Epi Info™ 7 STUDENT GUIDE

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**The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.**

# ****Section 2 – Student Practice (Visual Dashboard)****

**Practice #1**

Now it’s time to see if you can create the following gadgets, filters, and variables. Feel free to work with other students in the class if you need help. Try your hand at generating the following results using the **FoodHistory** form in the **EColi.prj** filelocatedin the **Projects\EColi** folder of Epi Info 7. Step by Step instructions to complete this exercise are provided in Appendix A.

|  |
| --- |
| Task |
| 1. Clear all the filters on the dashboard and make sure that all 359 records have been loaded
 |
| 1. Show a breakdown of cases by those who were ill and those who were not ill. Stratify by Died.
	* Hint: Variable name is ILL
 |
| 1. Create a new filter to only work with cases that are older than 35 years. Use the global filter and not the filter at the gadget level.
	1. What is the distribution of cases based on gender?
	2. What is the distribution of cases based on hospitalizations?
	3. What is the Race distribution?
 |
| 1. Clear all the filers in the dashboard and make sure that all 359 records have been loaded. Create a new filter to only work with those interviewed after 05/11/2011.
	1. Find the minimum, maximum, and median values for fever temperature
	2. Find the minimum, maximum, and median values for fever temp, for both males and females
	3. Which of the Foods Eaten has the highest risk ratio? The lowest risk ratio?
	4. What is the p-value for the Foods Eaten with the highest risk ratio?
 |
| 1. Clear all the filters in the dashboard and make sure that all 359 records have been loaded. Create a new variable called Risk. Based on consumption of BeanSprouts and Skim Milk, identify these cases with the value of Yes. Otherwise, identify these cases with the value of No. What is the frequency of Risk based on Yes/no?
 |
| 1. What was the symptom mostly reported?
 |
| 1. Generate a line list for ill cases sorted by the interview date and include last name, first name, date of onset, age and gender.
 |
| 1. Create a Column chart to reflect number of Cases in each State by Gender
 |
| 1. Save your work as a canvas. Name the canvas MyEcoliReport
 |

# ****Section 3 – Student Practice (Maps)****

**Practice #2**

Now it’s time to see if you can create the following maps using the **EColi.prj** file located in the **Projects\EColi** folder of Epi Info 7. Feel free to work with other students in the class if you need help. Step by Step instructions to complete this exercise are provided in Appendix A.

|  |
| --- |
| Task |
| 1. Create a Case Cluster map. Show red dots as those cases where the patient is male and show blue dots where the patient is female.
2. Change the point colors for a given layer
3. Create a time lapse using the date of interview, then show only the cases that existed prior to 5/15/2011.
4. Save the map as an image on your desktop.
 |

# ****Section 4 – Student Practice (Form Designer)****

**Practice #3**

Create a project called **“ProjectDemo”.** Name your form“**Outbreak”**

Create the following fields:

|  |  |  |  |
| --- | --- | --- | --- |
| Prompt | Field Name | Field Type | Properties |
| Salmonella TyphoriumQuestionnaire | Salmonella | Label/Title | Font size=18, Bold |
| Date of Report | ReportDate | Date |  |
| Last name | LastName | Text |  |
| DOB | DateOfBirth | Date |  |
| Age | Age | Number | ### |
| White | White | Checkbox |  |
| Black | Black | Checkbox |  |
| Asian | Asian | Checkbox |  |
| Sex | Sex | Legal Values | MaleFemaleAmbiguous |
| Case Status | Status | Comment Legal | C-ConfirmedP-ProbableS-SuspectN-Not a Case |
| Patient Status | PStat | Option | DeceasedIllNot ill |
| Illness Onset Date | Onset | Date |  |

Now it’s time to see if you can implement the following types of fields. Feel free to work with other students in the class if you need help. Organize and place fields on the screen as appropriate. You can create additional pages if needed.

|  |  |  |  |
| --- | --- | --- | --- |
| Prompt | Field Name | Field Type | Properties |
| First name | FirstName | Text |  |
| Address | Address | Multiline |  |
| Phone Number | Phone | Phone Number |  |
| Was the patient Ill? | Ill | Yes/No |  |
| Was the patient hospitalized? | Hospitalized | Yes/No |  |
| Days Hospitalized | DaysHosp | Number | ### |
| Did you consume any of the following food items? | Consume | Label/Title |  |
| Chicken parts | ChickenParts | Comment Legal | 1-Yes2-No9-Don’t Know |
| Fresh tomatoes | FTomatoes | Yes/No |  |

**Practice #4:**

1. Align all of the fields as desired.
2. Add a group around Child Last and First Name, Child Current Address, DOB, Age, Sex and Ethnicity and name it **Demographics**
3. Display the tab order of your form, then start a new default tab order from the field on the top left of the form.
4. Add another page to your form containing a mirror field for Last Name.
5. Display your Data Dictionary.

Creating Templates

1. Open the HIV.prj file located in the Projects\HIV folder of Epi Info 7.
2. Right click on the form “Case” to save it as a template. Name the template “Case2” (note the new template on your Project Panel tree under the “Form” templates)
3. Right click on the HIV project (the top of the tree) and save the project as a template. Name the template HIV2. (note the new template on your Project Panel tree under the “Project” templates.)
4. Right click on the HIV2 template and select “Open Containing Folder.” Cut the HIV2 template and paste it onto your Desktop.
5. Create a new project using the “Get Template…” option and the HIV2 template on your Desktop.

**Section 5 – Student Practice (Adding Intelligence/Check codes)**

**Practice #5:**

Try your hand at creating the following check code in the Check Code editor. Feel free to work with other students in the class if you need help**.** Open the **FoodHistory\_NoCheckCode** form in the **EColi.prj** file located in the **Projects\EColi** folder of Epi Info 7. Step by Step instructions to complete this exercise are provided in Appendix A.

|  |
| --- |
| Task |
| If the user enters a value in the ‘date of interview’ field that exceeds the computer’s current date, display a warning message to the user and then erase the erroneous value that they typed in. Then place cursor back into the ‘date of interview’ field. *Hint: You need to use the SYSTEMDATE variable to get the current date and time* |
| If the user answers “No” to the question “Was the patient ill enough to require a doctor visit?” disable the field Doctor’s Visit Date and remove any data entered into the field. |
| Calculate the person’s age in months instead of years and place the result into the Age field.*Hint: Remember that YEARS and MONTHS are functions and ASSIGN is a command.* |

# ****Section 6 – Student Practice (Data entry)****

**Practice #6**

Go ahead and enter the following four records to get an idea of how data entry works.

Open the form **FoodHistory\_NoCheckCode** in the **EColi.prj** file located in the **Projects\EColi**  folder of Epi Info 7.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field: | Record #1 (value) | Record #2 (value) | Record #3 (value) | Record #4 (value) |
| Case ID | 3 | 4 | 5 | **6** |
| Date of Interview | 04-13-2011 | 05-01-2011 | 05-02-2011 | 05-01-2011 |
| First Name | John | John | Robert | Roberta |
| Last Name | Smith | Selby | Johnson | Williams |
| Sex | Male | Male | Male | Female |
| DOB | 09-22-1974 | 12-07-2001 | 12-04-1936 | 12-04-1966 |
| Ethnicity Group | Hispanic | Not-Hispanic | Missing | Missing |
| Race | White | White | Black | Native Hawaiian |
| Street Address | 900 Peachtree Drive, Atlanta, GA | 2500 Century Plaza, Atlanta, GA 30347 | 878 Peachtree Drive, Atlanta, GA | 678 Peachtree Drive, Atlanta, GA |
| Occupation | Cook | Waiter | Dish Washer | Missing |
| Work Phone | 555-555-5555 | 404-444-5555 | 555-333-4444 | 555-123-4444 |
| Was the patient ill? | Yes | Yes | Yes | Yes |
| Symptom onset date | 04-01-2011 | 04-02-2011 | 04-02-2011 | 04-04-2011 |
| Symptoms | Headache, Fever, Vomiting, Bloody diarrhea, Non-bloody diarrhea, Poor feeding, Chills, Irritable, Nausea, Abdominal cramps | Headache, Fever, Bloody diarrhea, Chills, Irritable, Nausea, Abdominal cramps  | Headache, Fever, Bloody diarrhea, Chills, Irritable, Nausea, Abdominal cramps | Irritable, Nausea, Abdominal cramps |
| Fever temp | 104.5 | 100.4 | 101.2 | 100.2 |
| Loose stools per day | 4-6 | 3-4 | 1-3 | 4-5 |

# ****Appendix A – Step By Step Instructions for Exercises****

**Section 1 – Visual Dashboard**

|  |
| --- |
| Practice #1 |
| 1. To clear any filters in place, click on CLEAR ALL in the Data Filter gadget
 |
| 1. Right click on the canvas

Select Add Analysis gadget optionSelect Frequency Select ILL variable from the drop down listIll=276 Not Ill=83Click on Advanced OptionsSelect Died from the Stratify by: list of variables |
| 1. Using the Data Filter gadget, select the variable AGE from the Field Name list.

Select the greater than operator and enter 35 for the valueClick on Add Filter button. This would filter the database to 169 records1. Distribution of cases based on gender – TABLES SEX ILL

 (ILL M=66,F=66 / NOT ILL M=21,F=16)1. Distribution of Hospitalizations – FREQ HOSPITAL (61 cases)
2. Distribution of Races – COMBINED FREQ by DemographicInformation group
 |
| 1. To clear any filters currently active, click on CLEAR ALL in the Data Filter gadget

Select the variable Date of InterviewSelect the greater than operator. Enter the value 5/11/2011To find the Min, Max and Median, use the MEANS gadget. Right click on the canvasSelect Add Analysis gadget optionSelect FeverTemp from the list of variables for the Means of: parameterClick Run button1. Min=98.90 Max=106.7 Median=102.6

To Cross Tabulate by Gender, click on gear  iconClick on the Advanced Options arrowSelect Sex from Cross-Tabulate by: drop down list

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| FeverTemp \* Sex | Mean | Min | Median | Max | Mode |
| F-Female | 102.1662 | 98.9 | 102 | 105.7 | 100.9 |
| M-Male | 102.7377 | 99.2 | 102.8 | 106.7 | 104.1 |

 |
| Right click on the canvasSelect Add Analysis gadget optionSelect MxN/2x2 Table gadgetSelect FoodsEaten field from Exposure drop down list (Note: Group fields are listed towards the bottom of the list)Select Ill field from Outcome: drop down list1. Highest risk ratio=Beansprouts 6.59 Lowest risk ratio=Grapes .7897
2. p value for highest risk ratio=0.000000
 |
| 1. To clear any filters in place, click on CLEAR ALL in the Data Filter gadget

Select the Defined variables gadgetClick on New VariableSelect With Conditional AssignmentEnter Assign Field=RiskEnter Assign Field Type = Yes/NoClick on Create/Edit Condition buttonSelect Beansprouts from drop down listSelect Value = YesClick on Add Condition buttonSelect SkimMilk from drop down listSelect Value = YesClick on Add Condition buttonSelect Add Condition with AND optionClick OkSelect Yes in the Assigned Value sectionClick on Use Else check boxSelect No for Else Value sectionClick OkGenerate a frequency for the Risk field. Distribution of Risk (which corresponds to both foods eaten is (Yes=187, No=172)). |
| 1. Click on the Defined Variables gadget

Click on New VariableSelect the option Create Variable GroupCall the new group variable SymptomsGroupPress and hold down the Left Ctrl key and select the variables: Abdominal Cramps, Bloody Diarrhea, Chills, Fever, Headache,Irritable, Nausea, Non Bloody Diarrhea, Vomiting Click OkRight click on the CanvasSelect Add Analysis gadget optionSelect Combined FrequencySelect SymptomsGroup from drop down listSymptom mostly reported= Fever 86.63% |
| 1. Right click on the canvas

Select Add Analysis gadget optionSelect Line ListPress and hold down the Left Ctrl key and select the variables: LASTNAME, FIRSTNAME, ONSETDATE, AGE, SEXSelect Date of Interview from Sort Variables drop down listClick Ok |
| 1. Right click on the canvas

Select Add Analysis gadget optionSelect ChartsSelect ColumnSelect State for the Main variable:Click on the Advanced options arrowSelect Sex for the Stratify by: list of fieldsClick on the Display options arrowSelect Stacked from the Composition: parameterSelect Show Legend from the Legend sectionClick on Run button |
| 1. Right click on the canvas

Select Save Canvas optionEnter MyEcoliReport for File NameClick Ok |

**Section 3 – Epi Map**

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| Practice #2 |
| 1. Open Epi Map
2. Click on Add Data LayerSelect Case Cluster
3. Select the EColi.PRJ file located in the Projects\Ecoli directory of Epi Info 7
4. Select FoodHistory form
5. Click Ok
6. Click on Data Filter icon  in the Map Layer gadget located in the bottom section of the screen.
7. Select Sex from Field Name list
8. Select equal to for Operator
9. Select M-Male for Value
10. Click Add Filter button
11. Close the Data Filter
12. Select Latitude for Latitude Field
13. Select Longitude for Longitude Field
14. Repeat the same process for Female
15. Click on Add Data layer
16. Select Case Cluster
17. Select the EColi.PRJ file located in the Projects\EColi directory of Epi Info 7
18. Select FoodHistory form
19. Click Ok
20. Click on Data Filter icon  in the Map Layer gadget located in the bottom section of the screen.
21. Select Sex from Field Name list
22. Select equal to for Operator
23. Select F-Female for Value
24. Click Add Filter button
25. Close the Data Filter
26. Click on the Point Color icon and select a color other than red
27. Select Latitude for Latitude Field
28. Select Longitude for Longitude Field

The map will show red dots as those cases where the patient is male and show blue dots where the patient is female.  |
| 1. Click on the Map Layer gadget located in the bottom section of the screen

Modify the colors for each of the layers as desiredChange the point colors for a given layer |
| 1. Click on Create Time Lapse gadget located in the top section of the screen
2. Select Date of Interview from drop down list
3. Click Ok
4. Click on Play button
 |
| 1. Click on the picture frame icon located on the top menu.
2. Specify a file name. Call it AsthmaMap1
3. Click Save. A “Map image has been saved” message will be displayed.
 |

**Optional:** You willgeneratea map which contains three layers represented as a case cluster, choropleth, and point of interest map using an Asthma Initiative Community Health Assessment project. You want to determine whether you have more cases of asthma in certain income brackets. First, we will create a choropleth map of the region using income data and then map cases of asthma from the survey onto the map.

* 1. Open Epi Map
	2. Click on **Add Layer**
	3. Select **Choropleth**
	4. Select **With Shape File Boundaries** option
	5. Select **MS Access 2002-2003** as Database Type
	6. Select the **albany\_demogz.mdb** file located in the **Epi Info 7\Resources\Training Projects\CommunityHealthAssessment** folder for the Data Source.
	7. Select the **INCOME** table.
	8. Click **Ok**.
	9. Click on the **Browse Shape file** button.
	10. Select the **ALBZCTA\_region.shp** file from the **Epi Info 7\Resources\Training Projects\CommunityHealthAssessment** folder.
	11. Click **Open**
	12. Select **6** for the **Classes** setting.
	13. Select **zip** from the **Shape Key** list of fields.
	14. Select **ZIP** from the **Data Key** list of fields.
	15. Select **MEDIANFAMILY** from the **Value Field** list of fields.

The choropleth map appears. Notice that the legend contains the color codes representing the Median Family income per zip code with the darkest color representing the highest income range and lightest color representing the lowest.

We will now add another layer to represent the asthma cases in our database. Remember that the information corresponds to the address of residence of the cases. In order to do so, please complete the following steps.

1. Click on **Add Layer**
2. Select **Case Cluster**
3. Select **Epi Info 7 project** for Data Format
4. Select the **CommunityHealthAssessment.prj** file located in the **Epi Info 7\Resources\Training Projects\CommunityHealthAssessment** folder.
5. Click **Open**
6. Select the **PreInterventionSurvey** form.
7. Click **Ok**
8. Type **Cases** in the **Description** box
9. Select **Latitude** as the **Latitude** field.
10. Select **Longitude** as the **Longitude** field.

A map representing the locations of the children interviewed during the Community Health Assessment is generated.

OPTIONAL: Add Hospitals coordinates to see if there is a lack of hospitals in the areas were more cases have been occurring.

1. Click on **Add Layer**
2. Select **Points of Interest**
3. Select **MS Access 2002-2003** as Database Type
4. Select the **CommunityHealthAssessment.mdb** file located in the **Epi Info 7\Resources\Training Projects\CommunityHealthAssessment** folder.
5. Click **Ok**
6. Select the **HospitalPoints** table
7. Click **Ok**.
8. Type **Hospitals** in the **Description** box
9. Select **Diamond** for **Style**
10. Click on the color point color square and select any color other than red.
11. Select **YCoordinates** as the **Latitude** field.
12. Select **XCoordinates** as the **Longitude** field.

Now we can see the distribution of hospitals in the area and determine if there is a lack of services provided in the most affected areas.

**Section 5 – Check Code**

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| Practice #5 |
| 1. Open Form Designer.
2. Select the project Ecoli.PRJ located in the \Projects folder.
3. Select the form *FoodHIstory\_NoCheckCode* by double clicking on the form name.
4. Click on the Check Code button  located in the top of the screen.
5. From the 1. Choose Field Block for Action section of the workspace, expand the node for Page 1
6. Expand the node for the field Date of Interview
7. Double click on the AFTER event. This should place a block in the Program Editor for this field.
8. Click on the IF command located in the 2. Add Command to field Block section of the workspace.
9. Select from the drop down list of Available Variables the field Date of Interview
10. Click on the greater than operator (>)
11. Click on the function button.
12. Select the System Functions option.
13. Select SYSTEMDATE
14. Click on the command button  located in the THEN section of the command dialog box.
15. Select DIALOG
16. Type ALERT in the Title section
17. Type “Invalid date entered. Please verify and enter again” in the Prompt section of the command dialog box.
18. Click Ok
19. Click on the command button located in the THEN section of the command dialog box.
20. Select CLEAR
21. Select from the drop down list of Available Variables the field Date of Interview
22. Click Ok
23. Click on the command button located in the THEN section of the command dialog box.
24. Select GOTO
25. Select from the drop down list of Available Variables the field Date of Interview
26. Click Ok
 |
| 1. Complete steps by through 5 from previous task
2. Expand the node for the field DoctorVisit
3. Double click on the AFTER event. This should place a block in the Program Editor for this field.
4. Click on the IF command located in the 2. Add Command to field Block section of the workspace.
5. Select from the drop down list of Available Variables the field DoctorVisit
6. Click on the equal operator (=)
7. Click on “No” button.
8. Click on the command button  located in the THEN section of the command dialog box.
9. Select DISABLE
10. Select from the drop down list of Available Variables the field DoctorVisitDate
11. Click Ok
12. Click on the command button  located in the THEN section of the command dialog box.
13. Select CLEAR
14. Select from the drop down list of Available Variables the field DoctorVisitDate
15. Click Ok
16. Click on the command button  located in the ELSE section of the command dialog box.
17. Select ENABLE
18. Select from the drop down list of Available Variables the field DoctorVisitDate
19. Click Ok
 |
| 1. Right click on the field DOB
2. Select the Field Check code option.
3. If there is check code already for the field, it will be displayed to the user in the Program Editor.
4. Replace the function YEARS with MONTHS. When completed, code should look like this:

ASSIGN Age = MONTHS( DOB, DateofInterview )1. Click on Save
 |