Tutorial 10

Lecture revision

What is WHERE statement?

What operators can we use in WHERE statement?

What wildcards are available for LIKE operator?

Programming exercise I – DataControls

The task is to create an application what will allow users to iterate through rows of a table.

1. Create new Windows application called DataControls
2. Add new data source based on the db provided
3. Drag-drop tbTeacher table in DataGridView and check connectivity
4. Add ListBox control. Set DataSource property to tbTeacherBindingSource, DisplayMember to lastName
5. Drag-drop tbTeacher table in Details view to the form
6. Delete Textbox for Id
7. Change display format for DoB control
8. Delete control for gradeLevel. Add new NumericUpDown and set up data bindings. Don’t forget to set up proper minimum and maximum values.
9. Add four buttons (btnNext, btnPrevious, btnFirst, btnLast) and create handlers for click events for them
10. Add subroutine to enable and disable corresponding buttons and call it from button handlers and form load event handler

private void EnableDisableButtons()

{

//enable and disble navigation buttons

if (tbTeacherBindingSource.Position == 0)

{

btnFirst.Enabled = false;

btnPrevious.Enabled = false;

}

else

{

btnFirst.Enabled = true;

btnPrevious.Enabled = true;

}

if (tbTeacherBindingSource.Position == tbTeacherBindingSource.Count - 1)

{

btnLast.Enabled = false;

btnNext.Enabled = false;

}

else

{

btnLast.Enabled = true;

btnNext.Enabled = true;

}

}

1. Delete Textbox for country. Add dropdown list and set up databinding:

DataSource – tbCountry

DisplayMember – Name

ValueMember – Id

DataBindings-SelectedValue - countryId

1. Run program to see the result

Programming exercise II – CRUD

Enhance previous program to allow edit, insert and delete operations

1. Add new button btnSave and add code to save changes to db
2. Add 7 new controls (tbxNewFirstName, tbxNewLastName, dtpNewDob, tbxNewPhone, nudNewGrade, chbNewIsActive, cbxNewCountry). Make sure to have no data bindings, use separate set of controls. Use new data source for new combobox
3. Add a button (btnAdd) and add the following code to it

//get dataset row with selected country

var selectedCountry = ((DataRowView) cbxNewCountry.SelectedItem).Row;

//add to in-memory dataset

dbDataSet.tbTeacher.AddtbTeacherRow(tbxNewFirstName.Text,

tbxNewLastName.Text,

dtpNewDoB.Value,

tbxNewPhone.Text,

(int) nudNewGrade.Value,

chbNewIsActive.Checked,

(dbDataSet.tbCountryRow) selectedCountry);

1. Run the program to see the result
2. Add new button (btnDelete) and add the following code to click event handler for it:

if (tbTeacherBindingSource.Count > 0)

tbTeacherBindingSource.RemoveCurrent();

1. Run the program and see the result
2. Override Form Closing event and add code to handle unsaved changes:

Validate();

tbTeacherBindingSource.EndEdit();

if (dbDataSet.HasChanges())

{

if (MessageBox.Show("Do you want to save changes?",

"Save",

MessageBoxButtons.YesNo) == DialogResult.Yes)

SaveData();

}

1. Run the program and see the result

Programming exercise III – Filter

Enhance previous program to allow incremental search for records

1. Add text box (tbxFearch) and create handler for its TextChanged event
2. Add the following code to the handler

tbTeacherBindingSource.Filter = $" lastName LIKE '{tbxFilter.Text}%'";

1. Run the program and see the effect

Home work

IMPORTANT!!! Redo the program again and ensure that you understand all the issues since you will have nearly the same task at your In-class test 2.

Enhance the program:

1. Enhance search: allow user to select the column to search.
2. Further enhance search: allow searching by the end of the column selected (e.g. entering “di” should filter to Niro***di***) and by any location (e.g. entering “i” should filter down to St***i***vens, N***i***rodi, Sm***i***th)