potential clients (tenants) and supplies the owners with the tenant's information such as past rental references, Contact information, Work history, Personal information and helps them choose the right tenant after checking their information and setting up a meeting. Not only do they gather information about potential tenants they also help choose the right tenant then manage the property once a tenant has been chosen and has moved in. They also perform inspections to track the properties health, enforce the start, and finish times of the tenancy
2. **Their Role Responsibilities:** Rental agents have a range of responsibilities such as advertising the property to draw in interest, Finding the right tenant who is going to respect the property owner's property drawing up legally enforceable rental contracts that state the start finish time, weekly rental amount, bond and all required personal information. They are also responsible for collecting the tenants rent and paying tax on the properties. And monitoring the property and tracking any damage so over all they are responsible for the whole rental process and keeping records of all the information
3. **Tasks:** There are quite a few tasks for this role some of them are one off tasks like advertising the property to draw interest, selecting a list of clients based off information they have given then performing a thorough background check on each of the short-listed clients to ensure that they have a good past rental history and aren’t going to cause and problems down the road. Another important task is ensuring that a contract is drawn up for the property that states all the required information. After a tenant is moved in, they must keep track of the property by doing planned inspections every 3 months to keep track of the property. Take photos of every room for insurance purposes and any damage they also must keep a record of all this information. They are also tasked with making sure rent is paid every week/fortnight or month depending on the contract.

**Account and admin support person**

1. **Description of their role:** The account and admin support role play quite a key role in the whole rental process the job is mostly a desk job. They answer phones and refer clients and property owners to available agents. They also manage the customers' accounts after receiving rent payments then make sure the tax amount is set aside or paid, they take the business’s share out of the rental amount and send the remainder to the property owner. They also manage the workers' pay making sure everyone is paid on time
2. **Their Role Responsibilities:** This role has some Significant responsibilities They manage customers' accounts making sure rental amounts are divided up for tax, the businesses share and the property owners share. They are also responsible for answering the phones to refer clients or property owners to the correct agents. They are also in charge of the business’s accounts, making sure the agents are receiving their pay.
3. **Tasks:** The account and admin support person has quite a few day-to-day tasks they often sit behind the front desk interacting with customers who come in show them a catalog of vacant properties refer them to the correct agents and answering phone calls from potential clients and referring them to the right place. They also manage both the business’s accounts and the customers/ property owners’ accounts.

**4. Investigate and explain relevant ethical, security and privacy requirements for the use and management of personally identifiable information (PII) in the scenario, based in New Zealand.**

Personally identifiable information needs to be managed in a secure manner according to the New Zealand privacy act which currently has 13 principles which covers the requirements for collecting, using, and storing personal data these principles are what jills organization needs to base their database requirements off. I have noticed that in both their spread sheets some columns have been left blank with empty information, which seems important for the accuracy of their data, this needs to be changed in their new database, so they have all the required information to produce accurate reports. Another requirement they have for the data they store is an ethical requirement that relates to the security of their data currently they have a pretty minimal security system in place as all staff members have access to the excel spreadsheets meaning they have access to all data on the spreadsheets even data that they done need access to. This means data has a higher chance of being leaked. They need to implement better security strategies to protect their data such adding authorized staff member roles and giving those roles permissions to access certain parts of the database, this would help reduce the risk. Another ethical and security-related requirement they have is data retention. I have noticed they have multiple tenants assigned to the same property number which means they are still storing outdated data that they no longer need. They are required to safely dispose of this information since it is no longer legally required.

**5. Investigate and explain the impact of data breaches on organizations in New Zealand and their customers and suggest measures to mitigate such risks for the organization.**

A data breach is where unauthorized individuals perform a cyber-attack to gain access to personal or sensitive data, often with the intent of stealing and exploiting the stolen data. This can result in some severe consequences including the loss of personal data which can expose customers' personal information such as banking details, medical records, and login credentials. This obviously has a major impact on the customers involved. It also results in a lot of problems for the organization such as fines to the company for failing to keep the data stored securely, financial losses due to legal liabilities and major reputation damage to the company. One example of this happening recently in New Zealand was a cyber-attack on “Latitude financial” which was the biggest data breach in New Zealand history it resulted in the loss of over 14 million personal records which for reference is almost 3 times the population of New Zealand. Part of the reason so many records were lost is because Latitude financial was not following the New Zealand privacy act more specifically Privacy principle 9 which states that data should not be stored longer than its intended legal use. And in this case, much of the lost data had been stored for as long as 18 years. This resulted in the company receiving multiple lawsuits and huge fines for their failure. To reduce the chances of this happening, latitude could have followed the privacy act and only stored their data for the amount they require, resulting in much less data being lost. For the importance and amount of data they stored they need to implement better security measures such as better encryption of their stored data, so it is unreadable when accessed by the unauthorized part. Better monitoring of traffic on their network and better training for their staff to be able to locate unauthorized traffic. And in this case, they needed to have better access control ensuring that employees only have access to the data they require. Jills business can also incorporate these strategies with the new database to help keep data secure and prevent a data Breach

**Database design and modelling**

**6. Define a mission statement and objectives of the new database**

The purpose of the new database is to make a database that meets the current New Zealand privacy principles act, so all the stored data is relevant, managed and stored correctly and retained for the required amount of time whilst being secure to prevent data breaches and misuse. Not only does the new database need to be secure it also needs to be more accessible for the business so the new database will be more user friendly by including a search feature to find data more efficiently this will be achieved by assigning each tenant or property owner a unique identifier

**7. Create a preliminary list of tables for the database**

|  |  |
| --- | --- |
| **Name** | **Description** |
| **Tenants** | This table will include all the Tenants information relevant to their current rental situation |
| **Rental owner information** | This table will have all the information about the property owners, what properties they own, and all the rental information about them. |
| **Staff Information** | This table will list all the staff’s job information and contact information |
| **Available rentals** | List of all properties and if they are available |
| **Rental payment** | Upcoming rental payments and amounts |
| **Rentals** | Rental address and terms |
| **Rental properties** | List of all rental properties, owners and tenants |
| **Rental Owner** | Rental owners' information and properties they own |
| **Address** | Address of tenant |
| **City** | City of tenant |
| **Property number** | Property identifier |

**8. Preliminary list of attributes for the database**

|  |  |
| --- | --- |
| **Tenants** | |
| **First name** | The Tenants first name |
| **Last name** | The Tenants last name... |
| **Date of birth/DOB** | The Tenants date of birth. |
| **Work/company** | Where the Tenant works/name of company. |
| **Rental property address** | Address of the property they rent |
| **Property Identifier number** | A number that uniquely identifies each property for example (P01, P02... etc.). |
| **Email address** | The Tenants Email address. |
| **Phone Number** | The tenant's phone number. |
| **Personal ID/proof of ID** | Proof of Tenants ID e.g... driver's license, passport, or other Valid NZ ID. |
| **Work References** | A list of work references to prove that the Tenant currently works and is going to continue to have a stable job. |
| **Past rental references** | A list of references from previous landlords or neighbors that prove that the tenant is respectful. |
| **Verification of income** | A pay slip that proves the tenant makes enough to afford rent every week. |
| **Inspections** | A column dedicated to posting notes on all inspections performed on the property is well as an area to upload photos of the condition on all parts of the house or photos of damages |

|  |  |
| --- | --- |
| **Rental** | |
| **Property Identifier number** | A number that uniquely identifies each property for example (P01, P02... etc.). |
| **Rental house address** | **The address where the rental house is located** |
| **City** | **The city the rental is located** |
| **Post code** | **Rentals postcode** |
| **Rental amount** | **How much rent is and if it charged weekly-fortnightly or monthly** |
| **Bond** | **The properties bond amount** |
| **Rent start date** | **The date a tenant started renting the property** |
| **Rent end date** | **The scheduled end of the tenancy contract** |
| **Agent** | **Name of the agent who manages the property** |
| **Owners phone number** | **The property owners phone number** |
| **Owner's email address** | **The property owners email address** |
| **Owner's address** | **The property owners home address** |
| **Owner’s ID** | **The property owners ID** |
|  |  |

|  |  |
| --- | --- |
| **Staff information** | |
| **First name** | **The staff members first name** |
| **Last name** | **The staff member's last name** |
| **Phone number** | **The staff members phone number** |
| **Email** | **The staff members’ email** |
| **Position** | **The staff members work position/role** |
| **Username** | **Staff members username** |
| **Password** | **Staff members password** |
|  |  |

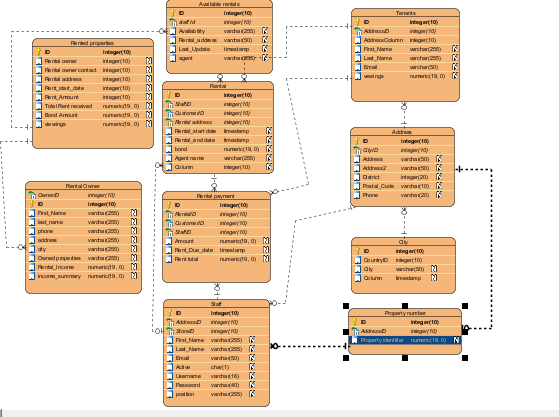
|  |  |
| --- | --- |
| **Availability – ordered high to low** | |
| **Property address** | **Address of the property** |
| **availability** | **If the property is available or not** |
| **agent** | **Name of the agent** |
| **rent** | **Rent amount** |

|  |  |
| --- | --- |
| **Rental payments** | |
| **Weekly amount** | **Weekly rent amount** |
| **Rental address** | **Address of rental** |
| **total rent** | **Total rent accrued in the past 12 months** |
| **Tenant ID** | **ID of tenant** |
| **Rent Due date** | **Date and frequency the rent is due** |

|  |  |
| --- | --- |
| **Rental Owner** | |
| **Owner ID** | **Property owner ID** |
| **First name** | **Rental owners first name** |
| **Last name** | **Rental owners last name** |
| **phone** | **Rental owners phone number** |
| **address** | **Rental owners address** |
| **City** | **City where rental owner is located** |
| **Rental income weekly** | **Weekly income from all rentals** |
| **Total income** | **Total rental income 12 months** |
| **Owner properties** | **List of all properties owned** |

|  |  |
| --- | --- |
| **Property number** | |
| **Property identifier number** | **Number that identifies the property** |
| **Owner Id** | **Id of owner** |
| **address** | **Property address** |

**9. Develop and illustrate a logical data model diagram using Visual Paradigm.**



Logical model is included in the assessment submission.

**References**

**The New Zealand privacy act 2020. Office of the privacy commissioner 2013:** [**https://www.privacy.org.nz/privacy-act-2020/privacy-principles/5/**](https://www.privacy.org.nz/privacy-act-2020/privacy-principles/5/)

**Office of the privacy commissioner (**3 Apr 2023 )[**https://www.privacy.org.nz/publications/statements-media-releases/new-zealands-biggest-data-breach-shows-retention-is-the-sleeping-giant-of-data-security/**](https://www.privacy.org.nz/publications/statements-media-releases/new-zealands-biggest-data-breach-shows-retention-is-the-sleeping-giant-of-data-security/)

[**Josh Holmes**](https://www.stanfieldit.com/author/josh-holmes/) **| Mar 27, 2023**

[https://www.stanfieldit.com/latitude-hack/#:~:text=How%20Did%20Latitude%20Get%20Hacked,a%20back-end%20infrastructure%20provider](https://www.stanfieldit.com/latitude-hack/#:~:text=How%20Did%20Latitude%20Get%20Hacked,a%20back-end%20infrastructure%20provider.)