# 11.3 Expected Persistent Class Sizes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **Employee** | \*EmpID**[[1]](#endnote-1)** | INT | 4 | 338 |
| supervisorID | INT | 4 |
| givenName | VARCHAR(70) | 72 |
| familyName | VARCHAR(70) | 72 |
| birthDate | DATE | 3 |
| email | VARCHAR(50) | 52 |
| username | VARCHAR(20) | 22 |
| password | VARCHAR(8) | 10 |
| prefPosition | VARCHAR(45) | 47 |
| prefLocation | VARCHAR(45) | 47 |
| plevel | INT | 4 |
| active | BOOLEAN | 1 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **Schedule** | \*schedID | INT | 4 | 17 |
| startDate | DATE | 3 |
| endDate | DATE | 3 |
| creatorID | INT | 4 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **PermissionSet** | \*plevel | INT | 4 | 29 |
| canReadSched | BOOLEAN | 1 |
| canReadOldSched | BOOLEAN | 1 |
| canEditSched | BOOLEAN | 1 |
| canViewResources | BOOLEAN | 1 |
| canChangePermissions | BOOLEAN | 1 |
| canReadLogs | BOOLEAN | 1 |
| canAccessReports | BOOLEAN | 1 |
| canRequestDayesOff | BOOLEAN | 1 |
| maxDaysOff | INT | 4 |
| canTakeVacations | BOOLEAN | 1 |
| maxVacationDays | INT | 4 |
| canTakeEmergencyDays | BOOLEAN | 1 |
| canViewInactiveEmps | BOOLEAN | 1 |
| canSendNotifications | BOOLEAN | 1 |
| trusted | BOOLEAN | 1 |
| preferredRank | INT | 4 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **Notification** | \*notificationID | INT | 4 | 227 |
| senderID | INT | 4 |
| recipientID | INT | 4 |
| viewed | BOOLEAN | 1 |
| message | VARCHAR(300) | 202 |
| type | VARCHAR(20) | 12 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **WorkingShift** | \*workShiftID | INT | 4 | 14 |
| scheduleID | INT | 4 |
| startTime | TIME | 3 |
| endTime | TIME | 3 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **Skill** | \*skillName | VARCHAR(45) | 46 | 248 |
| skillDescreption | VARCHAR(200) | 202 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **Position** | \*positionName | VARCHAR(45) | 46 | 248 |
| positionDescreption | VARCHAR(200) | 202 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **EmpSkill** | \*empID | INT | 4 | 50 |
| skillName | VARCHAR(45) | 46 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **PosSkill** | \*positionName | VARCHAR(45) | 46 | 92 |
| \*skillName | VARCHAR(45) | 46 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **Location** | \*location | VARCHAR(20) | 22 | 224 |
| locDesc | VARCHAR(200) | 202 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **Shift** | \*shiftID | INT | 4 | 14 |
| shiftReqID | INT | 4 |
| startTime | TIME | 3 |
| endTime | TIME | 3 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **ShiftPos** | \*shiftID | INT | 4 | 54 |
| \* positionName | VARCHAR(45) | 46 |
| posCount | INT | 4 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **ScheduleTemplate** | **\***shiftReqID | INT | 4 | 8 |
|  | creatorID | INT | 4 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **WorkingEmp** | **\***WorkingShiftID | INT | 4 | 8 |
| **\***empID | INT | 4 |
| **Table** | **Attributes** | **Attribute type** | **Data size(Bytes)** | **Total** |
| **GlobalSettings** | **\***tempKey | INT | 4 | 4 |
|  |  |  |  |  |

## Expected Data Size

Expected max number of object is derived from Deerfoot Inn and Casino captured requirements:

### Expected max number of stored objects

* **Employee**- Expected to hold 500 active employees. But since disabled employees are not deleted, our system is expected to store disabled employees who have been replaced. On average the total is 800 active and disabled employees. According to the requirements analysis employees are expected to increase on an average of 50 annually.
* **Schedule-** Expected to hold 34 schedules per a week. Since there are 500 employees with 15 in a single work group. Each workgroup has a schedule. In a year the number is expected to grow to 1768 schedules.
* **PermissionSet-** Expected to hold a maximum of 20 different permission sets.
* **Notification-** Expected to hold around 50 notifications per active employee at any given time. Therefore, the total at any given time would be 25, 000 notifications.
* **WorkingShift-** Expected to hold 15 per week. This would grow to 780 by the end of the year.
* **Skill-** Expected to hold1000 skills for all the positions
* **Position-** Expected to hold 200 positions.
* **EmpSkill-** Expected to hold 500, 000.
* **PosSkill-**. Expected to hold 200000.
* **Location-** A maximum of 50 locations. This includes 9 restaurants, 2 hotels, casino floor, customer service …etc
* **Shift** – An employee is expected to cover 12 shifts in 6 days. So a total of 500 employees is expected to cover36 000 shifts per a week. Therefore, the system is expected to store a maximum of 1872000 shifts in the first year.
* **ShiftPos-** Expected to hold a maximum of 374400000.
* **ScheduleTemplate-** 500
* **WorkingEmp-** For 6 days, it is expected to hold 3060. This is derived from the multiplication of days by the max number of schedules per week. In a year that would grow to 159 120.
* **GlobalSettings-** With the given information it isnot known yet. This value is to be calculated in the next phase.

### Expected data size of stored objects

The following equation had been used to calculate the size:

Expected data size (data size for each persistent class \* expected max number of stored objects of each class)

Each object will approximately have the following data sizes in bytes:

* **Employee-** 169 000
* **Schedule-** 30056
* **PermissionSet-** 580
* **Notification-** 6583
* **Skill-** 248 000
* **Position-** 49600
* **EmpSkill-** 25, 000, 000
* **PosSkil-** 184 00000
* **Location-** 11200
* **Shift-** 2 620 8000
* **ShiftPos-** 20217600000
* **ScheduleTemplate-** 2000
* **WorkingShift-** 10920
* **WorkingEmp-** 1272960
* **GlobalSettings-** With the given information it isnot known yet. This value is to be calculated in the next phase.

1. Attributes with an asterisk next to them represent primary keys. [↑](#endnote-ref-1)