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<center>Zoom Settings</center>

## 1. Change Request*:*

The user can select "View -> Zoom" when comparing two files and zoom in or out and set the zoom to normal. Give the user some popular predefined zoom settings, such as 75%, 125% and 150%.

## 2. Concept Location:

**Table 1. The list of all the classes visited during concept location.**

| # | File name | Tool used | Located? | Comments |
|---|-----------|-----------|----------|----------|
| 1 | Src\HexMergeView.h | In VS, I used the "Find in Files" tool (Ctrl-F) and searched for: <br><br>"zoom" | No <br><br>**UNCHANGED** | This header file contains a method header called HexZoomText that would seem to deal with zooming but according to the description of this class it handles bytewise merging of files represented as hexdumps so it is not what we are looking for. |
| 2 | Src\MergeEditView.h | Same as above. <br><br>This led me to a method header: <br><br>"void zoomText(short amount);" | No <br><br>**CHANGED** | This looks to be the header file of a class that handles zooming in on text, but it does not actually contain any of the zoom logic itself. <br><br>It is possible that this class will need to be changed to include new method headers and globals used in the change request. <br><br>This class ultimately needed to be added as well since it defines the functions available in CMergeEditView.cpp |
| 3 | Src\CMergeEditView.cpp | Same as above. This led me to a method call inside this file called: "zoomText(0);". | Yes <br><br>**CHANGED** | |

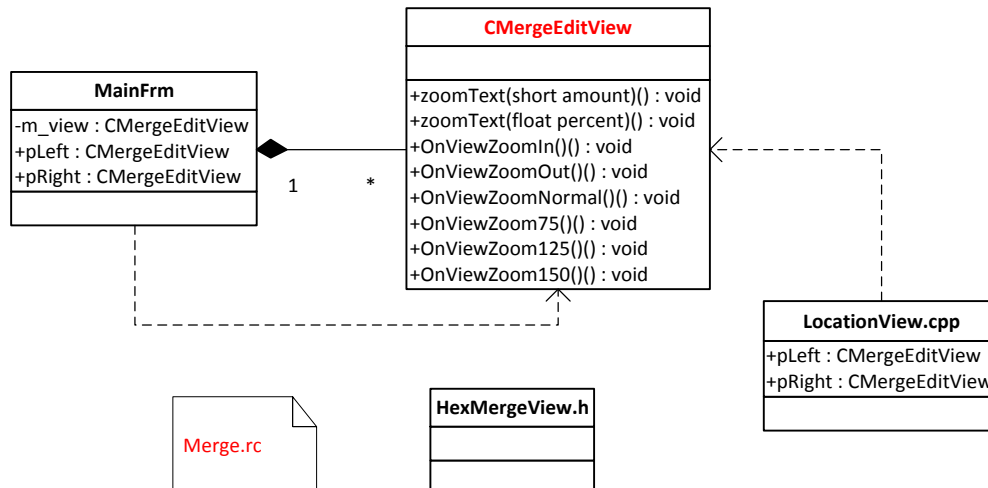| # | Class name | Tool used | Impacted? | Comments |
|---|---|---|---|---|
| | | I then used the "go to definition" feature in VS to jump to the method declaration for zoomText. | | |

## 3. Impact Analysis:

**Table 2. The list of all the classes visited during impact analysis.**

| # | Class name | Tool used | Impacted? | Comments |
|---|---|---|---|---|
| 1 | Src\CMergeEditView.cpp | "Find in files" | Yes | Concept Location |
| 2 | Src\Merge.rc | In VS, I used the "Find in Files" tool (Ctrl-F) and searched for:<br><br>"zoom" | Yes | This class needs to be modified in order for us to add our new zoom options into the option menu of UI. |
| 3 | Src\MainFrm.cpp | "Find in files" for the text: MergeEditView.<br><br>Then used the Quick Find option to determine whether or not this class made a call to the "zoomText(…)" method. | No | This class contains an instance of the MergeEditView but it does not use the method zoomText or does anything related to zooming. It should not be affected. |
| 4 | Src\LocationView.cpp | "Find in files" for MergeEditView.<br><br>Then used the Quick Find option to determine whether or not this class made a call to the zoomText method. | No | This class contains an instance of the MergeEditView but it does not use the method zoomText or does anything related to zooming. It should not be affected. |
| 4 | Src\MainFrm.h | "Find in files" for the text: MergeEditView. | No | This header file contains an array of the CMergeEditView but does not actually manipulate them at all because this is simply a header file. |

## 4. Learning process:

In the following Uml diagram if a class contained both a .cpp and a corresponding .h file, they were combined into a single object and their methods and attributes combined. For example MergeEditView.h and CMergeEditView.cpp were merged into CMergeEditView.

```
                          ┌─────────────────────────────┐
                          │      CMergeEditView         │
                          ├─────────────────────────────┤
   ┌──────────────────┐   │ +zoomText(short amount)() : void
   │     MainFrm       │   │ +zoomText(float percent)() : void
   ├──────────────────┤   │ +OnViewZoomIn()() : void
   │ -m_view : CMergeEditView │ +OnViewZoomOut()() : void
   │ +pLeft : CMergeEditView  │ +OnViewZoomNormal()() : void
   │ +pRight : CMergeEditView │ +OnViewZoom75()() : void
   │                  │   │ +OnViewZoom125()() : void
   └──────────────────┘   │ +OnViewZoom150()() : void
          1        *       └─────────────────────────────┘

                          ┌─────────────────────────────┐
                          │      LocationView.cpp       │
                          ├─────────────────────────────┤
                          │ +pLeft : CMergeEditView     │
                          │ +pRight : CMergeEditView    │
                          └─────────────────────────────┘

   ┌──────────┐     ┌──────────────────┐
   │ Merge.rc │     │  HexMergeView.h  │
   └──────────┘     └──────────────────┘
```

## 5. Description of the implementation:

### <Resource.h>

Need to add IDs to be used for the new zoom command messages.

```
#define ID_VIEW_EXPAND                  33176
#define ID_VIEW_COLLAPSE                33177
#define ID_VIEW_ZOOM75                     33178
#define ID_VIEW_ZOOM125                    33179
#define ID_VIEW_ZOOM150                    33180
```

### <CMergeEditView.cpp>

There are a few changes that need to be made in this class as it is the one that contains the zoom logic.

First the zoom command message id needs to be mapped to the OnViewZoom* methods that we added to this class.

```
ON_COMMAND(ID_VIEW_ZOOMNORMAL, OnViewZoomNormal)
ON_COMMAND(ID_VIEW_ZOOM75, OnViewZoom75)
ON_COMMAND(ID_VIEW_ZOOM125, OnViewZoom125)
ON_COMMAND(ID_VIEW_ZOOM150, OnViewZoom150)
```

To keep things relatively clean and to have the minimum amount of code clones as possible I would make a second ZoomText(…) method in this class that uses floating point numbers to modify the font size as opposed to integers. It would mostly be a copy of the ZoomText(short amount) function except for the lines outlined below. Yes this would contain

some cloned lines of code however, it would greatly reduce the overall amount of code clones that I would have otherwise introduced.

```
Void CMergeEditView::ZoomText(short amount float percent)
{
        …
        nPointSize += percent;
        nPointSize *= percent;
        …
}
```

This new function that modifies the size according to percentage would then be called like so, by the following new methods.

```
Void CMergeEditView::OnViewZoom75()
{
        ZoomText(0.75);
}

Void CMergeEditView::OnViewZoom125()
{
        ZoomText(1.25);
}

Void CMergeEditView::OnViewZoom150()
{
        ZoomText(1.5);
}
```

We also needed to add the new function header for the new zoomText(float percent) method. **<MergeEditView.h>**

```
void ZoomText(short amount);
void ZoomText(float percent);
```

Once we have the new methods and also the new command ids we would need to add those new commands to the UI. To do this we need to edit Merge.rc.

**<Merge.rc>**

```
MENUITEM "&Normal\tCtrl+*",            ID_VIEW_ZOOMNORMAL //#. Zoom to normal
MENUITEM "Zoom &75%",                           ID_VIEW_ZOOM75
MENUITEM "Zoom &125%",                          ID_VIEW_ZOOM125
MENUITEM "Zoom &150%",                          ID_VIEW_ZOOM150
```

## 6. Sources:

No sources were referenced.