**Project**

Fitness Center - ver1.0

**Problem**

**Osnovna uloga aplikacije je da podrži evidetniranje i praćenje članstva i prihoda jedne teretane.**

**Usluge teretane je moguće plaćati kroz mesečnu pretplatu, koja uključuje neograničen broj termina u toke tekućeg meseca, ili jednokratno gde prilikom svake posete teretani član plaća jedan termin. Takođe, članovima teretane na raspolaganju su i individualni treneri čije usluge mogu koristiti u toku treninga. Njihove usluge se dodatko naplaćuju, bez obzira da li klijent plaća pretplatu ili ne. Potrebno je podržati registraciju novih članova i trenera. Potrebno je podržati evidentiranje svagog termina u teretani (datum i vreme početka i kraja treninga, cena koja će biti 0 dinara ukoliko član plaća mesečnu pretplatu, kao i informacija o tome da li je i, ako jeste koji je, trener bio angažovan. Ukoliko jeste, njegova cena ulazi u cenu treninga). Potrebno je podržati izlistavanje svih članova sa svojim terminima vežbanja, kao i pretraga pojedinačnih članova (minimalno po ID). Takođe, potrebno je omugućiti pretragu po vremenskom intervalu pri čemu se vraćaju članovi sa terminima koji upadaju u zadati interval. Potrebno je podržati izlistavanje trenera sa treninzima u kojima su učestvovali.**

**Gym members**

* Lack of data integrity: Receptionist may lost the reservation information and gym members need to refill their profile information again.
* Privacy issue: Gym members’ names and schedules are shown on the reservation table which might be exposed and cause information leak.

**Receptionists**

* Mistaken reservation: Receptionists may make mistakes on reservations.
* Long processing time: Receptionists need to manually check the reservation table to find the available fitness instructor slot.

**Fitness instructors**

* Schedule not aligned with reservation: Fitness instructor cannot align their schedule with reservation schedule on time.

**HR**

* Difficulties in data collection: Hard task to collect proper data and do personal evaluation for fitness instructors due to inaccurate information such as total courses, working hours, and popularity, etc.

**Accountant**

* Lack of data checking: Can not check invoices with payment, appointment, each program due to original data missing.

**Accountant Equipment Management Unit**

* Untimely maintenance: No proper records management for equipment purchasing, and follow-up maintenance.

**Managers**

* Difficult to deploy reservation programs: Not flexible to deploy new programs corresponding to market change.
* Higher cost: Paper based reservation cause massive paper wastage.
* Difficulty in data analysis: Hard to do data analysis to further guide the future marketing strategies.

Above all, as the development of the gym’s business, an efficient management information system should be developed which can achieve membership management, fitness instructors’ management, and fitness facilities management. It can help members to make reservation more easily, help instructors to make schedule more clearly and give the members reasonable exercise advises, it also help the gym to manage the staff and equipment.

**Fact finding**

Nowadays reception is the only medium for members to book an appointment either through phone or front desk. The resulting manual tasks may cause mistakes such as duplicate booking, wrong fee calculation etc, not to mention the low efficiency.

Instructors have to check the reservation page by page to make sure their working schedule, which is not convenient to manage their timetable. Moreover, being informed by reception desk is time consuming and not easy to keep information up to date.

For HR, accountant, and equipment management unit, it is a hard task to collect original data from current manual record. The accuracy and promptness of their work is seriously affected.

From management’s perspective, there is lack of valuable data and materials for them to grasp and analyse the current operating situation, and to make business strategy plan.

The new management system (hereinafter "system") will allow members to manage (book/update/cancel) their appointments online, provide detailed information for instructors,HR, accountant and equipment management unit, and update immediately among the above users. Managers can also make use of data to support decision-making (e.g. marketing plan, purchasing plan), through data mining and integration.

**Business Rules**

**Online reservation**

* Members can manage (book/update/cancel) their appointments online through system.
* Receptionists can help to manage appointments online in case of getting telephone reservations.
* System offers automatic email reminders.

**Instructor schedule confirmation**

* Instructor log into system to check their available timetable.
* Member can select the instructor and available time.
* Instructor can check their work schedule.

**HR management**

* HR unit can get instructors’ classes information from system.
* HR unit can manage instructors’ employee information (e.g. name, position, salary, bonus) through system.

**Accounting information collection**

* Accounting unit can use system to get the original information from appointment and payment data, as well as the salary from instructor data, and purchasing data from equipment data.

**Equipment maintenance**

* Equipment management unit can make their equipment purchasing and maintenance plan according to the data.

**Approval and policy-making**

* Management review, confirm and approve tables (e.g. instructors’ timetable, equipment purchasing application).
* Management can use collected members information (e.g. members’ age, gender) to make marketing plan, decide instructors’ bonus according to their work schedule, and adjust purchasing plan based on equipment usage information.

**Korisnici aplikacije**

**Gosti sajta**

Pregledaju ponudu kluba.

Zahtevaju clanstvo (popuna SignUp forme).

Ostvaruju kontakt putem e-mail forme sa sajta.

**Clanovi kluba**

Vrse prijavljivanje putem Login forme sa sajta(koriscenjem user,password kombinacije)

Zahtevaju promenu lozinke putem e-mail reseta.

Zakazuju termin treninga.

Biraju paket treninga (trenutno predlozeni mesecni ili satni paket).

Biraju raspolozivog trenera za izabrani trening.

Pregledaju svoje aktivnosti u odabranom poeriodu.

Pregledaju svoja placanja - dugovanja.

**Treneri**

Vrse prijavljivanje putem Login forme sa sajta(koriscenjem user,password kombinacije).

Zahtevaju promenu lozinke putem e-mail reseta.

Azuriraju svoje licne podatke (unos,brisanje,izmena)..

Pregledaju svoje aktivnosti u odabranom periodu.

**Operateri**

Vrse prijavljivanje putem Login forme sa sajta(koriscenjem user,password kombinacije).

Zahtevaju promenu lozinke putem e-mail reseta.

Azuriraju svoje licne podatke (unos,brisanje,izmena).

Azuriraju podatke o trenerima (unos,brisanje,izmena).

Azuriraju podatke o treninzima (unos,brisanje,izmena).

Zakazuju termin clanovima.

Zakazuju termin treneru izabranom od strane clana.

Odgovaraju na zahteve za upisom novih clanova .

Dodatni zahtevi u pogledu funkcionalnosti aplikacije :

- izlistavanje svih članova sa svojim terminima vežbanja

- pretraga pojedinačnih članova kluba po raznim parametrima.

- izvestaji po vremenskim intervalima ,sa presecima – clan,trener vezba…

- izvestaj trenera sa treninzima u kojima su učestvovali.

- pregled slobodnih termina ( po vremenu,treneru...sa mogucnoscu zakazivanja termina)

- izvestaj o naplati , realizaciji, po raznim kriterijumima.

- automatizovano slanje mesecnih pregleda clanovima sa izvestajem o dugovanjima…

**Karakteristike poslovanja:**

- Mesecna pretplata ( racuna se od dana aktiviranja do kraja tekuceg meseca )

- Naplata se smatra izvrsenom odmah po potvrdi termina .

-Duzina treninga za jedan paket je 1 sat.

**Tabela potrebnih podataka**

|  |  |  |
| --- | --- | --- |
| Tip podatka | Ime tabele | Polja |
| Clanovi | clanovi | id,  name,  surname,  email,  password,  address,  Phone,  type\_package. |
| Operateri | osoblje | id,  name,  surname,  email. |
| Treneri | treneri | id,  name,  surname,  price. |
| Vlasnik | admin | id,  name,  surname. |
| Paketi izabrani od clanova | clanovi\_has\_paketi | clanovi\_id,  paketi\_id,  vreme. |
| Knjiga Treninga | KnjigaTreninga | id,  treneri\_id,  cena,  clanovi\_has\_paketi,  datum. |

**E-R Diagram**



**Tabele- Relationships**

|  |  |  |
| --- | --- | --- |
| Tabela | Relationship | Tabela |
| clanovi | 1:M | clanovi\_has\_paketi |
| paketi | 1:M | clanovi\_has\_paketi |
| clanovi\_has\_paketi | 1:M | KnjigaTreninga |
| treneri | 1:M | KnjigaTreninga |

**Meta Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tabela | kolona | Tip kluca | Tip podatka | Zahtevan |
| clanovi | InstructorID | Primary Key | Number | yes |
| FirstName |  | Short text | yes |
| LastName |  | Short text | yes |
| Gender |  | Short text | no |
| Age |  | Number | no |
| Phone# |  | Number | yes |
| Address |  | Short text | no |
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| operateri | ID | Primary Key | Number | yes |
| FirstName |  | Short text | yes |
| LastName |  | Short text | yes |
| Gender |  | Short text | no |
| Age |  | Number | no |
| Phone# |  | Number | yes |
| Address |  | Short text | no |
| City |  | Short text | no |
| State |  | Short text | no |
| Zip |  | Short text | no |
| Referred |  | Short text | no |
| Appointments | AppointmentID | Primary Key | Number | yes |
| MemberID | Foreign Key | Number | yes |
| BookDate |  | Date | yes |

**Normalizacija**

**Relation between Program and Equipment**

Before doing normalization, in our design the ER diagram between Program and Equipment are as below, the issues are:

* contact info .

After doing normalization, we have the solutions as follow:

* Many to many is solved by introducing one bridging table Program\_Equipment.
* Multiple values is solved by 1NF. In bridging table, its primary is composite of equipment table’s PK(EquipmentID) and program table’s PK(ProgramID).
* Transitive dependency is solved by 3NF. We separate the supplier’s info as a separate table.