GEMS

Girls' Education Monitoring System

User Manual for
The Cohort Tracking System (CoTrack)

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Overview and Introduction

The Cohort Tracking System (CoTrack) was designed to collect and analyze individual student enrollment data from schools offering from pre-school through Grade 12. Cohorts are defined as the set of students enrolled in a grade in a given year. The system will follow students for up to 18 years after the cohort year.

Data typically come from school lists of students enrolled in a given grade by school year. Although the system is designed to use the student's name to identify each student, where identification numbers are available these can be used instead of the student name.

CoTrack consists of:

- a data capture screen to facilitate capture of individual student enrollment information.
- A Cohort Grade Completion screen, which analyzes the information and computes the percentage of the specified cohort that was eventually enrolled in subsequent grades, as well as the percentage of the cohort that achieved "perfect progress," i.e., reached the grade without repeating any grade.
- An Enrollment Counts by School Year and Grade screen.
- A Cohort Survivorship Statistics screen, which computes the percentage of the cohort that is still enrolled in the selected school in any subsequent year. This screen also provides "perfect progress" statistics as well.

All analysis screens can be printed.

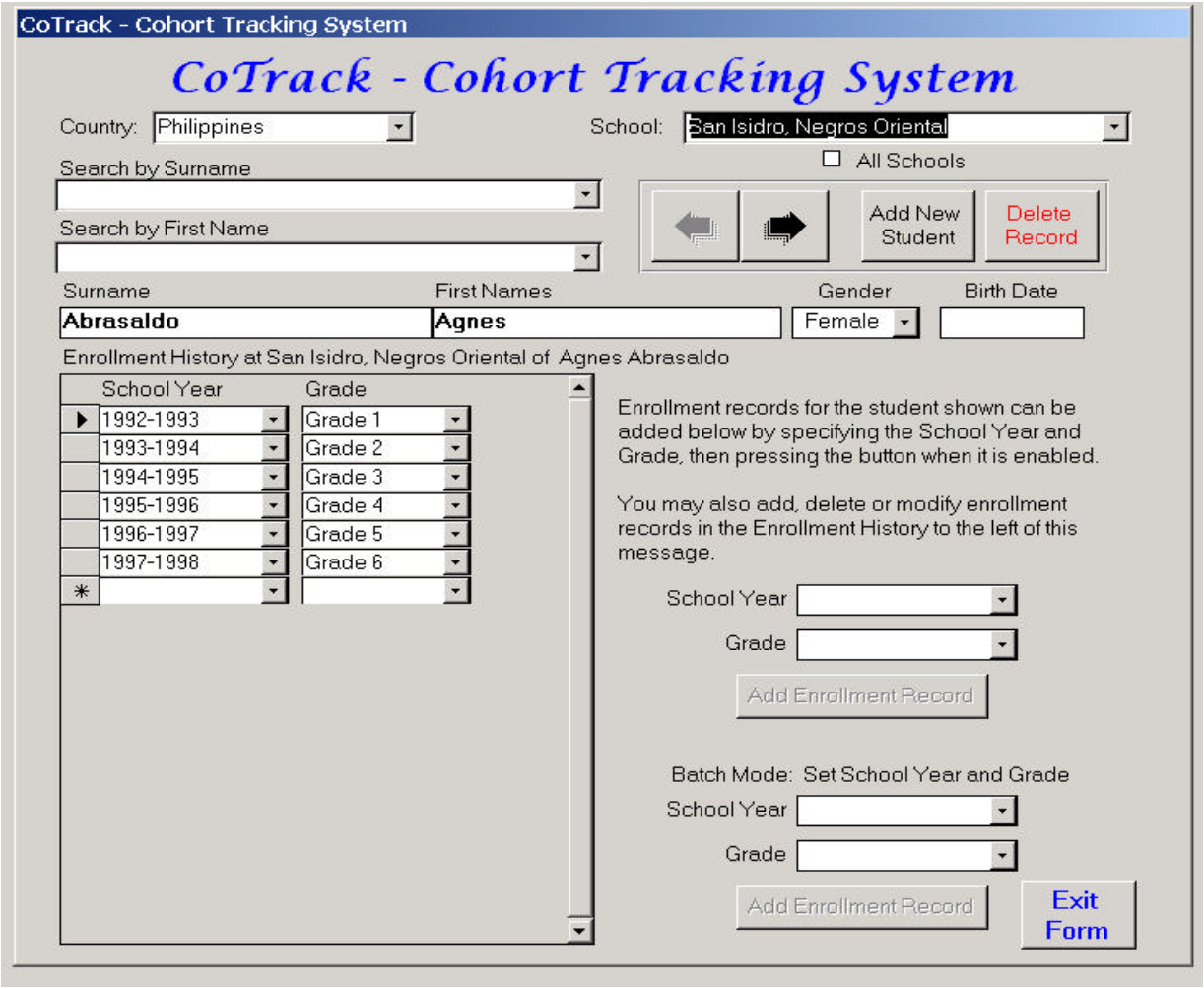
The flexibility of selecting and analyzing cohorts of any grade and school year is an important feature of CoTrack. Researchers often have to make do with whatever data a school has available. Where data are quite limited, this flexibility can be used to obtain, for example, grade transition statistics by school year. Where data are more extensive and complete, grade-completion statistics can be generated to compare the experiences of student cohorts across school years (e.g., percentage of first-graders who ever complete a given grade).

CoTrack was developed in Microsoft Access 2000, a popular relational database management system for personal computers. In the present version it has been programmed as a "stand-alone" (i.e., single-user) system, but can easily be modified to operate in a networked environment.

Operating the CoTrack system

The following screen shot shows the principal data capture screen. After choosing the country and school from the pull-down menus, the first (alphabetically listed) student is displayed and the Add New Student button is enabled (students cannot be added without specifying a school).

Figure 1 Principal Data Capture Screen



It is possible to “navigate” through the students using the buttons with arrows, but it is more common to search for a student based upon either their surname or given names. The two search boxes require that the user enter as many letters of the name as needed to “narrow down” the search. The list displayed when the pull-down menu button is pressed will be alphabetically displayed (by surname in the first box, by given names in the second box) based on the letters

entered. See Figures 2 and 3, below. Selecting a student from the list will instantly navigate to the record of the student selected.

Figure 2 Search by Surname

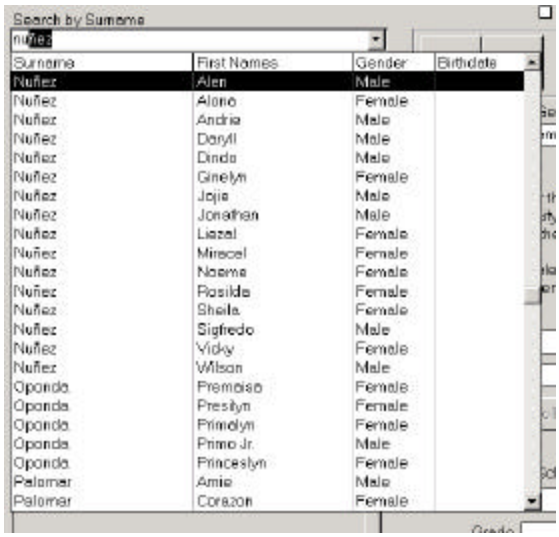
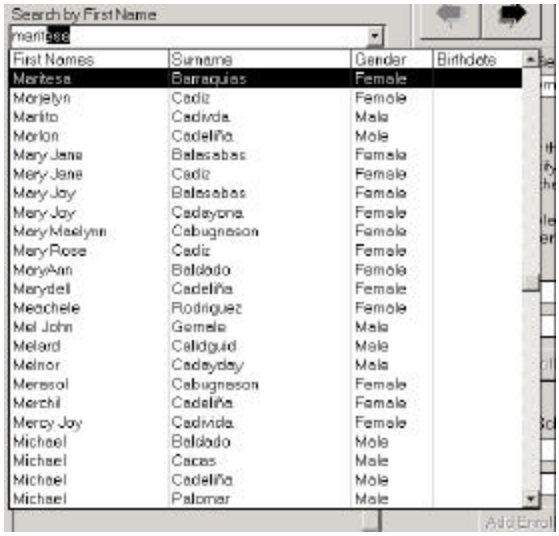
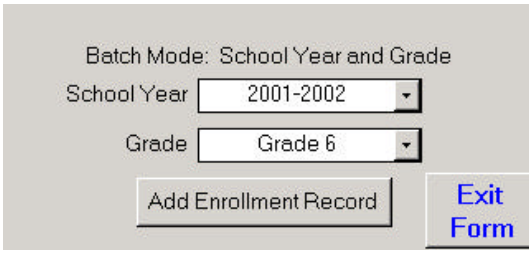


Figure 3 Search by First Name



Most schools keep their enrollment data in lists by school year and grade. To facilitate the entry of the school year and grade data into individual student records, CoTrack allows you to set these variables once and apply them to students selected using the search function. The example in Figure 4, below, shows that the user is processing the 2001-2002 school year list of students in Grade 6. Just clicking the Add Enrollment Record button will add these values to the student selected. Nonetheless, the system will not allow the user to enter more than one grade in a school year.

Figure 4 Setting the School Year and Grade for Processing a List



An alternative method of entering data is appropriate when enrollment data are organized by student (i.e., a list of what grade a given student was enrolled in by school year). Shown in Figure 5, the pull-down buttons are "intelligent" in that they consider the existing information for a student. If a student has already been enrolled in Grade 3 in a prior year, for example, the student cannot be enrolled in a lower grade in a subsequent year. The student can be enrolled in the same grade in a subsequent year (repeating the grade). Similarly, only school years for which data have not already been entered are shown in the pull-down list of school years. These features help reduce data entry errors and inconsistency in the database.

In the example shown in Figure 5, the student has already been enrolled in grades 3, 4, and 5 in the 1992-1993, 1993-1994 and 1994-1995 school years, respectively. Regardless of the order in which data are entered, the pull-down menu will not allow the user to select a school year that is already been entered for the student. Thus, the first school year available in the pull-down list is 1995-1996 (the system was set up to be able to record school years from 1992-1993 forward).

Figure 5 "Intelligent" Pull-down Menu for School Year

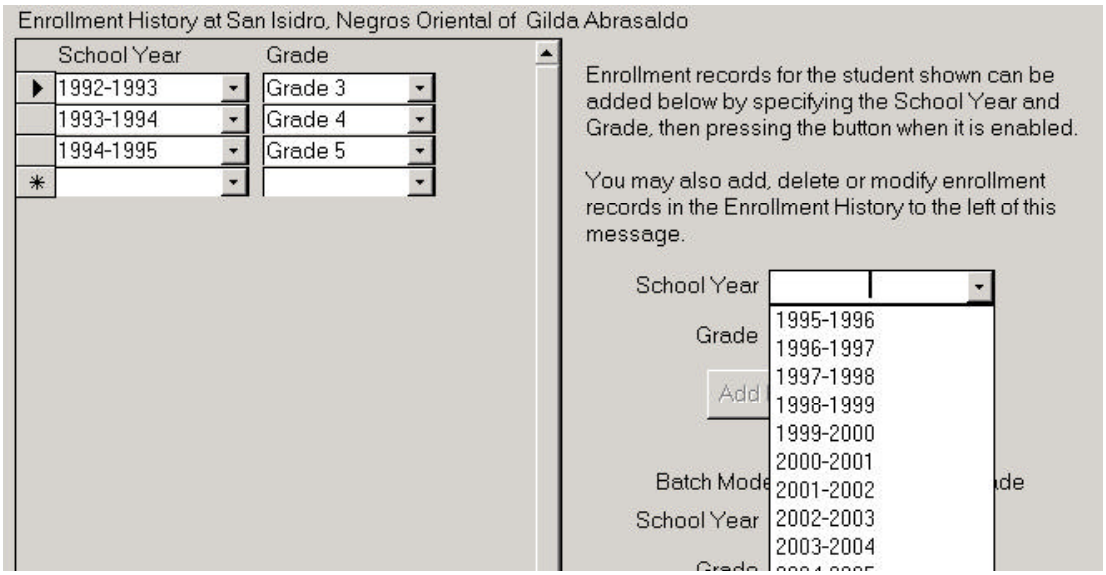
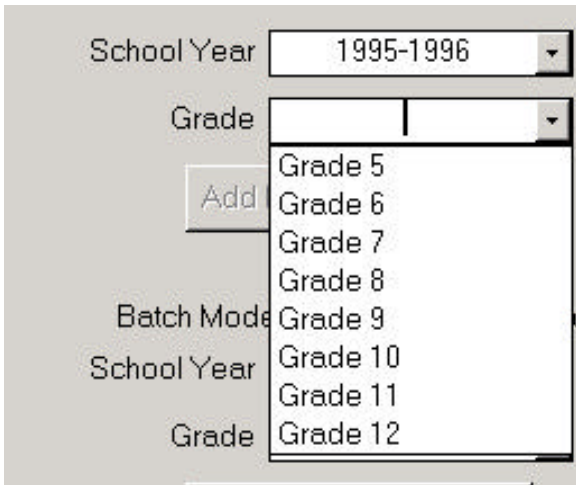


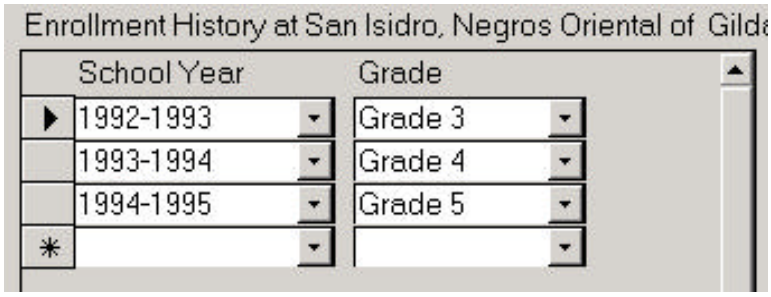
Figure 6 shows the “intelligent” Grade selection process for the same example. The lowest grade that this student can be enrolled in during the 1995-1996 school year is Grade 5 (repeating the grade). Once both School Year and Grade have been selected, the Add Enrollment Record located beneath the pull-down menus will become activated.

Figure 5 "Intelligent" Pull-down Menu for Grade



Data can also be entered, modified or deleted in the Enrollment History window itself. Figure 8 shows this window:

Figure 8 Enrollment History Window



The button with the right arrow on it  shows the “current” enrollment record. To delete the enrollment record of any given year, press the button to the left of it (to make it the “current” record) and then press the Del (Delete) key on the keyboard.

School Year and Grade data may be modified in any row, although the CoTrack system will not allow a school year to be recorded more than once. This mode of data entry does not examine existing School Year and Grade information to make the School Year and Grade pull-down menus “intelligent.”

Additional data can be entered in the row of the Enrollment History window that is marked with an asterisk in the button at the left.  The database system ensures that a given school year can only be entered once for each student.

Because spelling of student names is often inconsistent across school years, the user may discover that a duplicate student record has been entered. This is usually detected when using the search boxes. Go to the student record that is to be deleted using the search boxes or the navigation arrows.

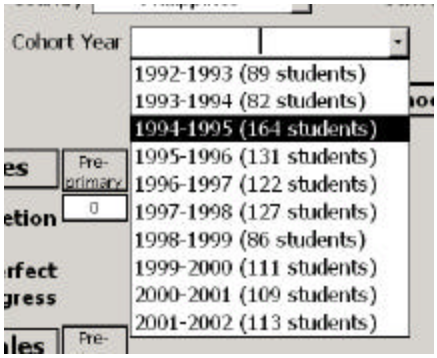
To delete the duplicate student record, press the Delete Record button. 

Be sure that you enter any missing enrollment data in the correct student record.

The Cohort Grade Completion Screen

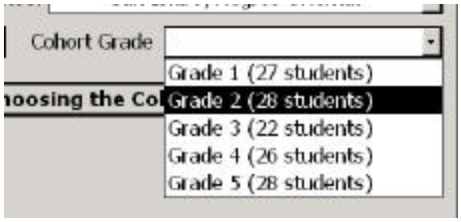
The Cohort Grade Completion screen allows the user to see what becomes of a given cohort of students. A cohort is simply the group of students who were in a given grade in a given school year. The first step in defining a cohort is to select the Cohort Year using the pull-down Cohort Year list (Figure 9). The list shows how many students are in the system as enrolled in each of the school years.

Figure 9 Cohort Year Pull-down List



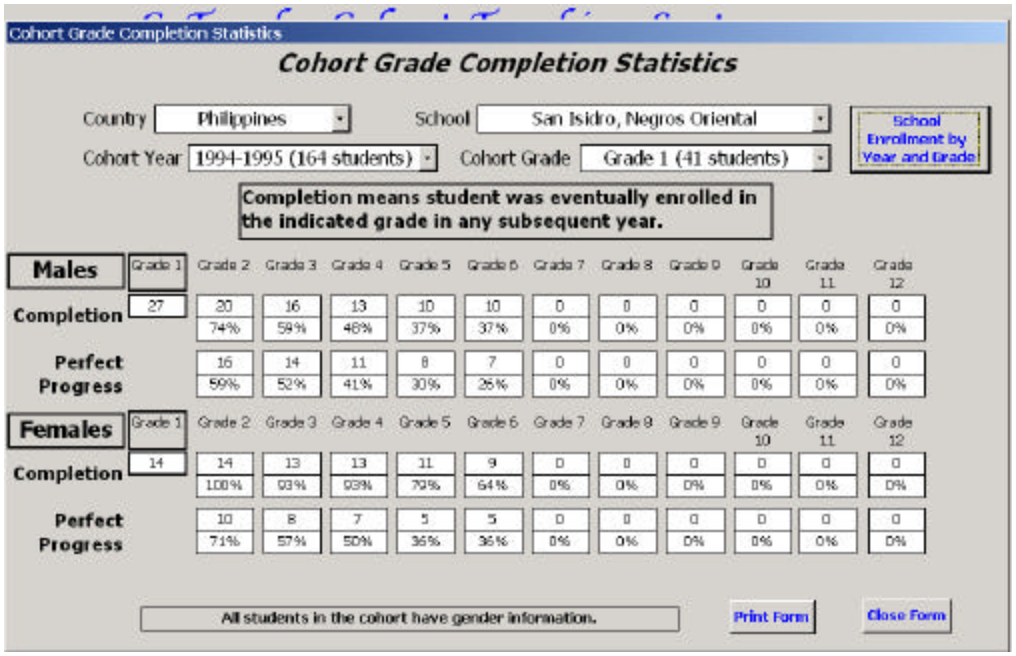
The next step is to select the Cohort Grade. This is performed using the pull-down list of grades available for the Cohort Year selected (Figure 10). This list also shows how many students are enrolled in each grade.

Figure 10 Cohort Grade Pull-down List



Once a Cohort Year has been selected, the Cohort Grade pull-down list shows the number of students in each grade for that year, as in Figure 11 for the 1994-1995 Grade 1 cohort. A message at the bottom of the screen will indicate whether there any students in the cohort without gender information, and if so, how many.

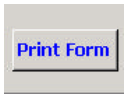
Figure 11 Cohort Grade Completion Screen



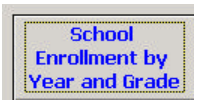
The table on the screen shows, for example, how many of the 27 male students in the 1994-1995 Grade 1 cohort were subsequently found enrolled at this school in each of the later grades. "Perfect Progress" is also shown—meaning how many of the gender cohort were enrolled in the later grades without having repeated a grade before first enrolling in that grade. Typically, we are interested in comparing, for example, the percentage of males ever reaching Grade 6 (here, 37%) with the percentage of females (64%).

But the system can also be used to find out grade-specific transition rates. In the case above, we see that 74% of male students enrolled in Grade 1 in 1994-1995 eventually were enrolled in Grade 2, versus 100% of the female students.

By changing the Cohort Grade to Grade 2, the screen will then show the Grade 2 to Grade 3 transition rate for that same year (89% for males, 100% for females).

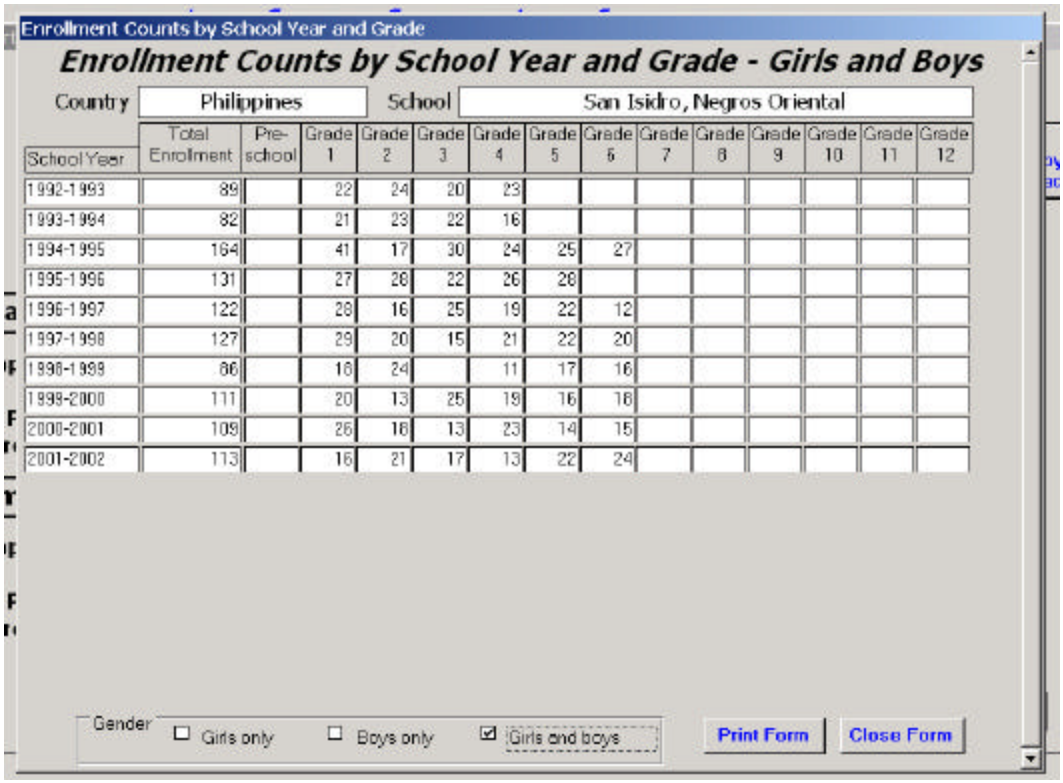
If a cohort is displayed on the screen, the user may print out the information by clicking on the 

button at the bottom right edge of the screen.

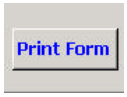
Clicking on this button 

will bring up the Enrollment Counts by School Year and Grade screen for the school selected. This screen (Figure 12) initially shows the total school enrollment (for both males and females).

Figure 12 Enrollment Counts by School Year and Grade



School Year	Total Enrollment	Pre-school	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
1992-1993	89		22	24	20	23								
1993-1994	82		21	23	22	16								
1994-1995	164		41	17	30	24	25	27						
1995-1996	131		27	28	22	26	28							
1996-1997	122		28	16	25	19	22	12						
1997-1998	127		29	20	15	21	22	20						
1998-1999	86		16	24		11	17	16						
1999-2000	111		20	13	25	19	16	18						
2000-2001	109		26	16	13	23	14	15						
2001-2002	113		16	21	17	13	22	24						

At the bottom of the screen, the user can choose to display enrollment totals for only females (Girls only), only males (Boys only) or both genders (Girls and boys) by clicking on the respective check boxes. This screen form can also be printed out by clicking on the 

button.

The Cohort Survivorship by Year Screen

This screen works very similarly to the Cohort Grade Completion screen, but determines the number of the selected cohort that were enrolled in *any* grade in subsequent years, as well as those members of the cohort that enrolled in that year through "perfect progress." Figure 13 shows, for the 1992-1993 cohort of 22 students enrolled in Grade 1 in 1992-1993, their retention or "survivorship" in subsequent years. In this example, 58% of males and 90% of females were enrolled in this school five years later (1997-1998). Only 25% of males, compared to 70% of females, had experienced "perfect progress" between the 1992-1993 and 1997-1998 school years.

Figure 13 Cohort Survivorship by Year