

Img src: [shorturl.at/jAT](https://shorturl.at/jAT)

# The Alcatraz Prison System: Relational Database Management System

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## **PROBLEM DESCRIPTION**

THE Warden of Alcatraz Prison has a grave problem to solve. Hundreds of prisoners and prison authorities inhabit this tiny island and he faces the enormous task of modernizing his pen and paper-based system to a computer-based database to efficiently track the incoming and outgoing prisoners along with the many staff and guards that he manages.

To better manage the resources that he has and make the processes more efficient, we have designed a sophisticated Database Management system which would keep track of every prisoner, his activities, his supervisors and handlers as well as their key responsibilities and tasks. With this, we hope to once again make Alcatraz one of the foremost prison systems in the USA, if not the world!

## **ORGANIZATIONAL OVERVIEW**

ALCATRAZ Federal Penitentiary is situated on the tiny Alcatraz island, off the coast of San Francisco. The small island was developed with facilities for a lighthouse, a military fortification, a military prison, and a federal prison. Hardened prisoners serving long incarcerations are placed in this facility. Along with the prisoners, it has a long list of staff and prison guards which carry out a multitude of tasks.

### *Prisoner*

The Prisoners data forms the crux of the database as everything is based around them. The prison guards, the chores that they do as well as the cells in which they're lodged forms the basis for the other data.

### *Prison Staff*

The Prison Staff could include the team which is in-charge of the daily activities of the prisoners as well as the organizational activities of the prison.

### *Prison Supervisors*

The Prison Supervisors are prison staff which are in-charge for certain equipment which require additional clearances for using.

### *Prison's Cells and Tasks*

The prisoners have been assigned cells based on the severity of their crimes, as well as tasks based on a daily schedule that has been maintained for them by their respective prison guards

## SCOPE OF DATABASE

### 1. Prisoners Table

The prisoner's data contains the prisoner's personal details like name, DOB, Address, their block and cell no., as well as the task that would be assigned to them.

### 2. PrisonStaff Table

The Prison Staff table include details of individuals, along with their supervisors, which are also a part of the Prison Staff. The Prison staff also acts as supervisors for a group of prisoners for every task they perform.

### 3. Charges Table

The Charges Table contains the data regarding the offense committed by the prisoner. It contains Charge ID, Charge Name, Charge Description and Severity Level.

### 4. PrisonerCharges Table

The PrisonerCharges Table keeps track of every prisoner and the offense which they've committed. It contains ChargeID, Date and Time of the offense, along with the Location where it was committed.

### 5. Tasks Table

The Tasks Table contains details of every task that the prisoner performs, along with the duration of each task.

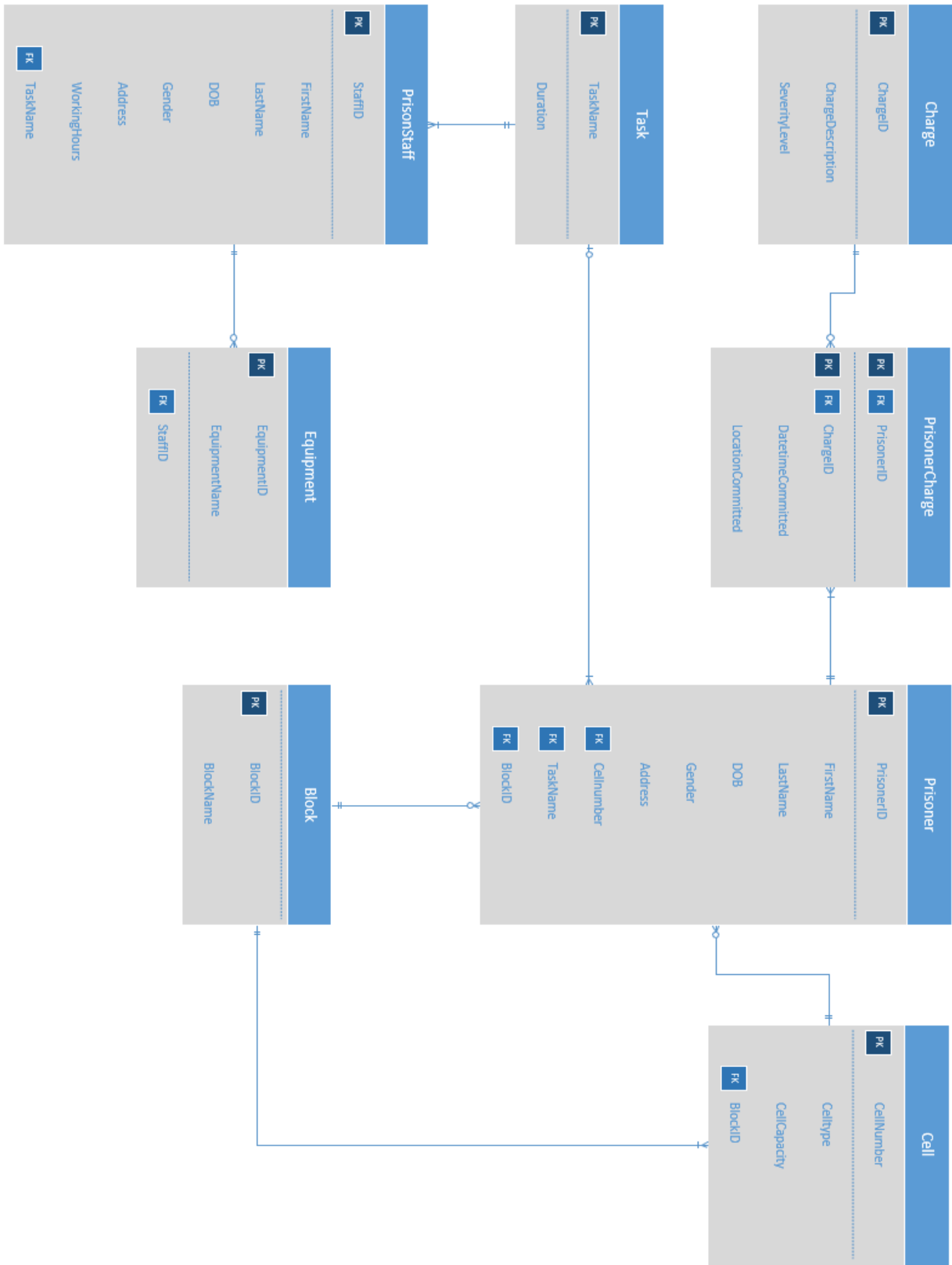
### 6. Cells Table

The Cells Table contains details about the type of cell that has been assigned to every prisoner, along with the capacity of every cell.

### 7. Equipment's Table

The Equipment's Table contains the equipment which are used by the prison staff for their daily activities. It contains Equipment ID along with Equipment Name.

ER DIAGRAM



## RELATIONAL DATABASE SCHEMA

```
GO
/***** Object: Table [dbo].[Block] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Block](
[BlockID] [nvarchar](255) NOT NULL,
[BlockName] [nvarchar](255) NOT NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[Cell] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Cell](
[CellNumber] [nvarchar](255) NOT NULL,
[CellType] [nvarchar](255) NOT NULL,
[CellCapacity] [int] NOT NULL,
[BlockID] [nvarchar](255) NOT NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[Charge] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Charge](
[ChargeID] [nvarchar](255) NOT NULL,
[ChargeDescription] [nvarchar](255) NOT NULL,
[SeverityLevel] [nvarchar](255) NOT NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[Equipment] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Equipment](
[EquipmentID] [int] NOT NULL,
[EquipmentName] [nvarchar](255) NOT NULL,
```

```

[StaffID] [int] NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[EquipmentIssued] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[EquipmentIssued](
[EquipmentID] [int] NOT NULL,
[EquipmentName] [nvarchar](255) NULL,
[StaffID] [int] NULL,
[FirstName] [nvarchar](255) NULL,
[LastName] [nvarchar](255) NULL

) ON [PRIMARY]
GO
/***** Object: Table [dbo].[Prisoner] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Prisoner](
[PrisonerID] [int] NOT NULL,
[FirstName] [nvarchar](255) NOT NULL,
[LastName] [nvarchar](255) NOT NULL,
[DOB] [datetime] NOT NULL,
[Gender] [nvarchar](255) NOT NULL,
[Address] [nvarchar](255) NOT NULL,
[CellNumber] [nvarchar](255) NOT NULL,
[TaskName] [nvarchar](255) NULL,
[BlockID] [nvarchar](255) NOT NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[PrisonerCharge] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[PrisonerCharge](
[PrisonerID] [int] NOT NULL,
[ChargeID] [nvarchar](255) NOT NULL,
[DateTimeCommitted] [datetime] NOT NULL,

```

```

[LocationCommitted] [nvarchar](255) NOT NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[PrisonerInfo] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[PrisonerInfo](
[PrisonerID] [int] NOT NULL,
[FirstName] [nvarchar](255) NULL,
[LastName] [nvarchar](255) NULL,
[DOB] [datetime] NULL,
[Gender] [nvarchar](255) NULL,
[Address] [nvarchar](255) NULL,
[CellNumber] [nvarchar](255) NULL,
[TaskName] [nvarchar](255) NULL,
[BlockID] [nvarchar](255) NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[PrisonStaff] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[PrisonStaff](
[StaffID] [int] NOT NULL,
[FirstName] [nvarchar](255) NOT NULL,
[LastName] [nvarchar](255) NOT NULL,

[DOB] [datetime] NOT NULL,
[Gender] [nvarchar](255) NOT NULL,
[Address] [nvarchar](255) NOT NULL,
[WorkingHours] [int] NOT NULL,
[TaskName] [nvarchar](255) NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[PrisonStaffInfo] *****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[PrisonStaffInfo](

```



```

[StaffID] [int] NOT NULL,
[FirstName] [nvarchar](255) NULL,
[LastName] [nvarchar](255) NULL,
[DOB] [datetime] NULL,
[Gender] [nvarchar](255) NULL,
[Address] [nvarchar](255) NULL,
[WorkingHours] [int] NULL,
[TaskName] [nvarchar](255) NULL
) ON [PRIMARY]
GO
/***** Object: Table [dbo].[Task]*****/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Task](
[TaskName] [nvarchar](255) NOT NULL,
[Duration] [int] NOT NULL
) ON [PRIMARY]
GO

```

## DATA INPUT SCREEN FORMS

Alcatraz Jail : Database- C:\Users\Delhi\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Help Tell me what you want to do

Views Clipboard Filter Sort & Filter Records Find Text Formatting

All Access Objects

Search...

Tables

- Block
- Cell
- Charge
- Equipment
- Prisoner
- PrisonerCharge
- PrisonStaff
- Task

Queries

- EquipmentIssued
- PrisonerCellQuery
- PrisonerCharges
- PrisonerInfo
- PrisonStaffInfo

Forms

- MainMenu
- Prison Staff Equipment
- Prisoner
- PrisonerCharge
- PrisonerCharge subform

Prisoner Details

PrisonerID: P022

FirstName: Pratheep

LastName: Kumar

DOB: 4/9/1997

Gender: Male

Address: 6th Street Dallas

Block ID: M

CellNumber: Solitary I

TaskName: Kitchen Duty

PrisonerCharges

ChargeID	PrisonerID	DateTimeC	LocationCommitted
M94	P022	7/2/2019	Kurla
*	P022		

Record: 1 of 2

Form View

Windows Taskbar: Type here to search, 1:33 AM, 12/10/2019

**Prisoner:** This form allows prison staff the ability to enter new data and/or edit specific data relating to a prisoner.

Alcatraz Jail : Database- C:\Users\Delhi\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Help Tell me what you want to do

Views Clipboard Filter Sort & Filter Records Find Text Formatting

All Access Objects

Search...

Tables

- Block
- Cell
- Charge
- Equipment
- Prisoner
- PrisonerCharge
- PrisonStaff
- Task

Queries

- EquipmentIssued
- PrisonerCellQuery
- PrisonerCharges
- PrisonerInfo
- PrisonStaffInfo

Forms

- MainMenu
- Prison Staff Equipment
- Prisoner
- PrisonerCharge
- PrisonerCharge subform
- PrisonStaff

Cell

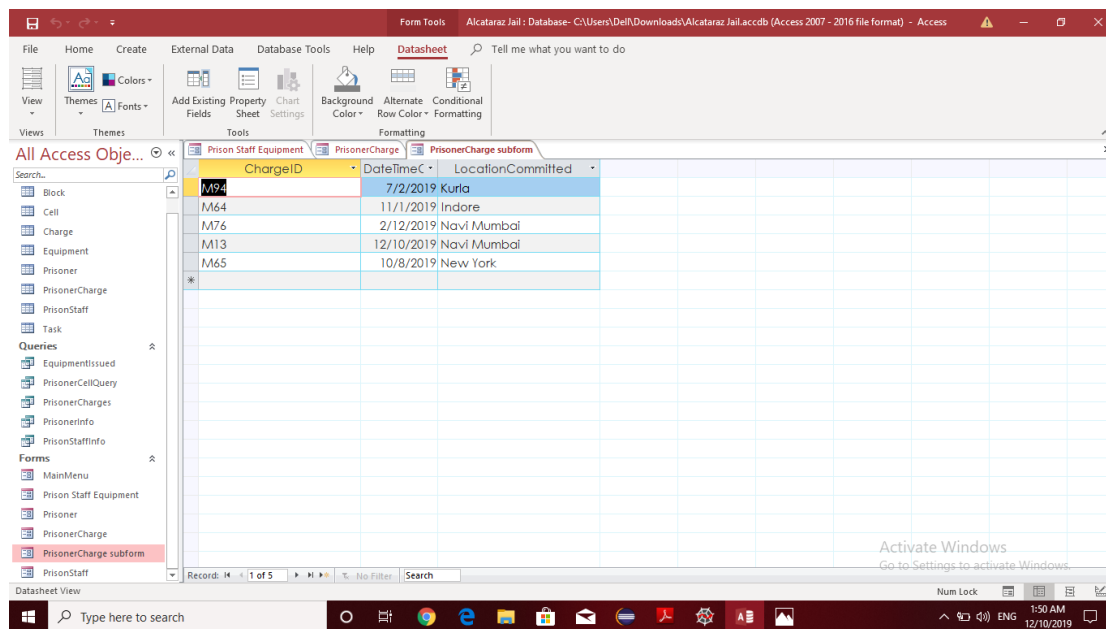
CellNumber	CellType	CellCapacity	BlockID
Shared5	Shared	7 F	
Shared6	Shared	5 F	
Solitary4	Solitary	1 F	
Shared7	Shared	5 F	
Shared8	Shared	2 F	
Shared9	Shared	2 J	
Shared10	Shared	2 J	
Shared11	Shared	2 J	
Solitary5	Solitary	1 J	
Solitary1	Solitary	1 M	
Shared1	Shared	5 M	
Solitary2	Solitary	1 M	
Shared2	Shared	5 M	
Shared3	Shared	7 M	
Shared4	Shared	5 M	
Solitary3	Solitary	1 M	

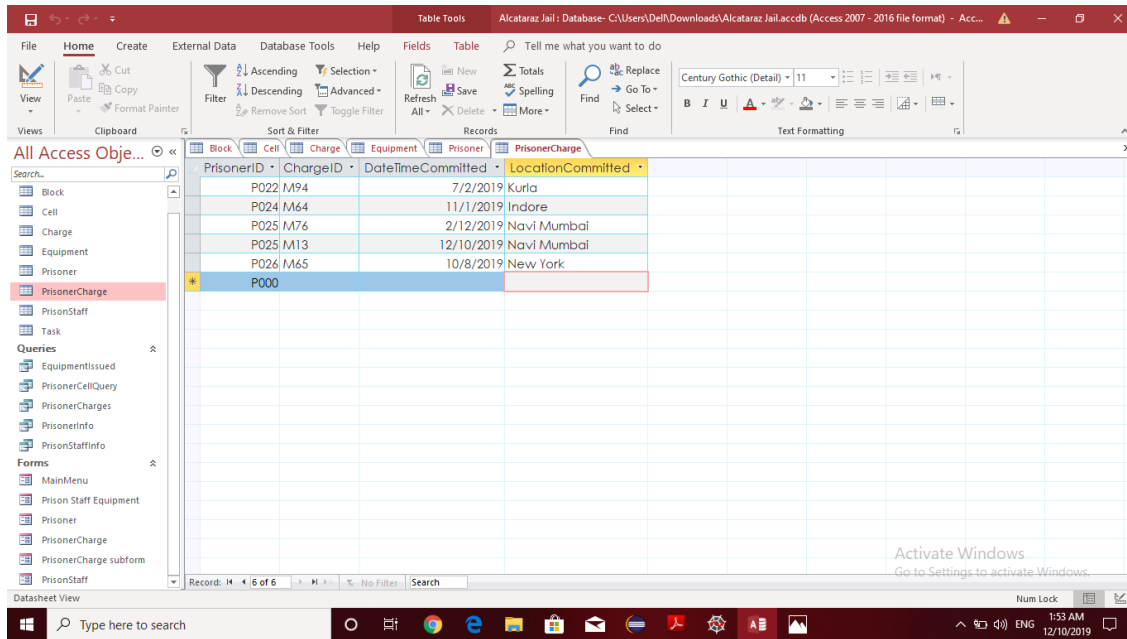
Record: 1 of 17

Datasheet View

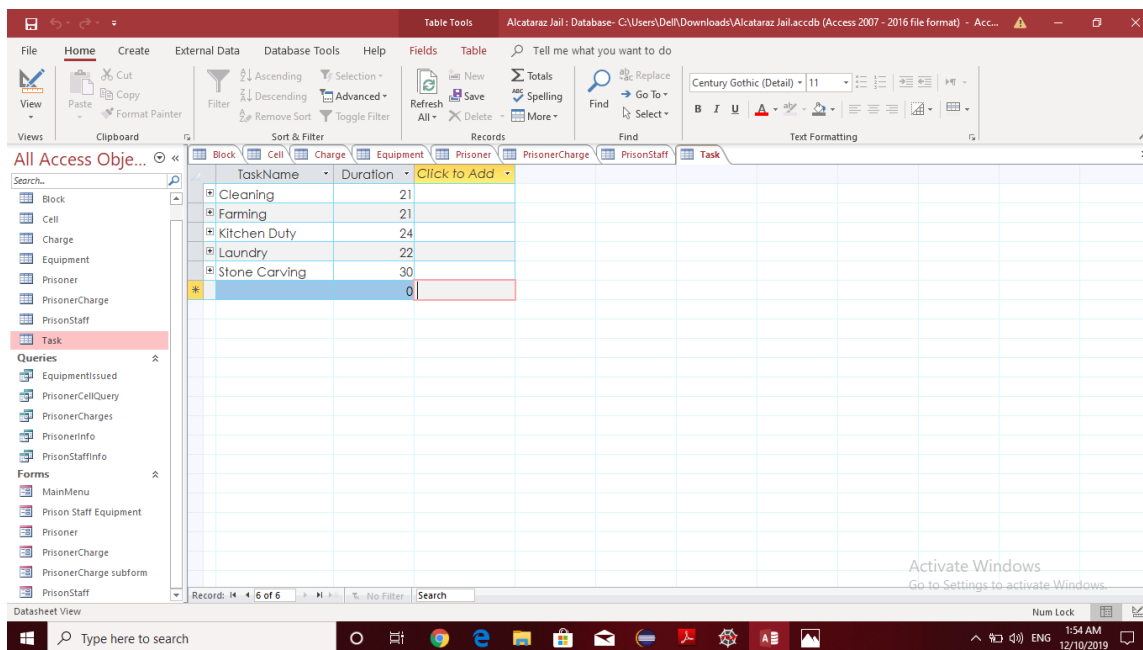
Windows Taskbar: Type here to search, 1:33 AM, 12/10/2019

**Cell:** This form allows prison staff the ability to choose a cell to allot a prisoner.





**PrisonerCharge & PrisonCharge Subform:** This form allows prison staff the ability to assign a charge and the crime location and date and it's severity to prisoner entering the prison in accordance to the court decision.



**Task:** This form allows prison staff the ability to assign a task to a prisoner while he/she is serving the court sentence.

Alcatraz Jail - Database- C:\Users\Del\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Help Tell me what you want to do

Filter Filter Ascending Selection New Save Spelling Find Replace Go To Select

Views Clipboard Sort & Filter Records Text Formatting

All Access Objects

Block Cell Charge Equipment Prisoner PrisonerCharge PrisonStaff Task

Queries

EquipmentIssued PrisonerCellQuery PrisonerCharges PrisonerInfo PrisonStaffInfo

Forms

MainMenu Prison Staff Equipment Prisoner PrisonerCharge PrisonerCharge subform PrisonStaff

StaffID: S002  
 FirstName: Sanju  
 LastName: Datt  
 DOB: 11/14/2018  
 Gender: Male  
 Address: mbsbsh  
 SupervisorID: 22  
 WorkingHours: 12  
 TaskName: Laundry

Add Record

EquipmentID	EquipmentName	StaffID
(New)		S002

Record: 1 of 2 No Filter Search

Activate Windows Go to Settings to activate Windows.

Windows Taskbar: Type here to search, 1:51 AM 12/10/2019

**PrisonStaff** : This form allows prison staff the ability to maintain records of all prison staff working in the jail.

Alcatraz Jail - Database- C:\Users\Del\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Help Datasheet Tell me what you want to do

View Themes Add Existing Fields Property Sheet Chart Settings Background Color Alternate Row Color Conditional Formatting

Views Themes Tools Formatting

All Access Objects

Block Cell Charge Equipment Prisoner PrisonerCharge PrisonStaff Task

Queries

EquipmentIssued PrisonerCellQuery PrisonerCharges PrisonerInfo PrisonStaffInfo

Forms

MainMenu Prison Staff Equipment Prisoner PrisonerCharge PrisonerCharge subform PrisonStaff

EquipmentID	EquipmentName	StaffID
1 AK-56		S003
2 Handcuff		S003
3 Tazer		S003
(New)		S000

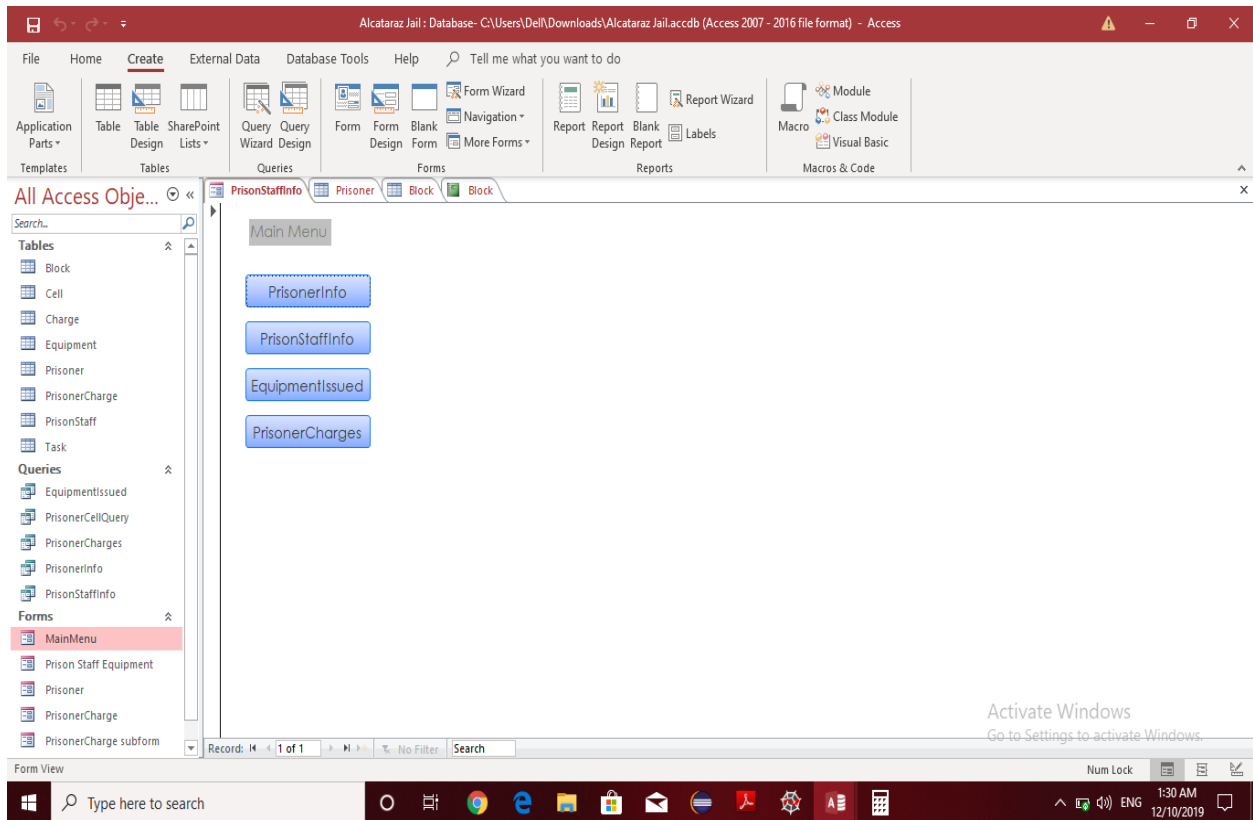
Record: 1 of 3 No Filter Search

Activate Windows Go to Settings to activate Windows.

Windows Taskbar: Type here to search, 1:30 AM 12/10/2019

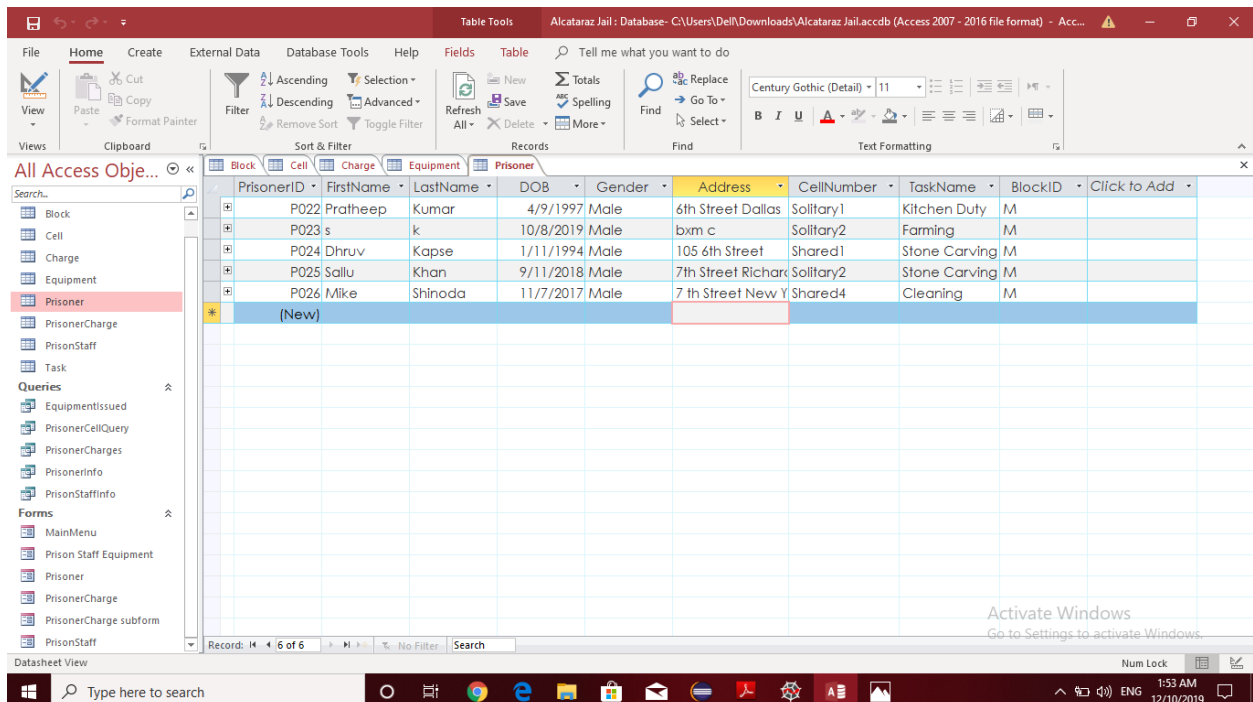
**Prison Staff Equipment**: This form allows prison staff the ability to maintain records of all the equipment available in the prison to be used by the staff

## SAMPLE REPORTS



The main menu shown above, informs prison supervisor where data about prisoner, Prison staff, Equipments used and the prisoner chargers can be entered and/or edited.

## Prisoner Info



## PRISON STAFF INFO

Table Tools: Alcatraz Jail : Database- C:\Users\Deil\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Acc...

File Home Create External Data Database Tools Help Fields Table Tell me what you want to do

Views Clipboard Sort & Filter Records Find Text Formatting

All Access Objects

Block Cell Charge Equipment Prisoner PrisonerCharge PrisonStaff Task

Queries

EquipmentIssued PrisonerCellQuery PrisonerCharges PrisonerInfo PrisonStaffInfo

Forms

MainMenu Prison Staff Equipment Prisoner PrisonerCharge PrisonerCharge subform PrisonStaff

StaffID	FirstName	LastName	DOB	Gender	Address	WorkingHours	TaskName	Click to Add
S002	Sanju	Datt	11/14/2018	Male	mbsbsh	12	Laundry	
S003	mnschbshk	.sdjcb.jbs	5/7/2019	Male	ncmxb	12	Farming	
(New)						0		

Record: 1 of 3

Activate Windows  
Go to Settings to activate Windows.

Windows taskbar: Type here to search, 1:53 AM, 12/10/2019

## EQUIPMENTS ISSUED

Table Tools: Alcatraz Jail : Database- C:\Users\Deil\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Acc...

File Home Create External Data Database Tools Help Fields Table Tell me what you want to do

Views Clipboard Sort & Filter Records Find Text Formatting

All Access Objects

Block Cell Charge Equipment Prisoner PrisonerCharge PrisonStaff Task

Queries

EquipmentIssued PrisonerCellQuery PrisonerCharges PrisonerInfo PrisonStaffInfo

Forms

MainMenu Prison Staff Equipment Prisoner PrisonerCharge PrisonerCharge subform PrisonStaff

Equipment	StaffID	Click to Add
E001 AK-56	S003	
E002 Handcuff	S003	
E003 Tazer	S003	
(New)	S000	

Record: 1 of 4

Activate Windows  
Go to Settings to activate Windows.

Windows taskbar: Type here to search, 1:53 AM, 12/10/2019

# PRISONER CHARGES

Alcatraz Jail : Database- C:\Users\De\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Help Tell me what you want to do

Compact and Repair Database Visual Basic Run Macro Relationships Object Dependencies Database Documenter Analyze Performance Analyze Table Access SharePoint Add-ins

Tools Macro Relationships Analyze Move Data Add-ins

All Access Objects

Search...

Block  
Cell  
Charge  
Equipment  
Prisoner  
PrisonerCharge  
PrisonerStaff  
Task

Queries

EquipmentIssued  
PrisonerCellQuery  
PrisonerCharges  
PrisonerInfo  
PrisonerStaffInfo

Forms

MainMenu  
Prison Staff Equipment  
Prisoner  
PrisonerCharge  
PrisonerCharge subform  
PrisonerStaff

Enter Parameter Value

Enter the Prisoner ID:  
22

OK Cancel

Activate Windows  
Go to Settings to activate Windows.

Ready Type here to search

Alcatraz Jail : Database- C:\Users\De\Downloads\Alcatraz Jail.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Help Tell me what you want to do

Compact and Repair Database Visual Basic Run Macro Relationships Object Dependencies Database Documenter Analyze Performance Analyze Table Access SharePoint Add-ins

Tools Macro Relationships Analyze Move Data Add-ins

All Access Objects

Search...

Block  
Cell  
Charge  
Equipment  
Prisoner  
PrisonerCharge  
PrisonerStaff  
Task

Queries

EquipmentIssued  
PrisonerCellQuery  
PrisonerCharges  
PrisonerInfo  
PrisonerStaffInfo

Forms

MainMenu  
Prison Staff Equipment  
Prisoner  
PrisonerCharge  
PrisonerCharge subform  
PrisonerStaff

PrisonerCharges

PrisonerID	ChargeID	DateTimeCommitted	LocationCommitted	FirstName	LastName	ChargeDescription	SeverityLevel
P022	M94	7/2/2019	Kurla	Pratheep	Kumar	Sexual Harrasment	Degree 2

Records: 14 of 1 No Filter Search

Datasheet View

Activate Windows  
Go to Settings to activate Windows.

Type here to search

4:04 AM 12/10/2019