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## Applied Programming Concepts

### Assignment 5 – Modeling Part 2

```
Are you a Student, Admin or Instructor? Admin
Enter username: yousafzaim
Enter password: password1

Login successful!
Admin Malala Yousafzai [30001] created
Welcome to the CURSE registration system.
1. Add a course to system
2. Remove a course from system
3. Search courses
4. View/print schedule
5. Print roster
6. Link/unlink user from course
7. Add user
8. Logout
Enter choice : 1
```

Figure 1: Admin logging in and seeing menu

```
Enter choice : 1
Adding a course to the system.
Title : stuff
CRN : 31799
Error : CRN already exists.
31799
Applied Programming Concepts
BSEE
Joseph Fourier
1-2:50pm
TR
Summer
2020
4

Welcome to the CURSE registration system.
```

Figure 2: Admin typing in CRN that already exists when trying to add course to system

Figure 1 above shows the admin Malala Yousafzai logging into the system and being presented with 8 options. Since each user type has different abilities, each derived class definition contains a menu function – either adminMenu(), instructorMenu() or studentMenu(). There is a message indicating the successful login and showing the WIT ID number of the admin. In Figure 2, the admin tries to add a course to the system which utilizes the function addCourseSys(). However, there is a mistake and the CRN entered already exists in the database. The function catches this and tells the admin that they should enter a different CRN so that when students register, they aren't accidentally registering for two classes under the same CRN. The database is searched for the CRN the user entered and the query is returned, as shown in Figure 2.

#	CRN	Title	Department	Instructor	Times	DaysOfWeek	Semester	Year	Credits	Roster
1	31799	Applied Programming Concepts	BSEE	Joseph Fourier	1-2:50pm	TR	Summer	2020	4	
2	31406	Signals and Systems	HUSS	Nelson Mandela	10-11:50am	MW	Summer	2020	4	NULL
3	31290	Computer Architecture	BSAS	Galileo Galilei	9:30-10:50am	TR	Summer	2020	4	NULL
4	31047	Advanced Digital Circuit Design	BSCO	Alan Turing	8-9:20am	WF	Summer	2020	4	NULL
5	31044	Computer Networks	BCOS	Katie Bouman	8-9:20am	TR	Summer	2020	4	10001-10002-10003-10004
6	69420	Good Engineer	BSGE	Saurav Basnet	8-9:20	MTW	Summer	2020	4	NULL
7	12345	How to be a good engineer	BSCO	Mark	Thompson	MTWRF	Summer	2020	3	NULL

Figure 3: "How to be a good engineer" is appended to the list of courses

In Figure 3, the updated CURSE.db file shows the class being added to the Course table. All the information the admin types, as seen in Figure 4 below, is present in the table – the only blank field is the roster which can be edited by the Link/Unlink function (not yet implemented) and the Student Add/Drop Course function.

```
Enter choice : 1
Adding a course to the system.
Title : How to be a good engineer
CRN : 12345
Department : BSCO
Instructor: Mark
Time slot : Thompson
Days (MTWRF) : MTWRF
Semester (Fall, Spring, Summer) : Summer
Year : 2020
# of credits : 3
12345
How to be a good engineer
BSCO
Mark
Thompson
MTWRF
Summer
2020
3
None
Success! Course added to system.
Welcome to the CURSE registration system.
```

Figure 4: Successfully adding new course

```
Login successful!
Student Isaac Newton [10001] created
Welcome to the CURSE registration system.
1. Add a course
2. Drop a course
3. Search courses
4. View/print schedule
5. Check conflicts
6. Logout
Enter choice : 1
Add a course to your schedule.
enter CRN of course you want to add: 31799
Welcome to the CURSE registration system.
```

Figure 5: Isaac Newton registering for a course

#	ID	FirstName	LastName	GradYear	Major	Email	Password	Schedule
1	10001	Isaac	Newton	1668	BSAS	newtoni	pass1	31799

Figure 6: CRN added to Student's schedule

Figure 5 shows Student Isaac Newton registering for the class using CRN 31799. When this happens, the CRN is added to the Schedule field in that student's row. This also updates the Course table (Figure 7) and shows Isaac Newton's WID# in the Roster field (Figure 6).

#	CRN	Title	Department	Instructor	Times	DaysOfWeek	Semester	Year	Credits	Roster
1	31799	Applied Programming Concepts	BSEE	Joseph Fourier	1-2:50pm	TR	Summer	2020	4	-10001

Figure 7: WID# added to Roster