Video Player Documentation

Files: annotationPage.js

(Note: the line numbers may not be exactly accurate. When searching for a section of code it's probably best to Ctrl+f).

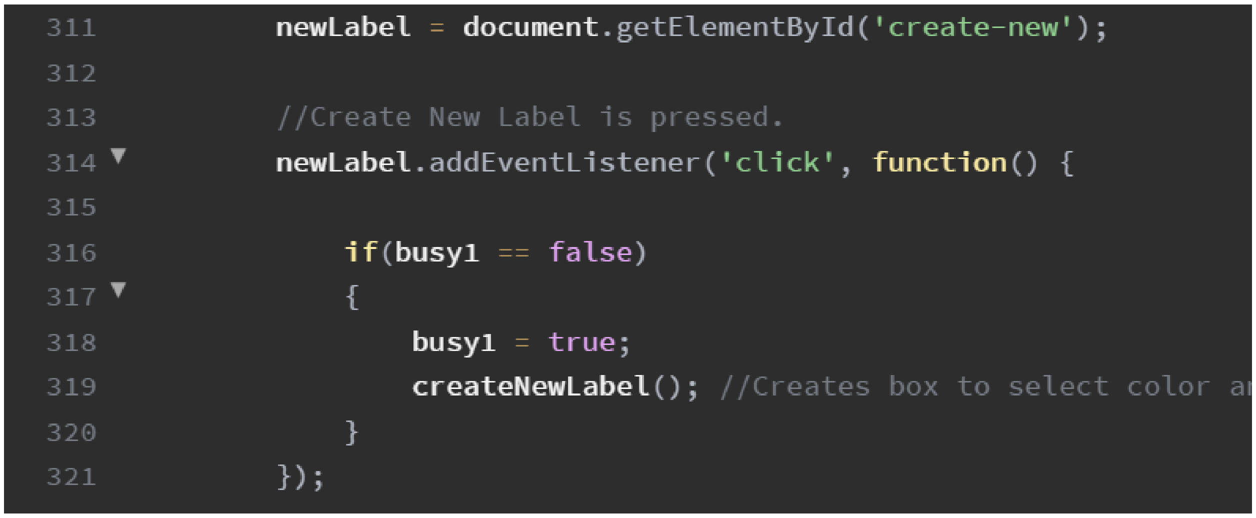
This file included all of the front-end functionality for the player. This includes the video player and controls, all even listeners for the creation of labels and annotations.

Video player functionality: Lines 141 – 310

Create New Annotation: Lines 311 – 321 & 449 – 498

Within lines 311 – 321 exist the event listener for the CREATE NEW LABEL BUTTON once it is pressed theses lines hear it and call the function **createNewLabel()** which is located on 449.

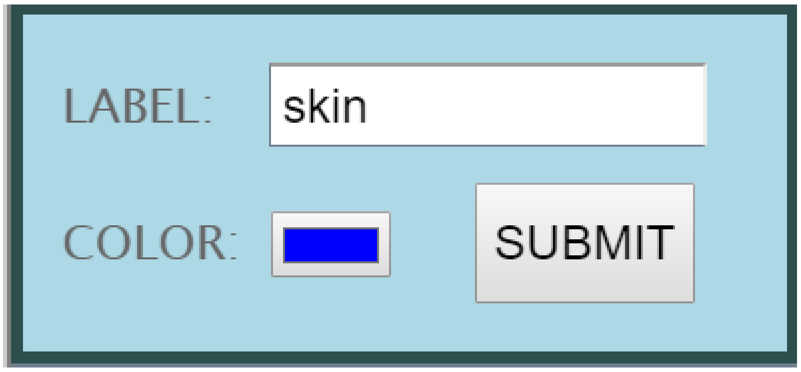
Once CREATE NEW LABEL pressed code below executes

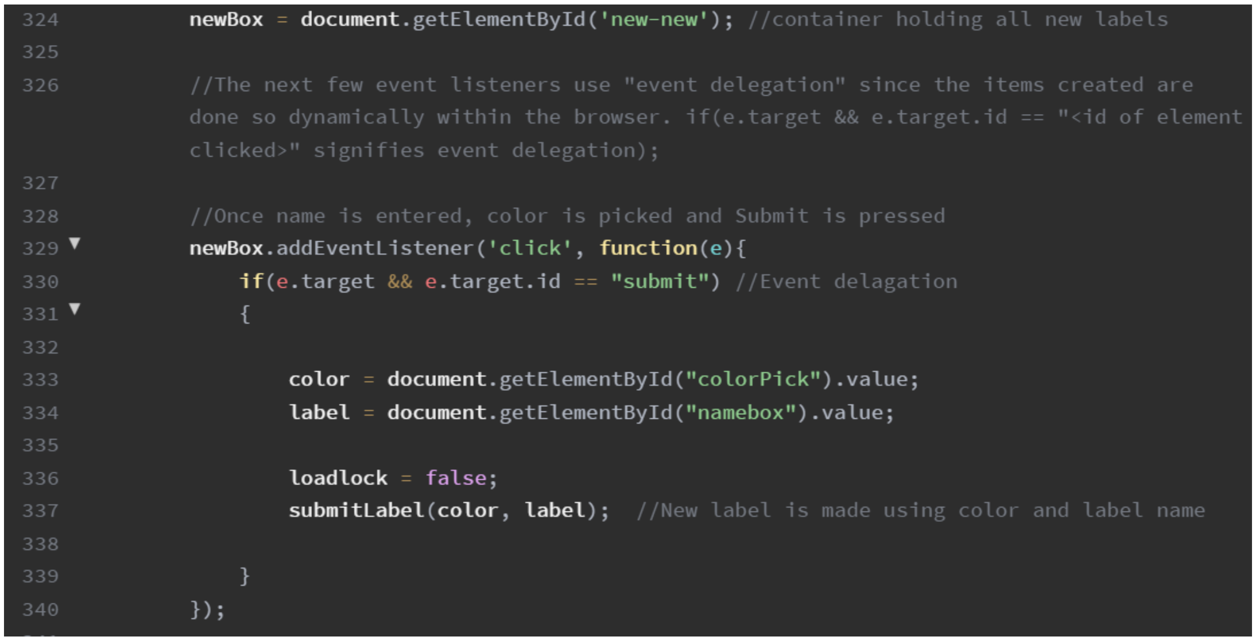


```
311         newLabel = document.getElementById('create-new');
312
313         //Create New Label is pressed.
314 ▼       newLabel.addEventListener('click', function() {
315
316             if(busy1 == false)
317 ▼           {
318                 busy1 = true;
319                 createNewLabel(); //Creates box to select color a
320             }
321         });
```

Submit Button Pressed: Lines 324 – 340 & 502 - 561

Once label name and color selected press SUBMIT to execute creation of the new label. The event listener on 329 will get label name and color, them pass them to the function **submitLabel()** on line 502.

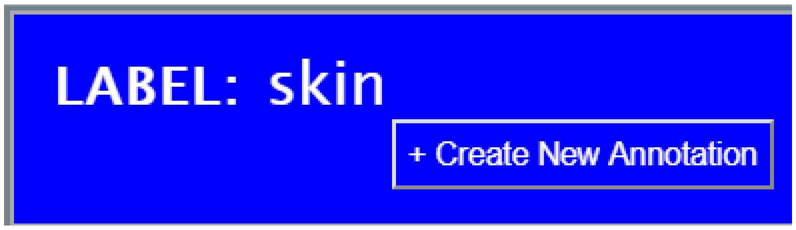


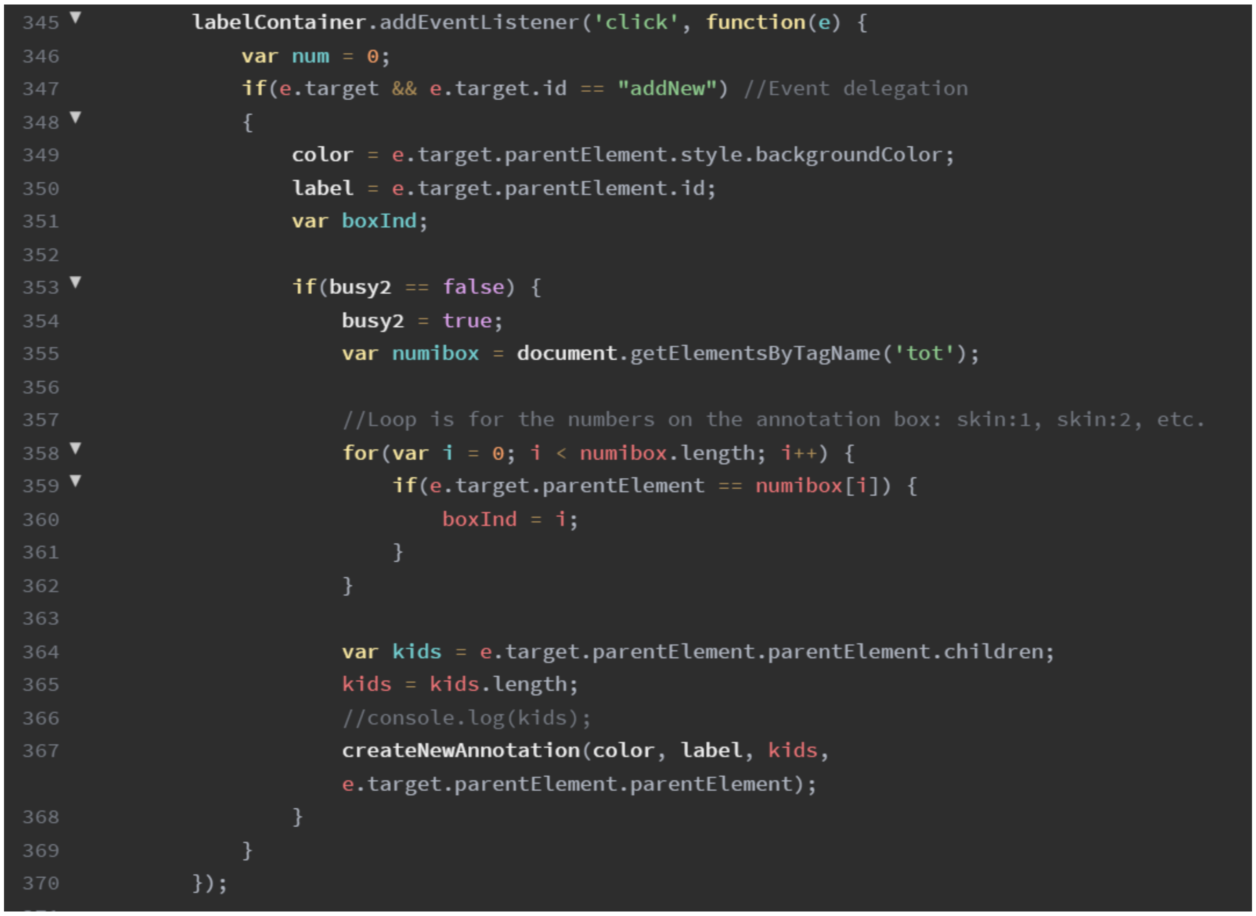


```
324         newBox = document.getElementById('new-new'); //container holding all new labels
325
326         //The next few event listeners use "event delegation" since the items created are done so dynamically within the browser. if(e.target && e.target.id == "<id of element clicked>" signifies event delegation);
327
328         //Once name is entered, color is picked and Submit is pressed
329         newBox.addEventListener('click', function(e){
330             if(e.target && e.target.id == "submit") //Event delagation
331             {
332
333                 color = document.getElementById("colorPick").value;
334                 label = document.getElementById("namebox").value;
335
336                 loadlock = false;
337                 submitLabel(color, label);  //New label is made using color and label name
338
339             }
340         });
```

Create new annotation: Lines 345 – 370 & 564 – 676

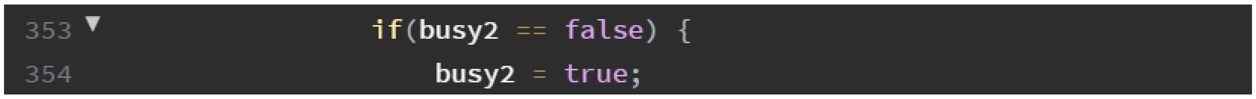
This event listener waits for the CREATE NEW ANNOTATION button to be pressed, which exists on the newly created label. Once the button is pressed the code below is executed. The event listener will call the **createNewAnnotation(color, label, kids, Grandparent Element)** on line 564, which will create the box which allows you to create annotation data.





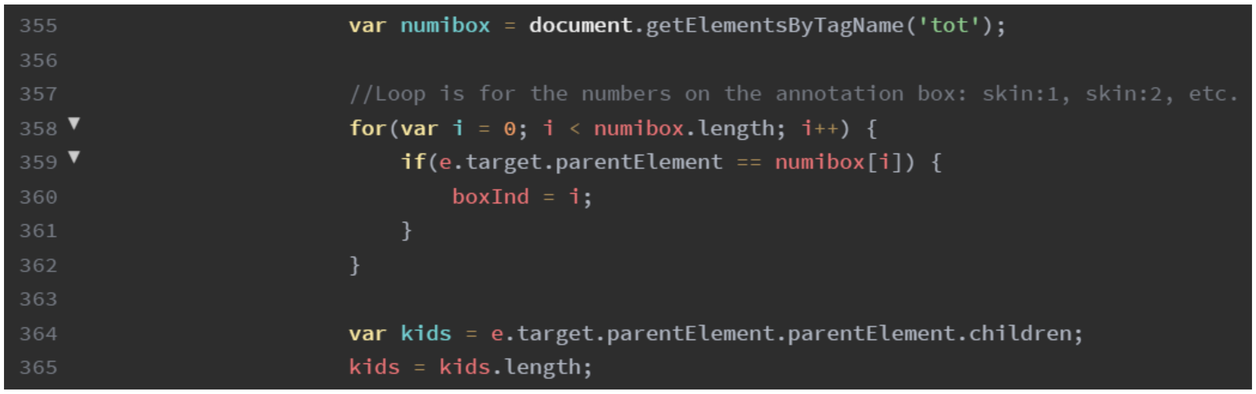
```
345         labelContainer.addEventListener('click', function(e) {
346             var num = 0;
347             if(e.target && e.target.id == "addNew") //Event delegation
348             {
349                 color = e.target.parentElement.style.backgroundColor;
350                 label = e.target.parentElement.id;
351                 var boxInd;
352 
353                 if(busy2 == false) {
354                     busy2 = true;
355                     var numibox = document.getElementsByTagName('tot');
356 
357                     //Loop is for the numbers on the annotation box: skin:1, skin:2, etc.
358                     for(var i = 0; i < numibox.length; i++) {
359                         if(e.target.parentElement == numibox[i]) {
360                             boxInd = i;
361                         }
362                     }
363 
364                     var kids = e.target.parentElement.parentElement.children;
365                     kids = kids.length;
366                     //console.log(kids);
367                     createNewAnnotation(color, label, kids,
                        e.target.parentElement.parentElement);
368                 }
369             }
370         });
```

The if statement on 353 exists in this and other functions so that the user must create one annotation before they move onto the next



```
353                 if(busy2 == false) {
354                     busy2 = true;
```

The code from 355 – 365 exists to determine the indices of the annotation that is created from the push of the CREATE NEW ANNOTATION button.



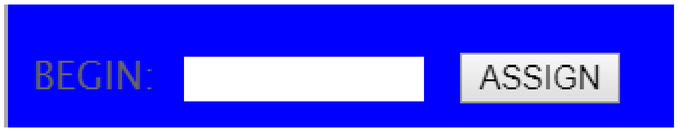
```
355                     var numibox = document.getElementsByTagName('tot');
356
357                     //Loop is for the numbers on the annotation box: skin:1, skin:2, etc.
358 ▼                   for(var i = 0; i < numibox.length; i++) {
359 ▼                       if(e.target.parentElement == numibox[i]) {
360                             boxInd = i;
361                         }
362                     }
363
364                     var kids = e.target.parentElement.parentElement.children;
365                     kids = kids.length;
```

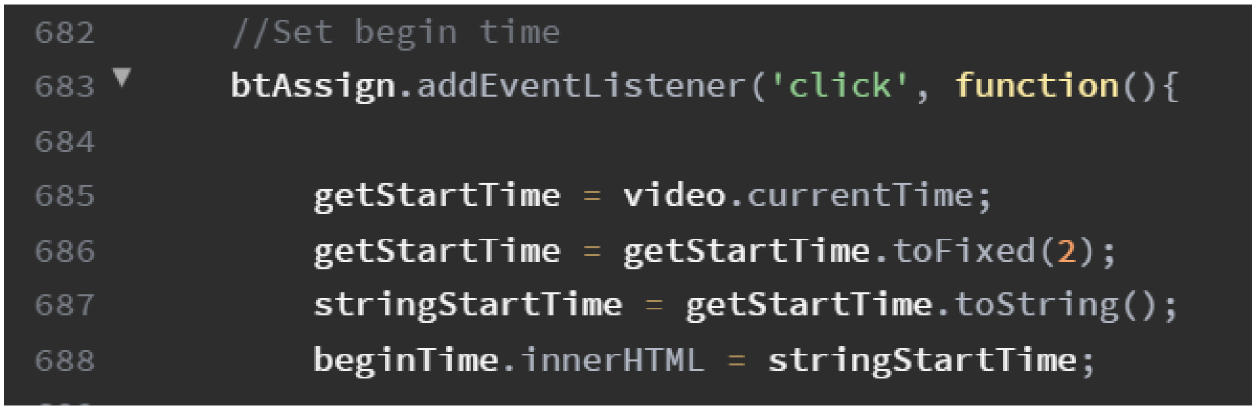
Most of the **createNewAnnotation()** function sets up the new annotation box, it also creates the box under the correct label. It does so using the GRAND PARENT ELEMENT passed to the function (the 4th parameter). On line 673 the function **drawEditAnnotation(color, label)** is called. This is the function that allows the user to create the annotation rectangle as well as set begin and end times.

The **drawEditAnnotation()** function is very important as this it contains the main functionality of the application.

drawEditAnnotation(): Lines 679 – 717

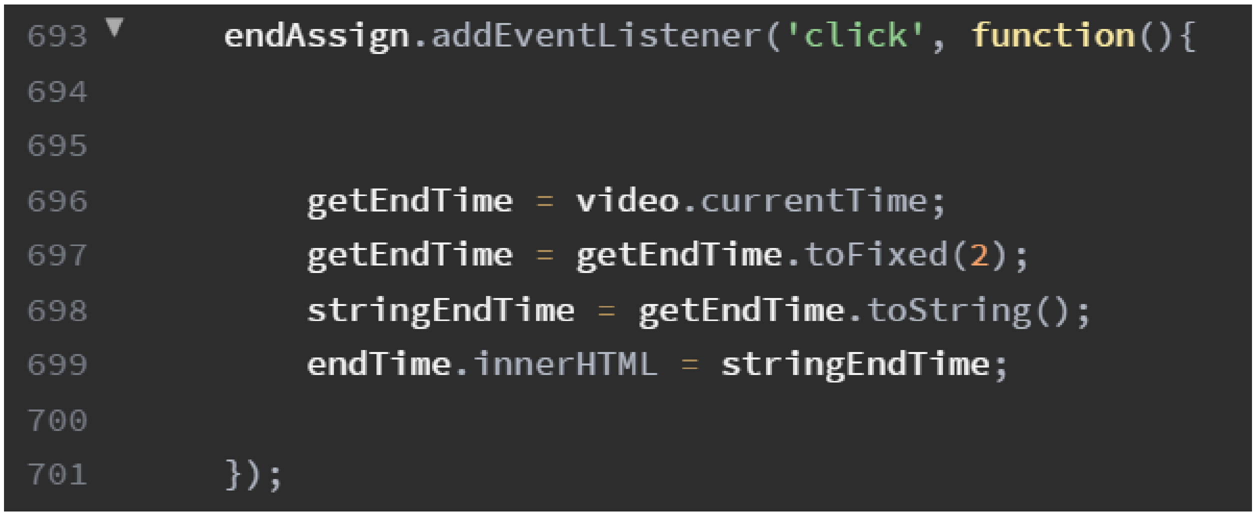
Lines 682 – 688: Event listener which allows user to set BEGIN time





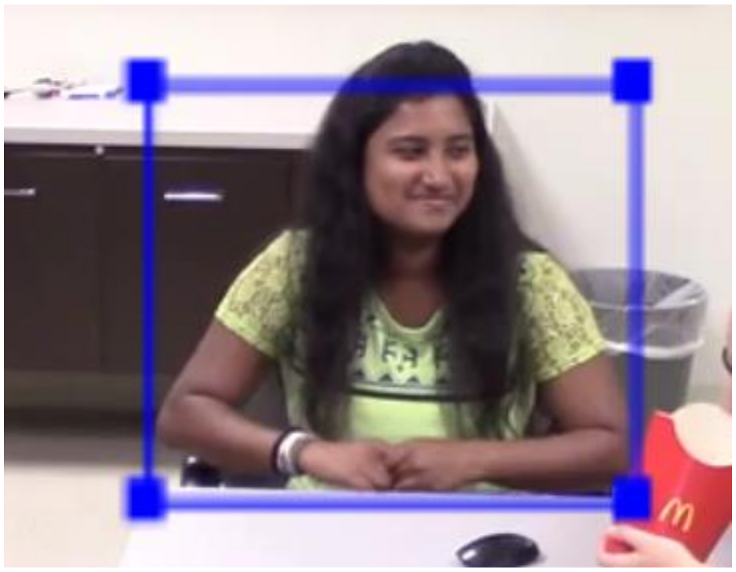
```
682       //Set begin time
683 ▼     btAssign.addEventListener('click', function(){
684
685           getStartTime = video.currentTime;
686           getStartTime = getStartTime.toFixed(2);
687           stringStartTime = getStartTime.toString();
688           beginTime.innerHTML = stringStartTime;
```

Lines 693 – 701 Do the same thing but for the end time.



```
693      endAssign.addEventListener('click', function(){
694
695
696          getEndTime = video.currentTime;
697          getEndTime = getEndTime.toFixed(2);
698          stringEndTime = getEndTime.toString();
699          endTime.innerHTML = stringEndTime;
700
701      });
```

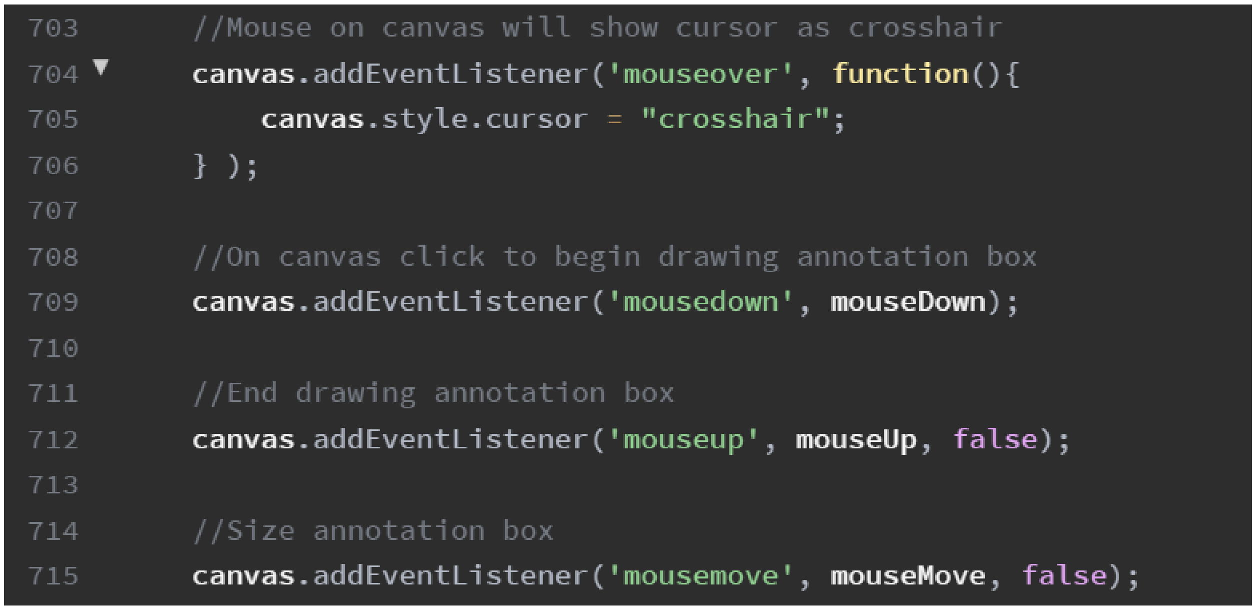
Before the user can finalize the annotation they must draw the annotation box on the canvas. Look at the example below.



Once the BEGIN and END times are set and the user has drawn the annotation box, they can then finalize the annotation.

Lines 703 – 715

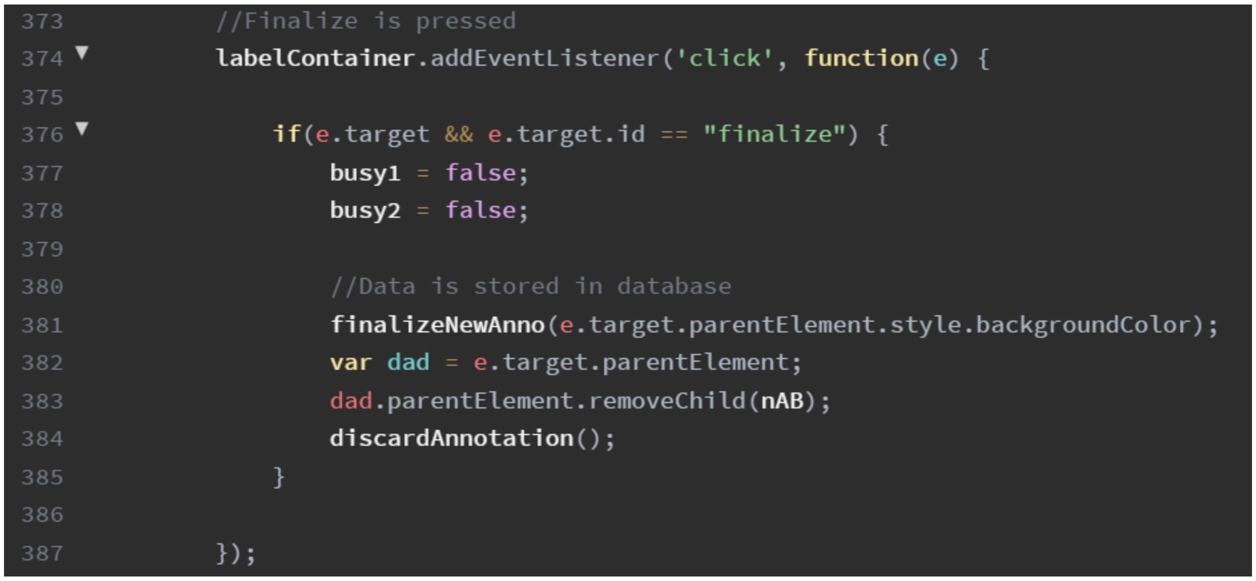
These lines provide event listeners that actually draw and resize the annotation box.



```
703     //Mouse on canvas will show cursor as crosshair
704     canvas.addEventListener('mouseover', function(){
705         canvas.style.cursor = "crosshair";
706     } );
707
708     //On canvas click to begin drawing annotation box
709     canvas.addEventListener('mousedown', mouseDown);
710
711     //End drawing annotation box
712     canvas.addEventListener('mouseup', mouseUp, false);
713
714     //Size annotation box
715     canvas.addEventListener('mousemove', mouseMove, false);
```

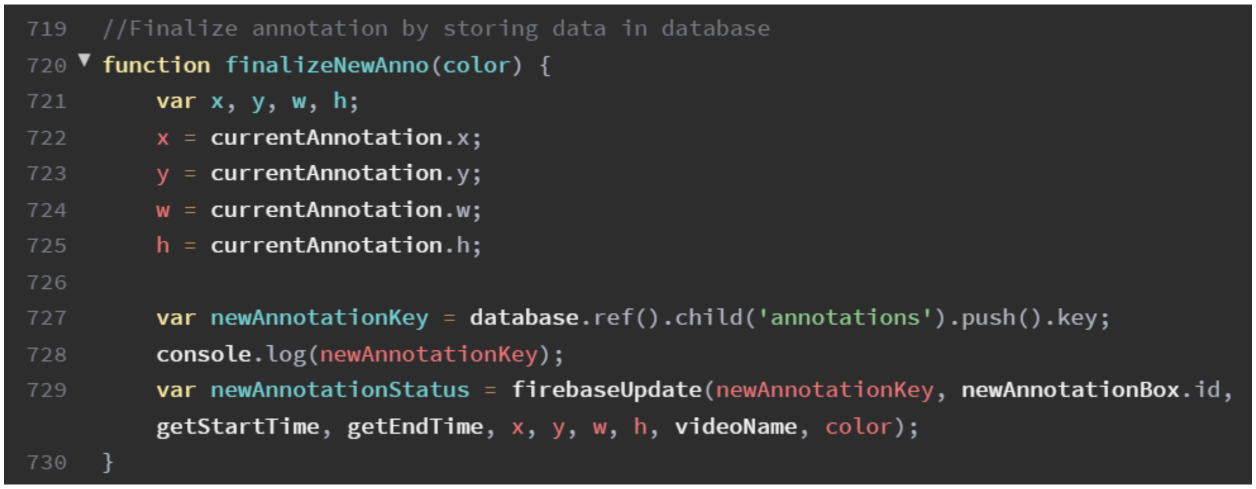
Finalize Annotation: Lines 373 – 387

Once the user has set the begin and end times and drawn the annotation box they will press the *FINALIZE* button which will store the data by executing the code below. On line 381 the function **finalizeNewAnno(color)** is called.



```
373     //Finalize is pressed
374     labelContainer.addEventListener('click', function(e) {
375
376         if(e.target && e.target.id == "finalize") {
377             busy1 = false;
378             busy2 = false;
379
380             //Data is stored in database
381             finalizeNewAnno(e.target.parentElement.style.backgroundColor);
382             var dad = e.target.parentElement;
383             dad.parentElement.removeChild(nAB);
384             discardAnnotation();
385         }
386
387     });
```

The **finalizeNewAnno()** function updates the database with the annotation data the user just created.

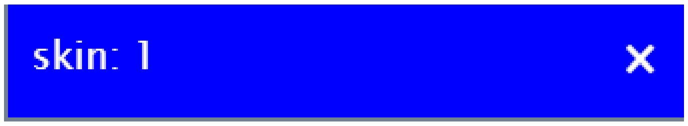


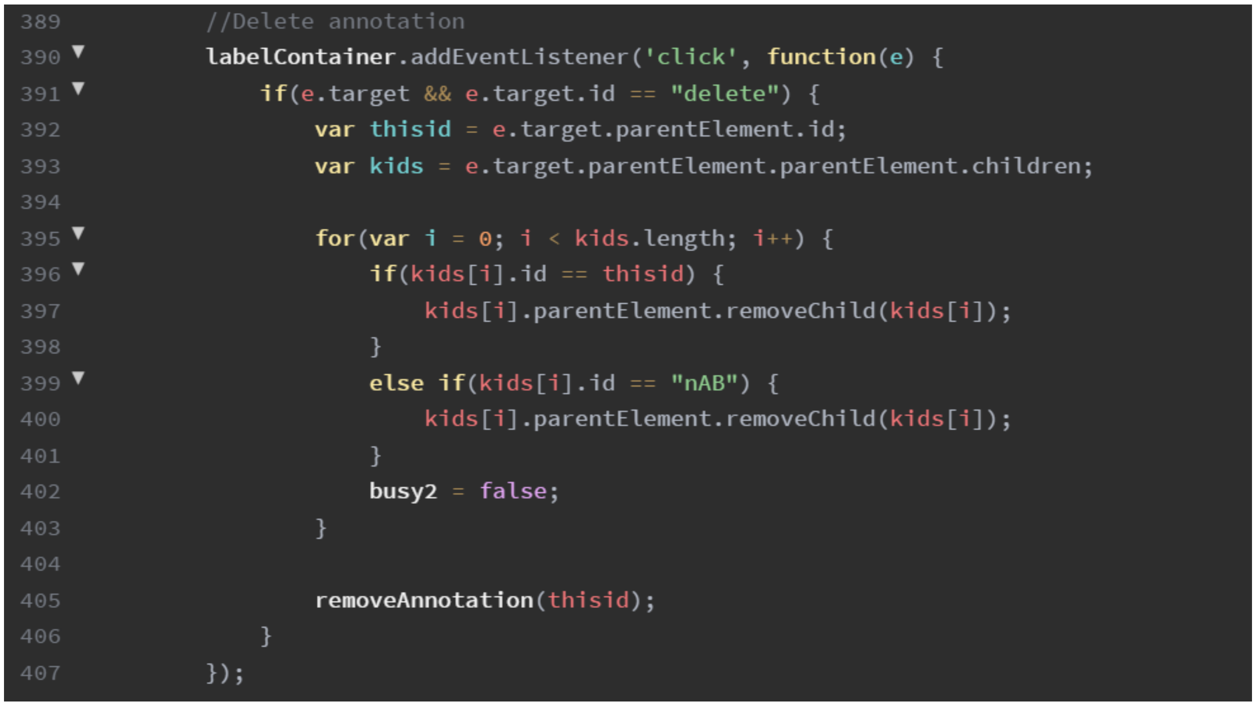
```
//Finalize annotation by storing data in database
function finalizeNewAnno(color) {
    var x, y, w, h;
    x = currentAnnotation.x;
    y = currentAnnotation.y;
    w = currentAnnotation.w;
    h = currentAnnotation.h;

    var newAnnotationKey = database.ref().child('annotations').push().key;
    console.log(newAnnotationKey);
    var newAnnotationStatus = firebaseUpdate(newAnnotationKey, newAnnotationBox.id, getStartTime, getEndTime, x, y, w, h, videoName, color);
}
```

Delete Annotation: Lines 389 – 407

This event listener deletes an annotation. It does so when the user clicks the "X" on the annotation.

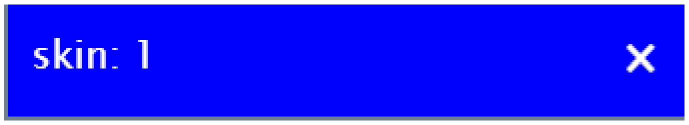


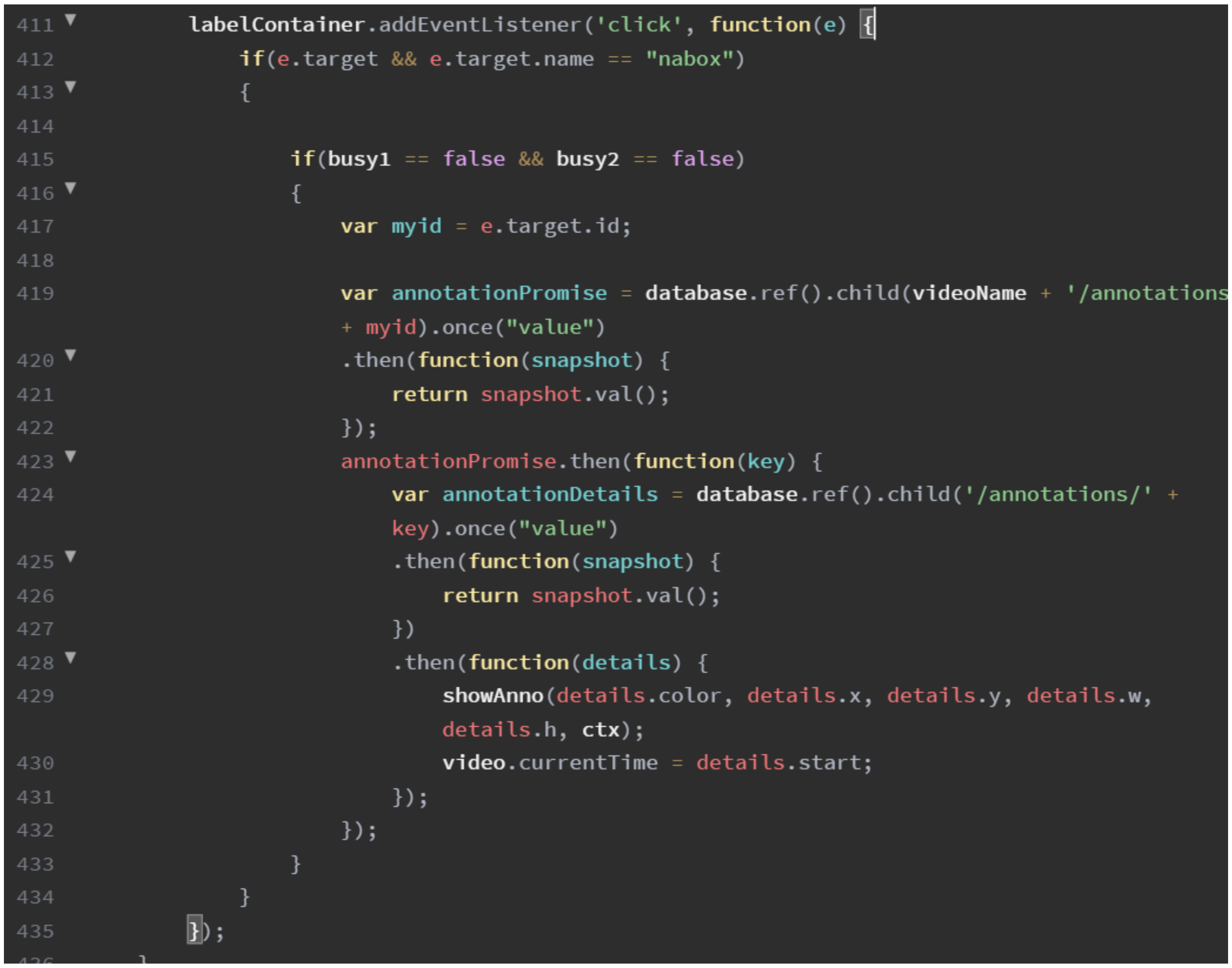


```
389         //Delete annotation
390         labelContainer.addEventListener('click', function(e) {
391             if(e.target && e.target.id == "delete") {
392                 var thisid = e.target.parentElement.id;
393                 var kids = e.target.parentElement.parentElement.children;
394 
395                 for(var i = 0; i < kids.length; i++) {
396                     if(kids[i].id == thisid) {
397                         kids[i].parentElement.removeChild(kids[i]);
398                     }
399                     else if(kids[i].id == "nAB") {
400                         kids[i].parentElement.removeChild(kids[i]);
401                     }
402                     busy2 = false;
403                 }
404 
405                 removeAnnotation(thisid);
406             }
407         });
```

Display finalized annotations:

Finalized annotations will minimize to reduce clutter. Once they have been minimized if the user wishes to see the annotations created they can click on the annotation (anywhere but the X on the example below) and the annotation box will display on the canvas where it was drawn. Also, the video current time will jump to the BEGIN time that the user set for the annotation.





```
        labelContainer.addEventListener('click', function(e) {
            if(e.target && e.target.name == "nabox")
            {

                if(busy1 == false && busy2 == false)
                {
                    var myid = e.target.id;

                    var annotationPromise = database.ref().child(videoName + '/annotations
                    + myid).once("value")
                    .then(function(snapshot) {
                        return snapshot.val();
                    });
                    annotationPromise.then(function(key) {
                        var annotationDetails = database.ref().child('/annotations/' +
                        key).once("value")
                        .then(function(snapshot) {
                            return snapshot.val();
                        })
                        .then(function(details) {
                            showAnno(details.color, details.x, details.y, details.w,
                            details.h, ctx);
                            video.currentTime = details.start;
                        });
                    });
                }
            }
        });
```