UTA Mac Facility Maintenance System

Here is the class project - UTA Mac(Maverick Activities Center) Facility Maintenance System. Users (students and faculty) and the Facility Manager can report needed maintenance for the following facilities:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Facility Type** | **Name** | **Interval** | **Duration** | **Venue** |
| Multipurpose rooms | MR 1-4 | 1 hour | Same day | Indoor |
| 5 Indoor basketball courts | IBBC 1-5 | 1 hour | Same day | Indoor |
| 9 Volleyball courts | IVBC 1-9 | 1 hour | Same day | Indoor |
| Indoor soccer gymnasium | SCG | 2 hours | Same day | Indoor |
| 5 Racquetball courts | RBC 1-5 | 30 min | Same day | Indoor |
| 10 Badminton courts | BMC 1-10 | 30 min | Same day | Indoor |
| Table Tennis | TT1 | 30 min | Same day | Indoor |
| Conference rooms | CR 1-5 | 1 hour | Same day | Indoor |
| 2 Outdoor Volleyball Courts | OVBC 1-2 | 2 hours | 7-day | Outdoor |
| 2 Outdoor Basketball Courts | OBBC 1-2 | 2 hours | 7-day | Outdoor |

Maintenance action report (MAR). Users (students and faculty) and the Facility Manager report needed maintenance per a MAR form. The MAR form has the following fields and possible values.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Facility Type** | **Name** | **Urgency** | **Description** | **Reported By** | **Date** | **MAR number** |
| Multipurpose rooms | MR 1-4 | Unusable | Text description of needed repairs | Username | Date field | MAR 001-999 |
| 5 Indoor basketball courts | IBBC 1-5 | Major |  |  |  |  |
| 9 Volleyball courts | IVBC 1-9 | Medium |  |  |  |  |
| Indoor soccer gymnasium | SCG | Minor |  |  |  |  |
| 5 Racquetball courts | RBC 1-5 |  |  |  |  |  |
| 10 Badminton courts | BMC 1-10 |  |  |  |  |  |
| Table Tennis | TT1 |  |  |  |  |  |
| Conference rooms | CR 1-5 |  |  |  |  |  |
| 2 Outdoor Volleyball Courts | OVBC 1-2 |  |  |  |  |  |
| 2 Outdoor Basketball Courts | OBBC 1-2 |  |  |  |  |  |

The Assigned To and Assigned Date fields are only set by the Facilities Manager (FM). The facilities manager assesses each reported problem and may change any of the fields in the MAR. For each reported item marked as "Unusable" the FM takes the action to remove that facility from the list of available systems (this project does not implement this feature). The FM uses the following table to assign repairs to workers after indicating the estimate of repair. The repairer is required to complete the repair that day of assignment, so no indication of the repair being made is needed (complete/incomplete status is not needed).

|  |  |  |  |
| --- | --- | --- | --- |
| **MAR number** | **Assigned to** | **Assigned date** | **Estimate of repair** |
| MAR 001-999 | Username | Date field | Multiple days |
|  |  |  | One day |
|  |  |  | Multiple hours |
|  |  |  | One hour |
|  |  |  | 30 minutes |

System Users: Admin, User, Facility Manager, and Repairer.

Facility search. The user shall be able to select from the type of facility (Multipurpose room, Indoor basketball court, Indoor volleyball court, Indoor soccer gymnasium, racquetball court, badminton court, table tennis, conference room, outdoor volleyball court, or outdoor basketball court), the date (defaults to today), the start time (defaults to now) and see a report of available facilities for that type.

Available facility report. The system shall show the availability of facilities as follows (the following is a selectable list) to the user:

1. Date
2. Time slot
3. Type of facility requested
4. Facility Name (list them in ascending numeric order)

Notice that the Facility Manager may need to see additional information.

Once the user has selected a specific facility the system assigns the first available numeric facility number (e.g., CR 2).

Four different kinds of users for the system:

1. Facility manager
   1. creates own profile
   2. views numbers of facilities available by type, date, and time
   3. views details of a specific facility
   4. adds a new facility
   5. assigns a MAR to a repair staff
   6. searches assigned repairs by date or repairer.
   7. views repairers schedules
   8. update his own profile
2. User (student, faculty, and staff)
   1. creates own profile
   2. reports problems
   3. update profile
3. Repairer
   1. requests reservation (to repair a facility)
   2. view my reserved repairs
   3. modify my reserved repairs
   4. cancel my reserved repairs
   5. update profile
4. Admin
   1. creates own profile
   2. edit user profile
   3. change user roles

All users will have the standard functions like register, login, logout. Each system user must register and for simplicity selects their role during registration. Assume that a single user that has multiple roles, e.g. User and Facility manager would register twice with different user names - the only affect of this rule is that each user name is unique and may be used as a Primary key in the database. Each user registers with at least a user name, role, UTA id, and personal details, contact information, etc.

Project must use - Eclipse, Java/JSP/JDBC/MySQL.

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Notes --

User Scenarios

1. Register (creates profile), Login, Report a Problem (Create MAR), Logout
2. Login, Update Profile, Logout

Admin

1. Register (create profile), login, change user role, logout
2. Login, edit (another) user profile, logout

Repairer (assume 2 repairers)

1. Register (creates profile), login, view my reserved repairs (search MARs assigned to me), view selected MARs, request reservation (to repair facility), view my reserved repairs, logout
2. Login, view my reserved repairs, search facilities for free time, modify my reserved repairs (changes time), logout
3. Login, view my reserved repairs, cancel my reserved repairs, logout

Facility Manager

1. Register (creates profile), searches MARs for unassigned problems, reviews an unassigned problem, completes problem report (fills in urgency and estimate of repair time, makes sure all fields are compete, views repairers schedules for that day, searches assigned repairs by date, assigns the problem to a repairer, logout
2. login; views number of facilities available by type, date or time; views details of a specific facility; adds a new facility; logout

Rules added to the project

1. Each repairer may only be assigned by the FM: (new rule)
   1. 5 repairs per day
   2. 10 repairs per week (Monday-Sunday interval)
2. Repairers must reserve facilities in accordance with the Duration intervals (existing rule)
   1. cannot reserve Same day facility in advance
   2. cannot reserve 7-day duration facility more than 7-days in advance
3. FM cannot assign an incomplete MAR to a repairer - all fields must be filled out (existing rule)

Use regex for passwords