QR Code How-To Guide

Prepared by the
Association of Nova Scotia Museums
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ASSOCIATION OF NOVA SCOTIA MUSEUMS

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Introduction

What are QR codes?

A QR code is a type of barcode that can hold more information than the familiar kind scanned at checkouts around the country. The "QR" stands for "quick response," a reference to the speed at which the large amounts of information they contain can be decoded by scanners. They were invented in 1994 in Japan and initially used for tracking shipping. As the code can be easily decoded by the camera of a smartphone, this technology is increasingly accessible to the average person. Instead of tracking car parts and packages, the codes can work with the phone's Internet browser to direct the visitor to online content quickly and efficiently. A QR code acts as a link embedded in the real world, integrating it with the virtual computer world. They have been widely used for advertising campaigns, linking to company websites, contest sign-up pages and online menus.

Museums

Potential

It is increasingly common for museums to develop smart phone applications. Many large, well-known museums have released standalone applications—or "apps"—which give smartphone users more information on museum exhibits and access to multimedia content like audio tours and short videos. These apps, however, can cost many thousands of dollars to develop, putting them out of reach to all but the largest institutions. Additionally, standalone apps can only be used by the types of phones for which they are designed. That means that only visitors with iPhones could use an iPhone app, even though other phones such as Androids and BlackBerries have similar abilities.

QR codes have the potential to deliver similar content with very little to no overhead cost. They can be scanned by a range of devices, increasing the audience which can access them. By using this technology, even small, volunteer-run community museums can take advantage of new technology to provide a more interactive museum experience: granting virtual access to artifacts not on display, oral history interviews, and deeper information that may not fit on labels or be interesting to all visitors.This information can be uploaded to the Internet on free sites like YouTube or Wordpress, and then linked through QR codes placed around the museum. For

museums that share collections information online through sites like NovaMuse or Artefacts Canada, a link can be provided to the catalog record for each object on display.

Precedent

A number of museums have used QR codes for a variety of programs.
See Appendix A for an overview of museums and cultural institutions that are currently using QR codes.

How To

Who can use QR codes?

Three things are required in order to successfully decode a QR code: a smartphone, a QR code scanning application, and a connection to the Internet (either through the phone's data plan or over a wireless network).

The Phone

In order to use QR codes, you need to have a cell phone capable of running decoding software. These phones can download and install applications, can access the Internet, and have cameras. These types of phones are loosely referred to as "smartphones"; the most common examples are iPhones, BlackBerries, and Android phones.

The Application

There are a number of applications which can be used to decode a QR code, all of which work in similar ways. We have chosen to use ScanLife, a free app which has versions for a wide range of phones. Going to the website - http://getscanlife.com - on a phone's Internet browser will automatically detect the type of phone and guide you to the appropriate version of the application.

The Connection

Because the QR code is a link to online content, you need to be able to connect to the Internet in the location where the codes are placed. Smartphones can connect to the Internet in two ways: through a 4G data connection, or through WiFi.

4G Data Connections

A data connection can be accessed anywhere there is good cellphone signal strength. It is a feature like talk time or text messaging, and most customers are given only so many MB or GBs of data a month—if they download too many things or visit too many websites, they can be charged a significant amount for overages. The benefit of relying on a data connection is that it is automatic: visitors do not have to set up or configure anything, and it is accessible almost anywhere you can make or receive a phone call. This simplifies the process by removing the burden of creating a good network from the shoulders of the museum. There can be some problems, however, with using the 4G data network, which can result in visitors going over their monthly allotments and seeing charges on their monthly bill. It is also not as accessible to visitors from out of the country, as fees for data roaming—ie accessing a data connection outside of your home country—can be very expensive. Additionally, coverage in rural areas is still inconsistent between service providers.

WiFi

Most smartphones are able to connect to a regular wireless Internet network, “WiFi”, and it is now expected that public institutions will offer free WiFi as part of their services. When a cellphone is connected to the WiFi connection the user does not have to worry about data and roaming charges; the user can watch as many videos and look at as many pictures as he or she pleases. However, it becomes the museum’s responsibility to ensure that coverage is good throughout the area which will have codes, and that individual visitors are able to connect to the network. This can be especially complicated if the wireless network is password protected.

For these reasons it is recommended that you have an open, password-free wireless network, as this provides the best experience for the most users. Use signage to inform visitors about availability to encourage use. If your WiFi is password-protected, include the password on the signage.

Security

If the museum is going to share its wireless network with visitors, it needs to ensure that any computers on that network are secure. To do this, make sure that file and print sharing is turned off and that all user accounts on your computers have secure passwords. You should also secure your router by changing the default username and password; instructions on how to do this can be found in your router’s instruction manual.

Some routers also have advanced features that you should use if available. One feature you should look for is the hours of operation security. This feature lets you designate certain hours that your wireless network will be active. For example, you can set the wireless network to start when the museum opens in the morning and automatically turn off at the end of the day. This is important because if you leave your wireless network open and unprotected, anyone with a laptop from outside or near the building would be able to make use of your Internet connection. If this option is not available, it is a good idea to turn off the router at the end of each day.

If you are not sure how to set up these features, or you cannot find the information you need from documentation or searching the manufacturer’s website, you should consult with a computer technician in your area. Because unprotected wireless networks can easily be exploited for a variety of reasons it is very important to address this.

Short URLs, Tracking & Generating Codes

Just like it is important to track visitors, it is important to be able to track how many people are using the codes once you have installed them. We found that the easiest way to do this was by using a URL shortening and QR code service, like QR Code Generator. This allows you to shorten the URL and create the QR Code in one-step. URL shorteners take long links and make them short. This is helpful for reducing the overall size of a QR code, as the more text it has to encode, the bigger it has to be. More importantly, by generating a new unique URL that is associated only with the QR code, it is easier to see who is checking out your content through the code itself as opposed to people who are finding your content by searching YouTube or clicking on browser links. QR Code Generator tracks the number of scans and allows you to generate further statistics using your Google Analytics account. It is important to check long-term

viability/free use when making decisions regarding use of application(s). Guidelines for terms of use and/or fees may change over time.

Making a Code with QR Code Generator

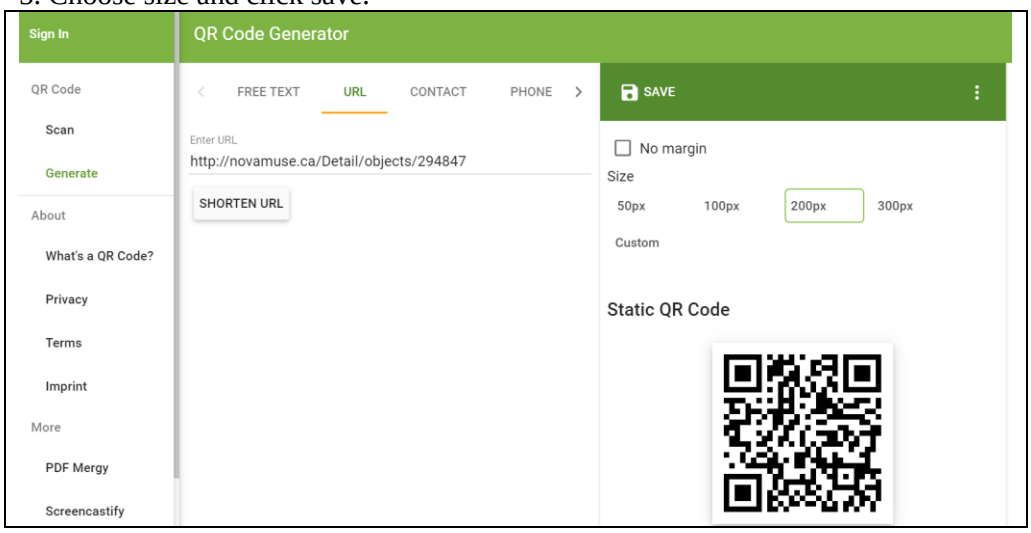
1. Navigate to: https://www.the-qrcode-generator.com/

2. Click URL tab below QR Code Generator heading.

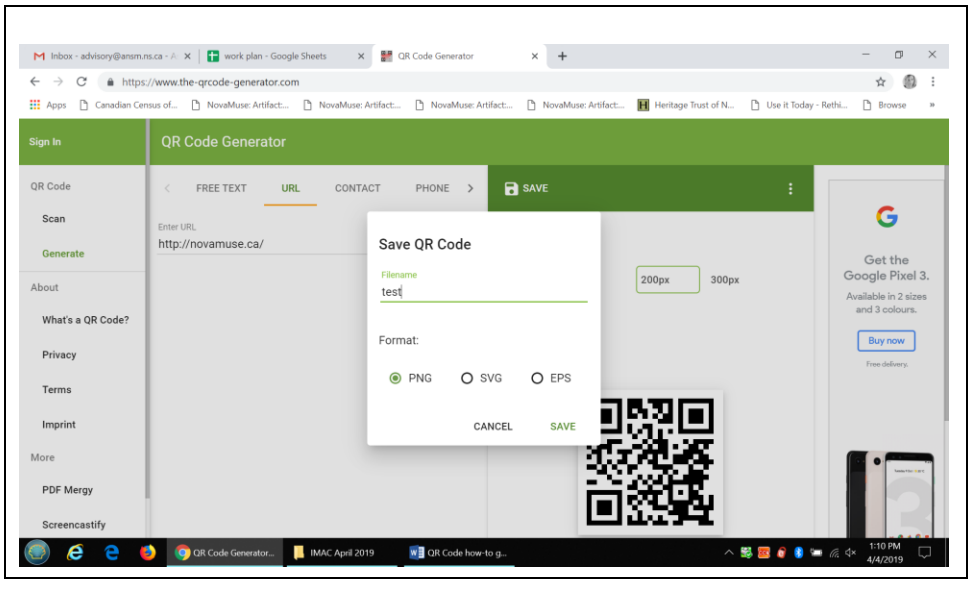
3. Copy URL and paste address into the field labelled “Enter URL.”

4. Click “Shorten URL” button

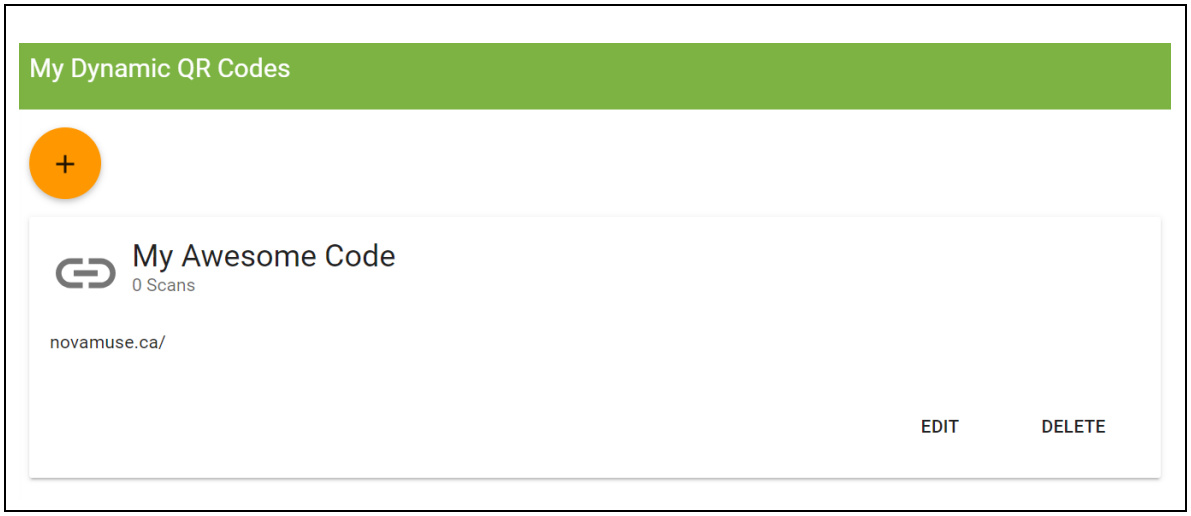
5. Choose size and click save.

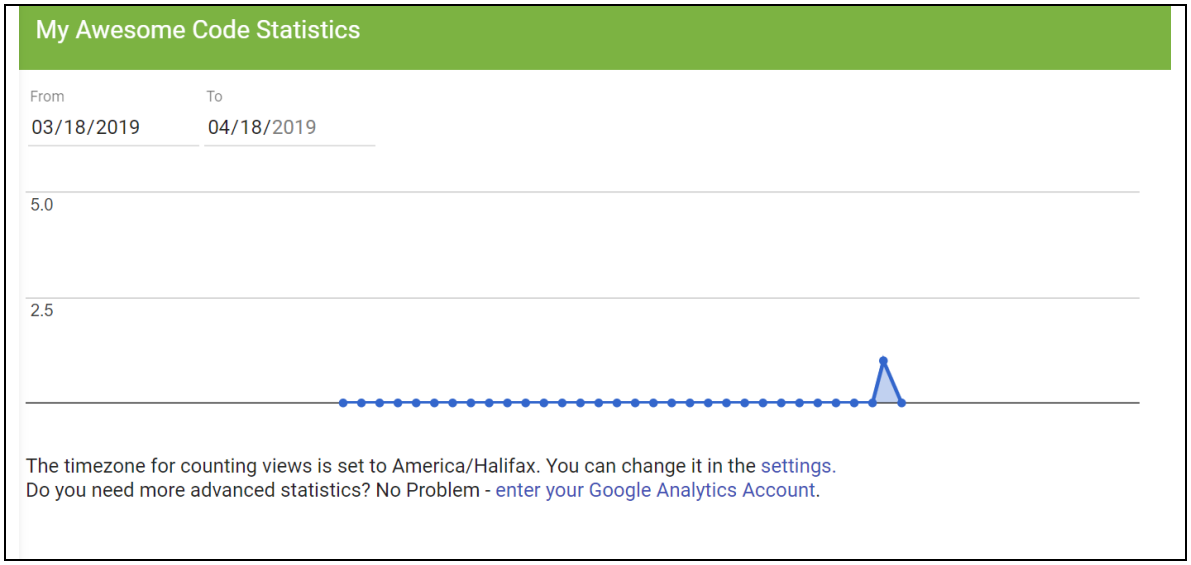


6. Choose format, name file, and click save.

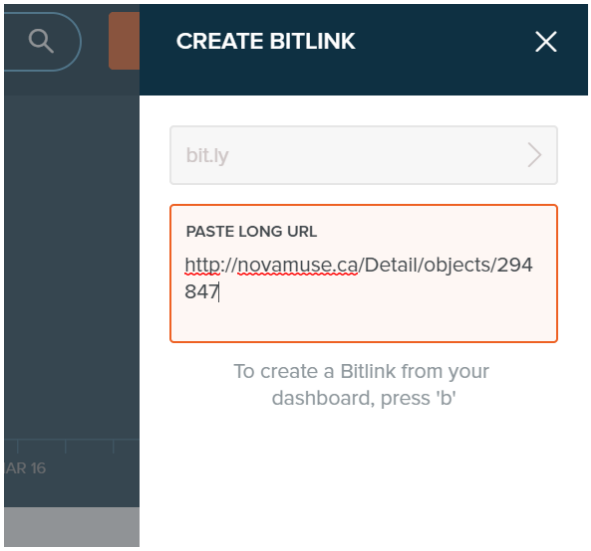


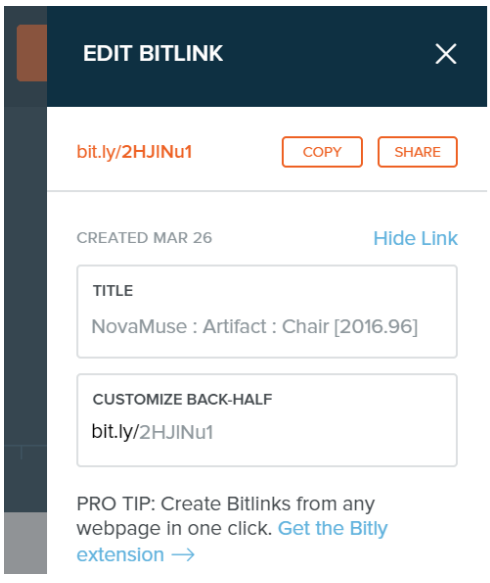
7. There is an option to log-in using your email address to save, edit, and track the QR Codes in the application.





Alternatively, you can follow a two-step process by, first, using a URL shortening and, second, using a QR code service. Bit.ly allows users to shorten the URL; it automatically keeps track of who is viewing your link and how, and can provide you with charts and detailed information about usage statistics. There are a number of other platforms that can be used for this purpose, including: T2M, TinyURL, and Zapier. Some of these platforms include paid services. Bit.ly offers a free subscription with options for tracking statistics.

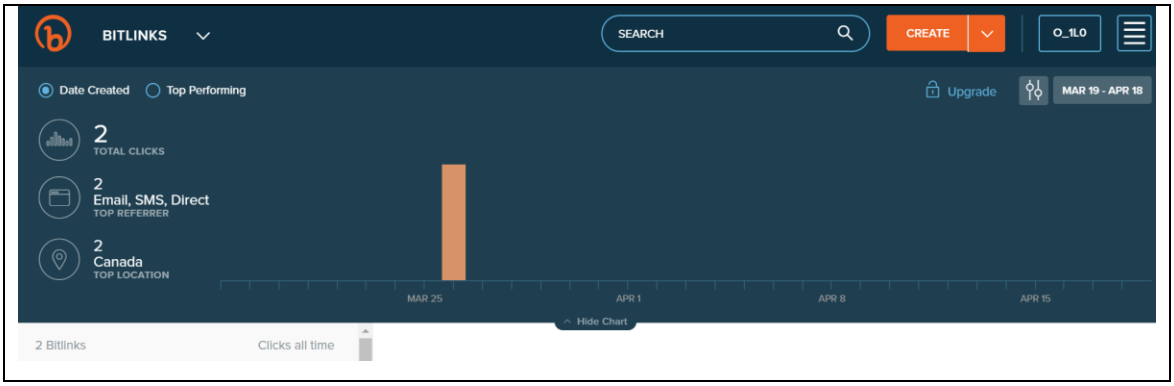




To use this service, navigate to https://bitly.com/, sign-up for a free account and choose create Bitlink from the drop-down menu. Then, paste the link you would like to shorten into the text box, for example the address of a YouTube video you have uploaded. A

short link will be generated automatically. You can also keep track of the URLs you have generated.

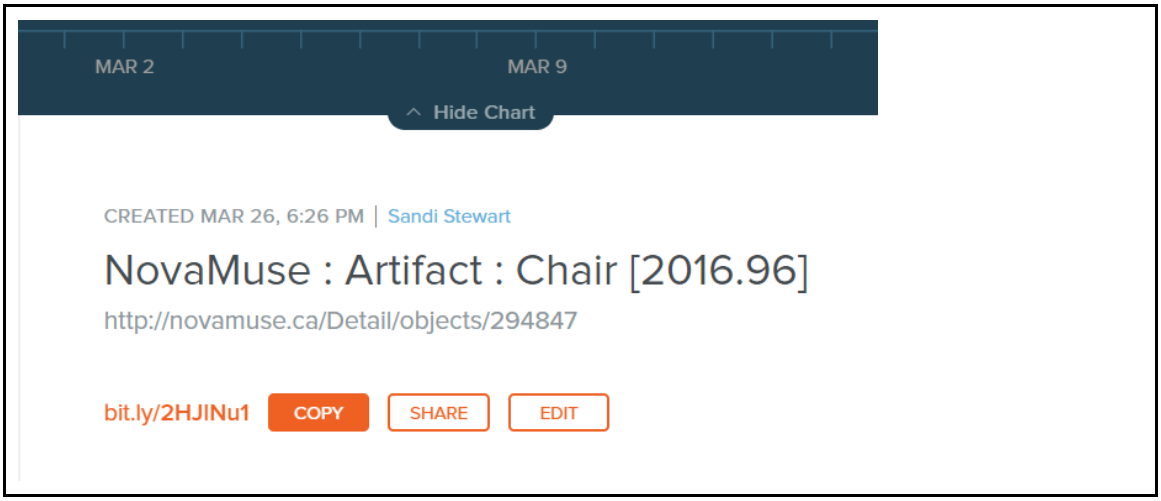
After generating the short URL, you can monitor statistics from the homepage. This statistics page should be bookmarked or otherwise recorded, and checked regularly once the codes go live.



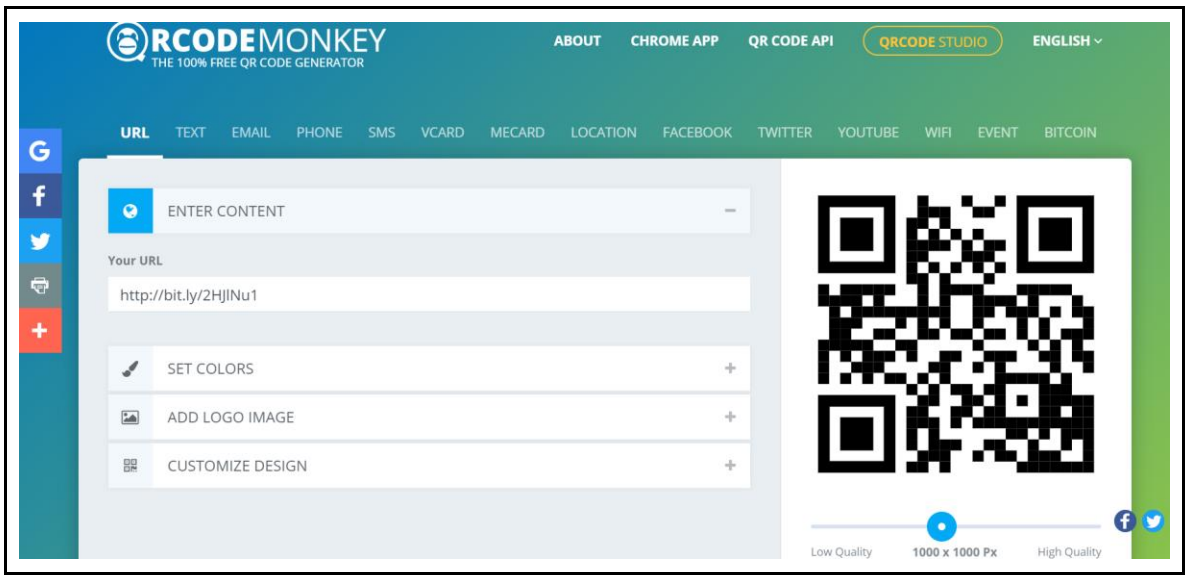
QR codes can be created using a number of websites. It is as simple as copying and pasting the desired link URL into a text box and hitting "enter." Some QR code generating sites include: QR Code Monkey, GOQR.me, qrcode-generator.com, QR Stuff.

Making a Code with QR Code Monkey

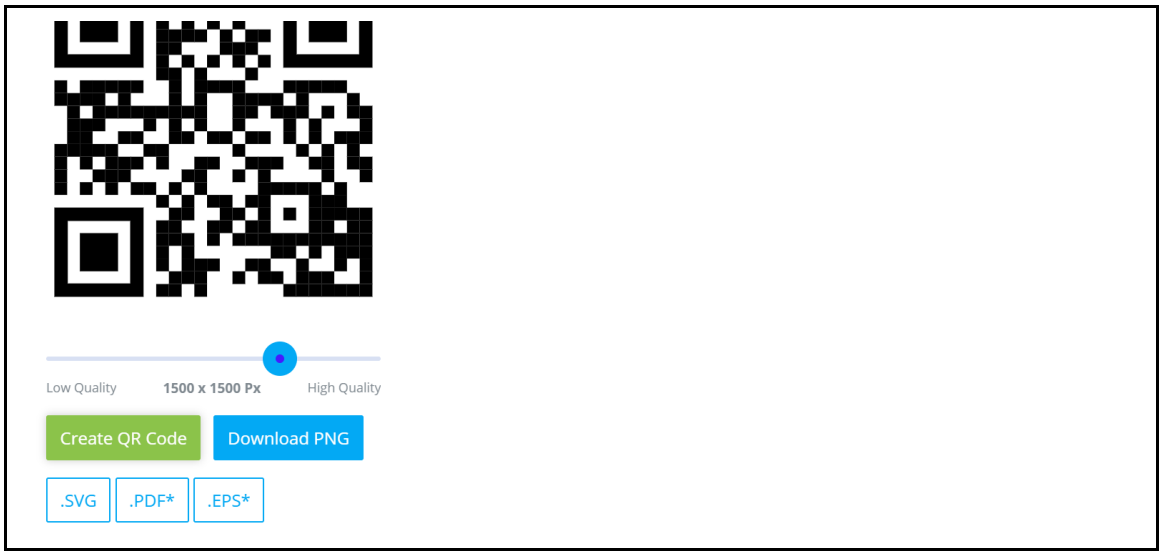
1. Copy the short code for the content that you generated with Bit.ly.



2. Open https://www.qrcode-monkey.com/ and paste the address into the field labeled "Your URL"



3. Choose what size you want to generate the code. Select your preferred size beneath the barcode by dragging the bar from the left (low quality) to the right (high quality), and click "Create QR Code." The QR code will generate here. Change file type to SVG, PDF, or EPS and click "Download."



4. This image can now be printed, emailed, posted online or otherwise used. You're done!

It's important to read the fine print regarding what is included in the free versus paid version of the software.

Testing Codes

The best way to test a code is with a smartphone with a working QR code scanner. If a smartphone is not available, software which allows a webcam connected to a computer to scan QR codes is available and listed in Appendix C: Web and Software Resources.

Installing Codes

Installing codes is as simple as printing them. They can be incorporated into other graphics such as exhibit labels or simply posted on their own. However, the codes must remain square and retain a white border around them. They may be as large as you wish; however, don't make them smaller than about 4cm square as they may not be readable.

Creating Content

QR codes are simply a way to deliver content to mobile devices. The focus is not QR codes but the content that they link to.

Because the content is going to be viewed on a smartphone and in public, it is important to keep content short in length and small in file size. The Internet browsers installed on phones can also display things very differently from what you may see on a computer, and there can be differences from phone to phone as well. For this reason, we recommend using sites which have been designed to display on mobile phones. Many popular, free sites—which you may already be using—automatically reformat your uploaded content when viewed from a phone. The list includes Flickr (images), YouTube (video), Wordpress and Tumblr (blogging and text) and Facebook, Twitter, Instagram, etc. (social networking). Using sites such as these eliminates hosting costs, provides some built-in statistical tracking and removes the need for advanced technical knowledge. If you are already using these sites it has the added benefit of re-purposing content which already exists.

Suggested Content

Detailed instructions for creating these projects can be found in Appendix B: Project How-Tos.

1. Readings From Books

Reading short sections of relevant published works can be an easy way to make engaging content. It is easier to record high-quality audio than video, and if you are selling the book in the gift shop it can make for a nice tie-in. These audio segments can be matched with photos, or even just your institution's logo, and uploaded to YouTube.

2. Oral Histories

Oral History interviews with community subject matter experts make for engaging short content. They can be placed near items in the museum, which they reference either thematically or directly. Imagine for example, a description of housework in the 1930s placed in the kitchen of a historic house museum. Since many institutions have oral histories as part of their collection, this is also a way to re-purpose existing content and minimize workload.

3. Photographic Slideshows

Another way to re-purpose existing content is to create simple slideshows using archival or other photographs. These can be combined with either of the two audio types suggested above, paired to music or silent.

4. Single Photographs

Even a single photograph can make for effective content. One site used QR codes to link advertisements from the 1930s and 40s to objects they had on display. This method is simple, but effective.

5. Database Records

If some of your artifact records for objects on display have been shared online, a simple link to that content is a great way to share knowledge of that artifact that would otherwise be unknown. Records for items which are not displayed due to limited space or fragility can also be linked to, providing visitors with a behind-the-scenes look into the museum's storage areas.

6. Audio Tours

QR Codes can also be used to create narrated audio tours, providing introductions to rooms and further information on artifacts from curators and subject matter experts.

About the ANSM Project

Background

For many years, community museums in Nova Scotia have participated in artifact research projects in order to enhance their knowledge of their collections. Digital images of artifacts were taken, and the "enriched" records were uploaded to Artefacts Canada. In addition to the research conducted on each specific item, a broader approach was taken in the compilation of a Made in Nova Scotia Database. This resource contains over 8300 profiles of artisans and manufacturers in the province. Museums and the general public have access to this information through CollectiveAccess and NovaMuse.

At the Association of Nova Scotia Museum's (ANSM) 2010 Spring Conference, members requested assistance with interpretation, especially in looking at ways to make things more interactive through the use of technology. This was identified as one of their top three priorities for ANSM. To deliver on this request, ANSM embarked on a project to build on the CHIN-funded research work conducted in, and enhance the current interpretive offerings at participating museums.

What we did

ANSM worked with 12 museums from across the province to re-purpose existing content and develop new content to be posted online and shared on-site with QR codes:

Admiral Digby Museum, Digby
Citadel Hill Army Museum, Halifax
Colchester Historical Museum, Truro
Creamery Square Museum, Tatamagouche

Memory Lane Heritage Village, Lake Charlotte
North Highlands Community Museum, Cape North
Nova Scotia Museum of Natural History, Halifax
Nova Scotia Sport Hall of Fame, Halifax
O'Dell House Museum, Annapolis Royal
Pier 21: Canada's Immigration Museum, Halifax
Shelburne County Museum, Shelburne
Trois Pignons Centre Culturel, Chéticamp

These sites are spread out around the province, located in both rural and urban areas. They represent the diverse nature of Nova Scotia's heritage, including a specialized military museum, a sports hall of fame, an Acadian cultural centre, and one of Canada's national museums. Operating structures range from various community museum models to the provincial and federal governments. By working with such a diverse group of sites, it was hoped that all museums, regardless of site or resource constraints, would be able to see how such a project could be implemented in their own organization.

Challenges

Many of our biggest hurdles were caused by the structure of the project rather than any difficulties arising from QR codes and web content. Many of the sites we worked with were located many hours away from our office in Halifax, and the amount of time we were able to spend on-site was very limited. This meant that assessing and developing content on-site was often challenging. The distance also prevented more discussion about content types and possibilities. In a situation where content for QR codes were being developed in-house, this would not be an issue.

Here it should again be stressed that the key to the success of a project like this is the content. The novelty of QR codes can only go so far, and if they do not link to content that enhances a visitor's museum experience they will not be viable over the long-term.

Another issue we faced was the lack of standards for mobile content. There is a dizzying range of phones, which can access QR technology, each with different display abilities; some, such as iPhones, display Internet content almost the same as a regular web browser, while others are very limited in their abilities. We received a large amount of conflicting advice and much time was lost trying to find the best way to deliver content, before ultimately deciding to rely on larger sites, like YouTube, which have already done the leg work of making content mobile-friendly.

Appendix A: QR Code Use in Museums and Cultural Institutions

Carinthia Open Air Museum, Carinthia Austria
Uses QR codes in conjunction with a wiki site to provide more information about the buildings and sites around the museum in multiple languages.
http://freilichtmuseum-mariasaal.at/

Cleveland Art Museum, Cleveland Ohio
Used QR codes as part of an advertising campaign promoting the opening of several new galleries. The codes, which ran in print media and on outdoor kiosks and billboards, linked users to an online version of the gallery audio tour.
http://www.clevelandart.org/

Louisiana State Museum, Baton Rouge Louisiana
Used QR codes with the exhibit "Living with Hurricanes: Katrina and Beyond."Codes were used to both enhance object presentation and to link to the exhibit's Facebook page, allowing visitors to discuss their experiences of Katrina while exploring the exhibit.
http://lsm.crt.state.la.us/
https://louisianastatemuseum.org/
http://blog.barcoding.com/2010/09/qr-codes-remembering-katrina/ (blog post discussing use of QR codes)

The Mattress Factory, Pittsburgh Pennsylvania
Introduced QR codes in order to minimize the environmental impact of printing many visitor guides. Codes link to PDF documents, still images and YouTube-hosted video.
http://www.mattress.org/
http://www.youtube.com/watch?v=WiYtISBl4PM (shows the codes in action)

MIT Museum, Cambridge Massachusetts
Using QR codes to link to extended information on exhibits, such as articles. They have chosen not to provide any explanatory material about the codes, or to format the content for mobile web.
http://web.mit.edu/museum/
http://think.random-stuff.org/posts/qr-codes-in-exhibits (blog post)

Museum of Contemporary Canadian Art
QR codes also accompanied Douglas Coupland's exhibition of QR code paintings in 2015.
https://museumofcontemporaryart.ca/
https://www.vanartgallery.bc.ca/the_exhibitions/past_touring_exhibitions.html

Powerhouse Museum, Sydney Australia

Early adopter of QR codes. Experimented with in Using QR codes in 2008 to provide additional information about exhibits, links to audio, videos, etc, and documented the process on their blog. https://maas.museum/powerhouse-museum/

Royal Ontario Museum (ROM), Ontario Canada
The QR codes offer additional descriptions, audio, video, and interactive graphics in exhibitions. Introduced the ScopifyROM app in 2013, which was designed in partnership with Kensington Communications. QR codes also accompanied Douglas Coupland's exhibition of QR code paintings in 2015.
https://www.rom.on.ca/en
https://globalnews.ca/news/878153/royal-ontario-museum-unveils-interactive-app/
https://youtu.be/dYuEdPNcl9A Our Toronto: Scopify @ the ROM | CBC Toronto
https://www.vanartgallery.bc.ca/the_exhibitions/past_touring_exhibitions.html

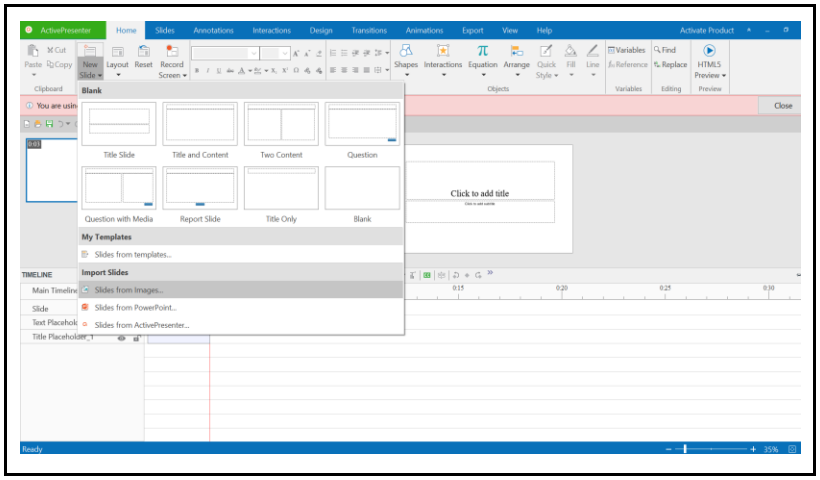
Appendix B: Detailed Project How-Tos

From Photos to Codes: Making a Photo Slide Show with ActivePresenter 7 From Start to Finish

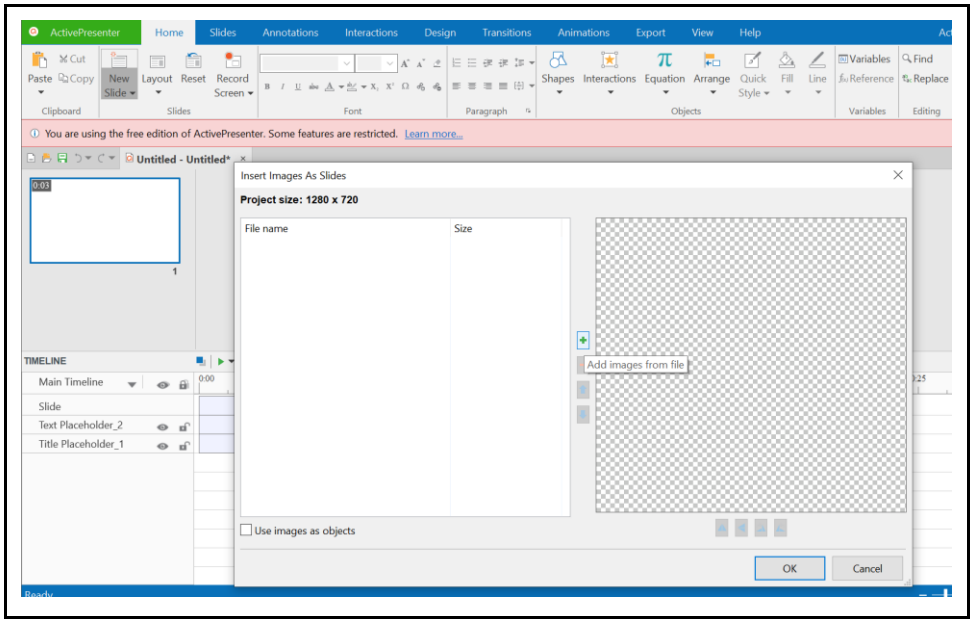
This is meant as a detailed guide that will walk you through all of the steps required to go from a handful of photos to a fully functioning and trackable QR code ready for installation. This process can be repeated with any kind of content that you like.

This guide will walk you through all the steps needed to create a photo slideshow, upload it to YouTube and create a QR code to link to it. You will need ActivePresenter 7 (see Appendix C) and a YouTube account.

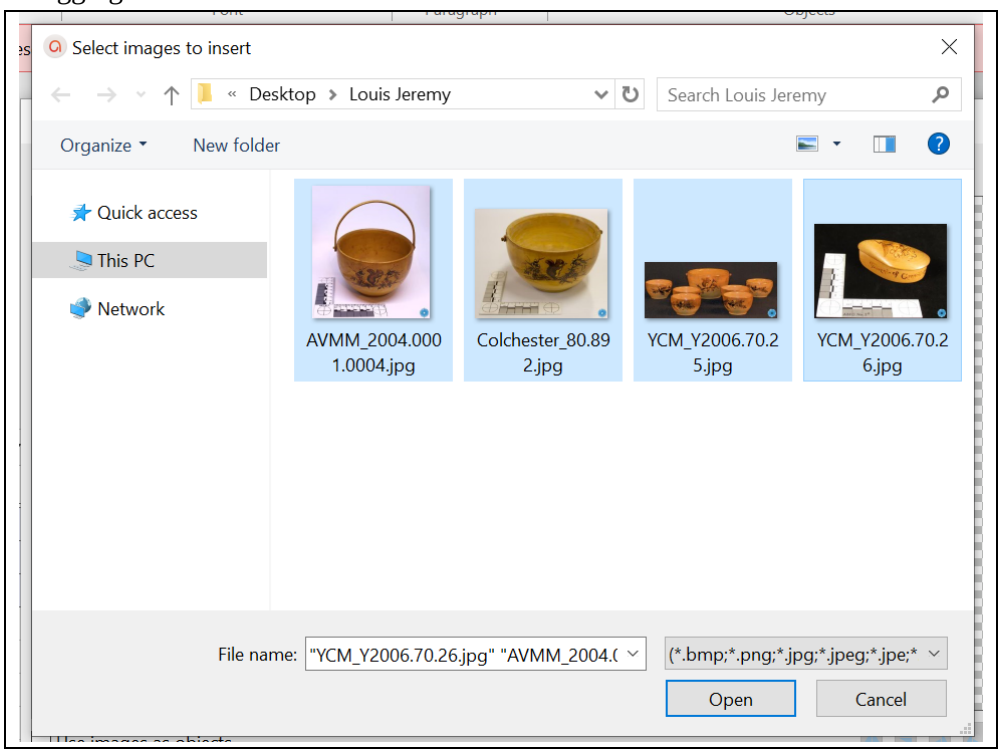
Step 1: Select Your Photos



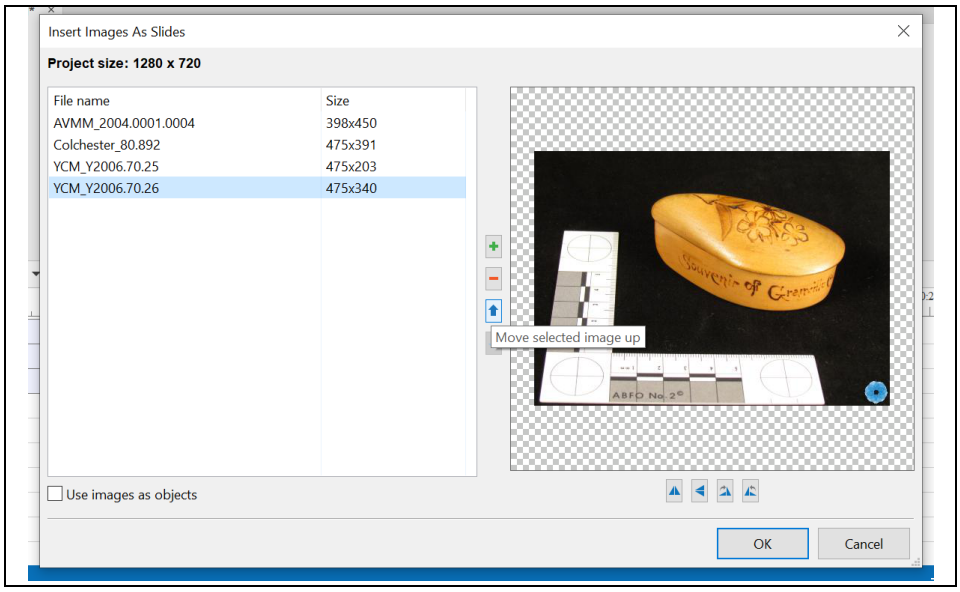
The first step in making a slideshow is to choose the photos you would like to use. To begin, launch ActivePresenter 7 and browse to the folder where the photos you want are located. Navigate to the New Slide tab and choose “Slides from Images” listed below the “Import Slides.” In the next screen, click the plus icon to add images from file.



Multiple photos can be selected by holding down the “ctrl” button while clicking, or clicking and dragging.

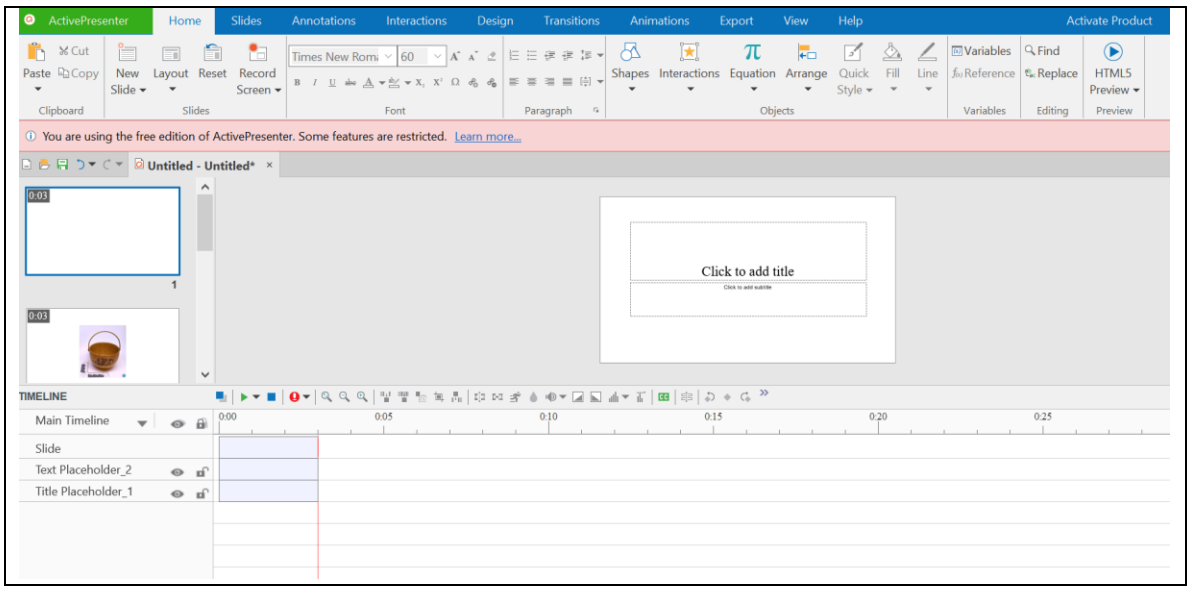


You can make further adjustments here such as, reordering the images by selecting an image and using the arrow icon. Click “Ok” when you are happy with the order.



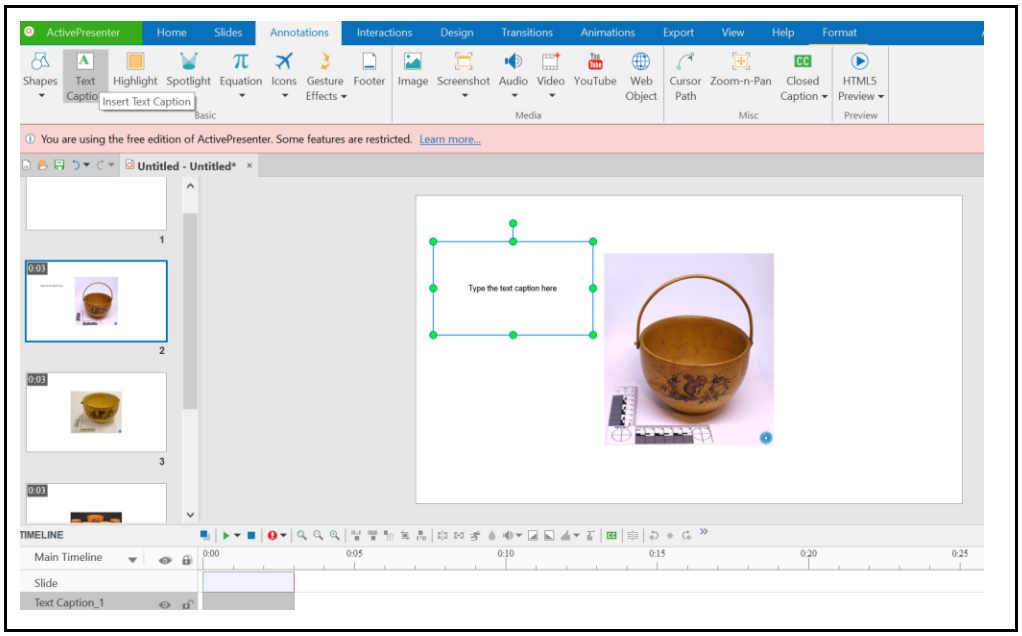
Step 2: Add Text Slides, Captions, and Audio

Choose the first slide from the slide navigation window if you wish to add a title to your movie. This can be found at the left-hand side of the screen.

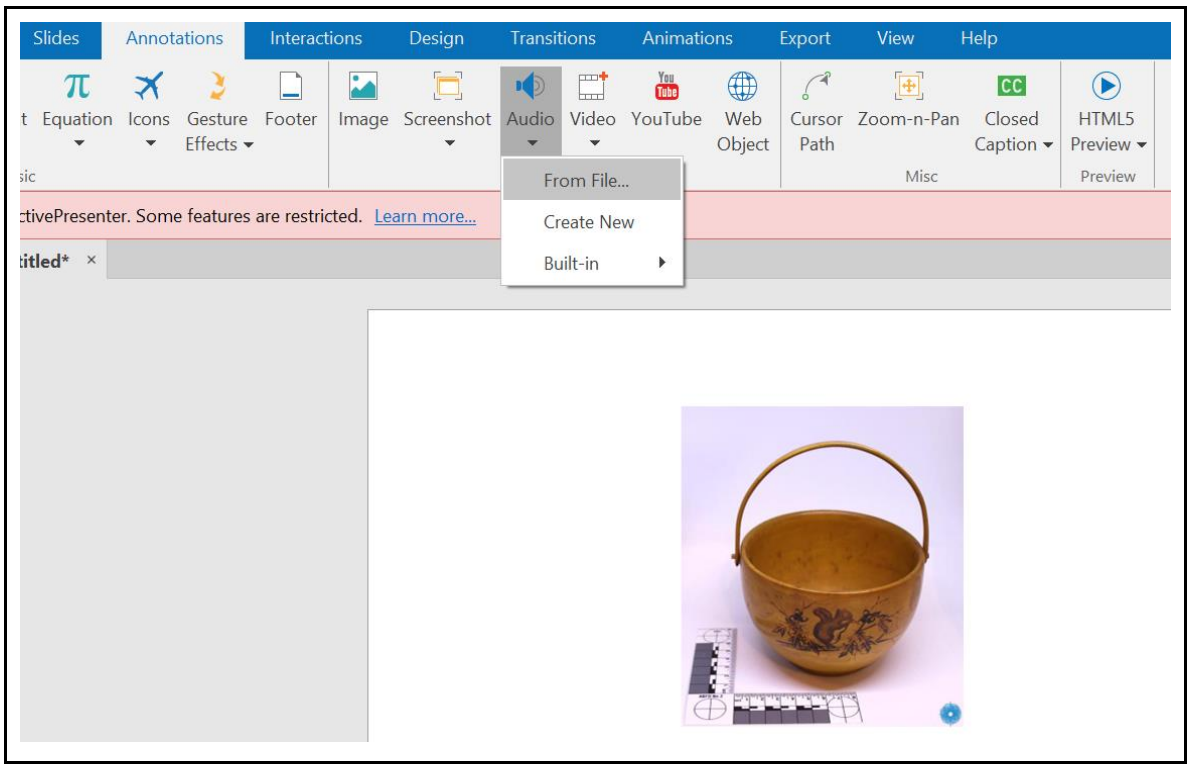


To add text to a slide with an image, first select the slide from the slide navigational window at the left-hand side of the screen. Under the Annotations Tab, choose Text Caption. Type the text captain in the text box. Alternatively, add a caption by clicking the green caption icon in the

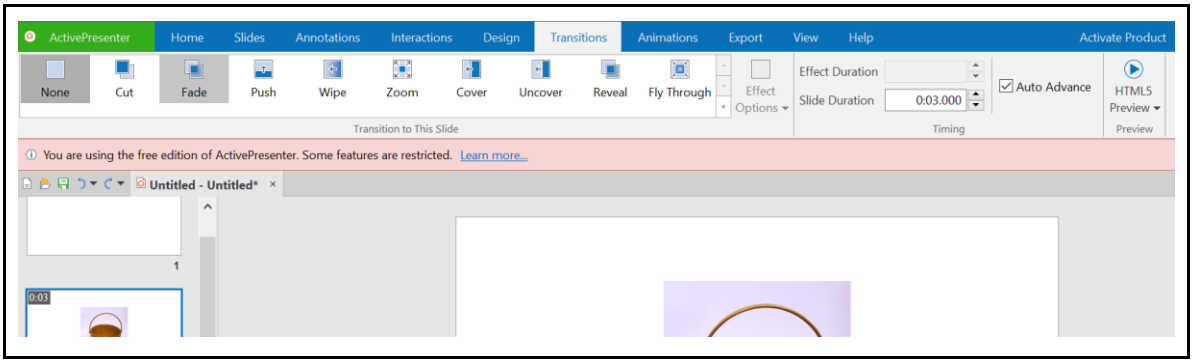
navigation bar above the timeline. Continue to navigate through the design features listed under each tab to customize your slide.



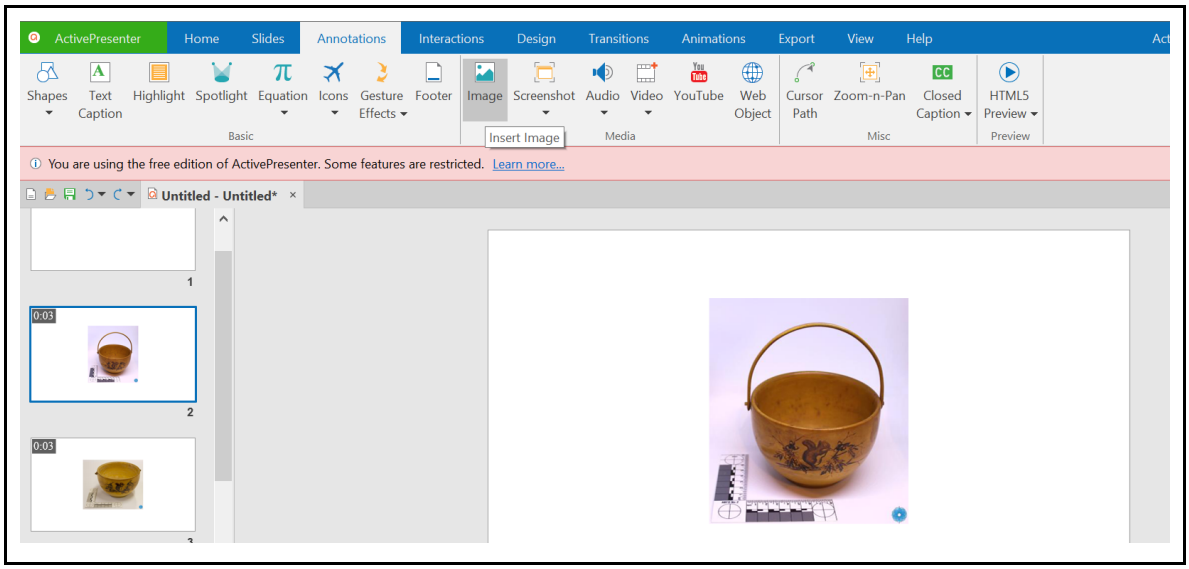
For instance, audio can be added by choosing Audio listed under the Annotations tab. Choose either “From File” or “Create New.”



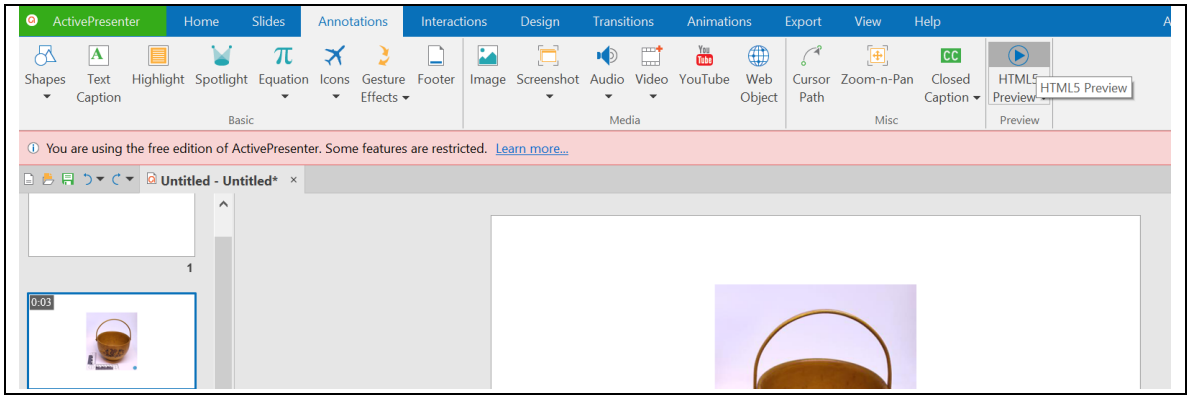
The Transition tab controls how each photo transitions to the next. You can choose a transition type and slide duration time here.



The Annotations tab allows you to add more photos to your slideshow. By default, the other photos in the originating folder that you did not select for your timeline will appear here. To add one, select it and choose 'open.' If you are looking for a different image, navigate to the location in which it is stored on your desktop.



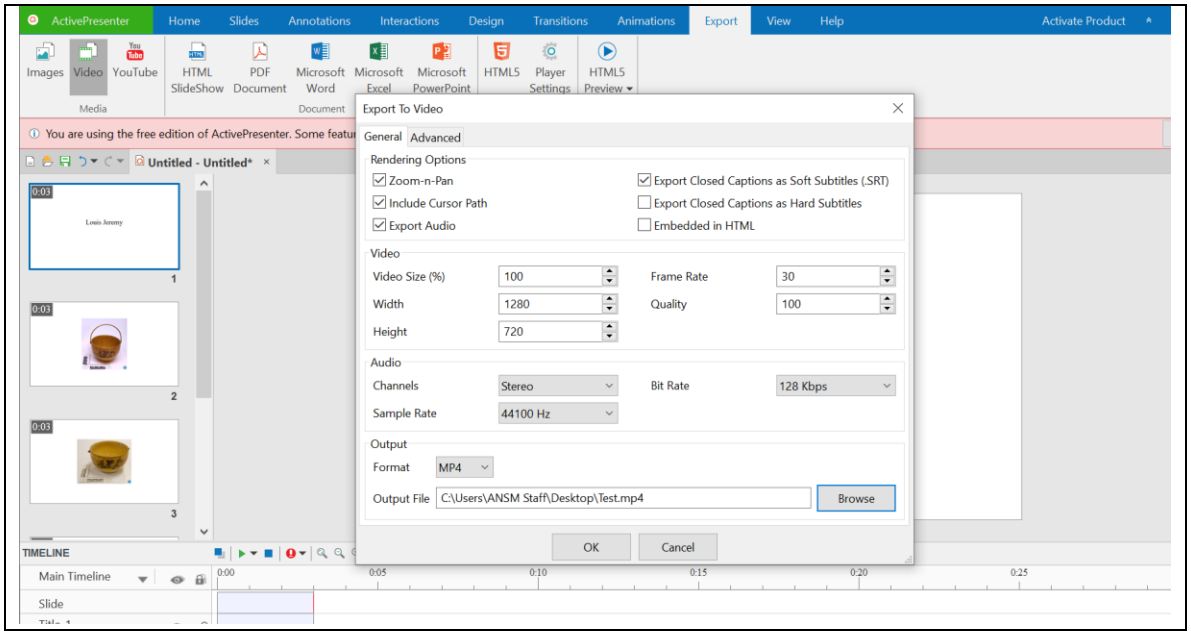
Your slideshow can be previewed by pressing HTML5 Preview.



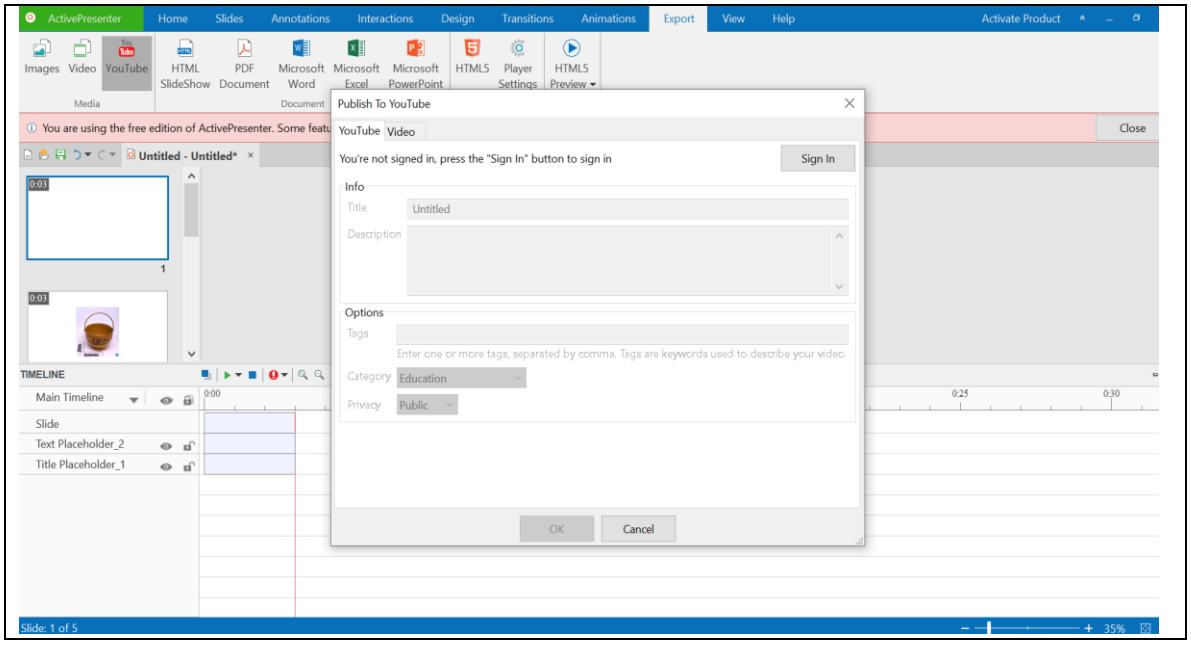
Step 3: Create Movie & Upload to YouTube

When you are happy with your movie, click the Export tab and choose either “Video” or “YouTube” (sign-in required).

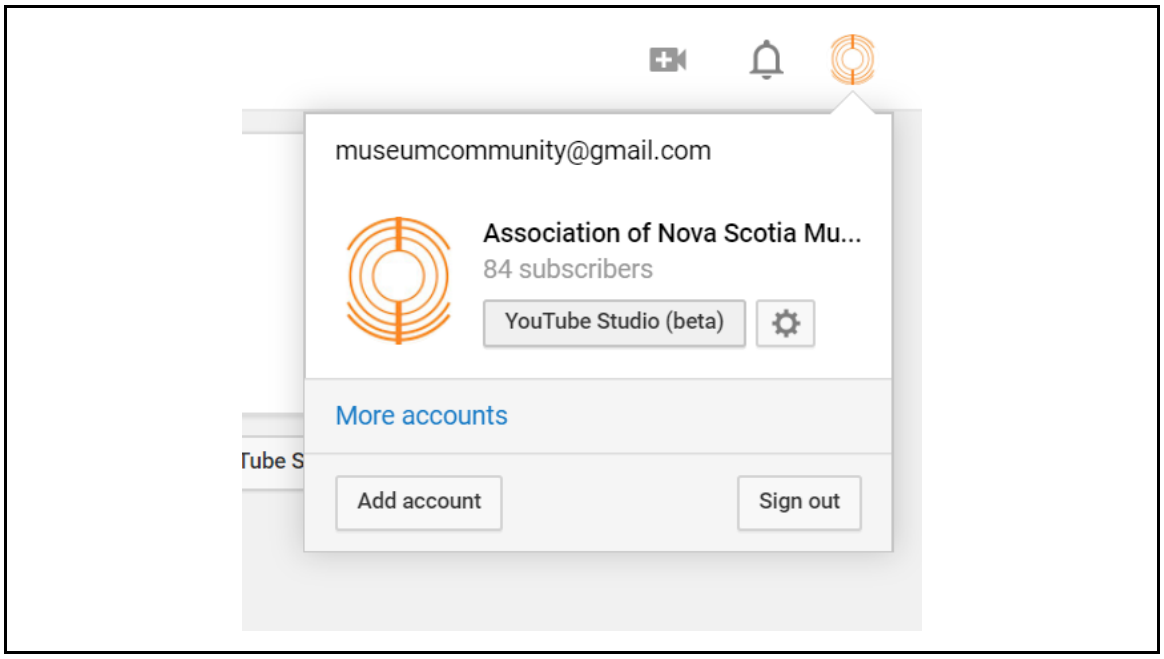
When exporting using “Video,” change the dimensions to 1280x720 to align with YouTube settings for best results. Ensure the box next to “Export Audio” has been checked if you have added audio.



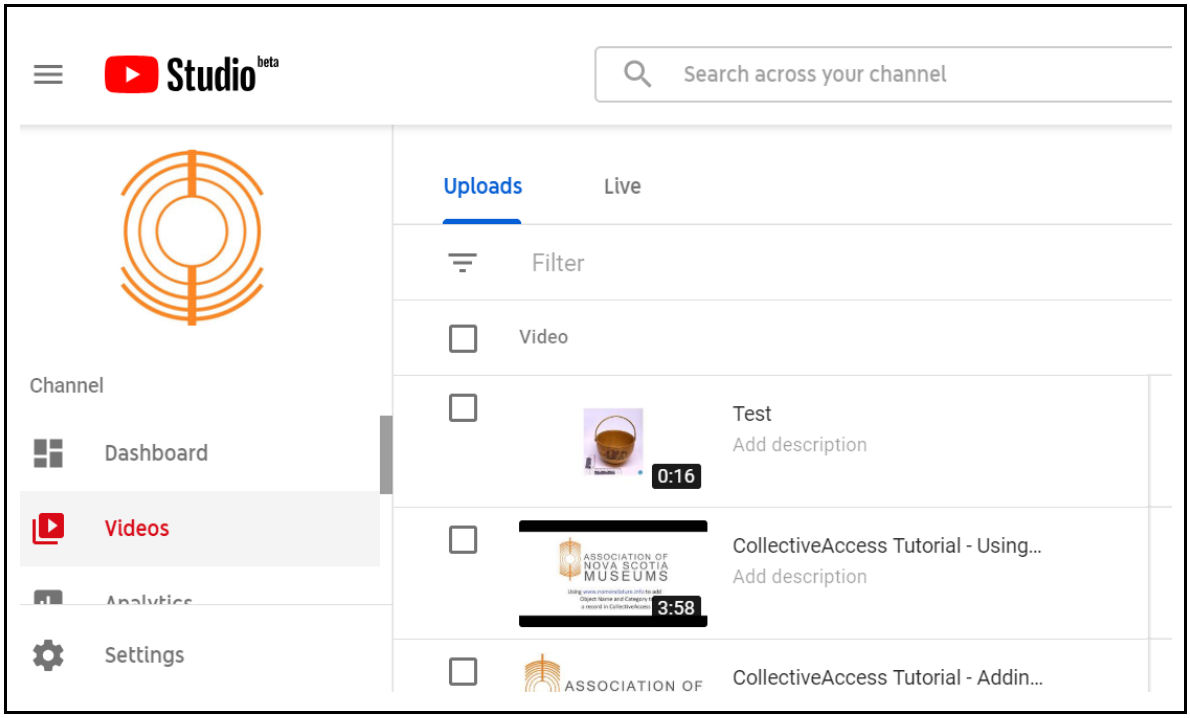
If you choose the YouTube export option, the system will prompt you for your log-in information, and ask for a title and category for your movie. Remember to set privacy to ‘public’ so people can view the movie. You will be notified once your movie has finished uploading.



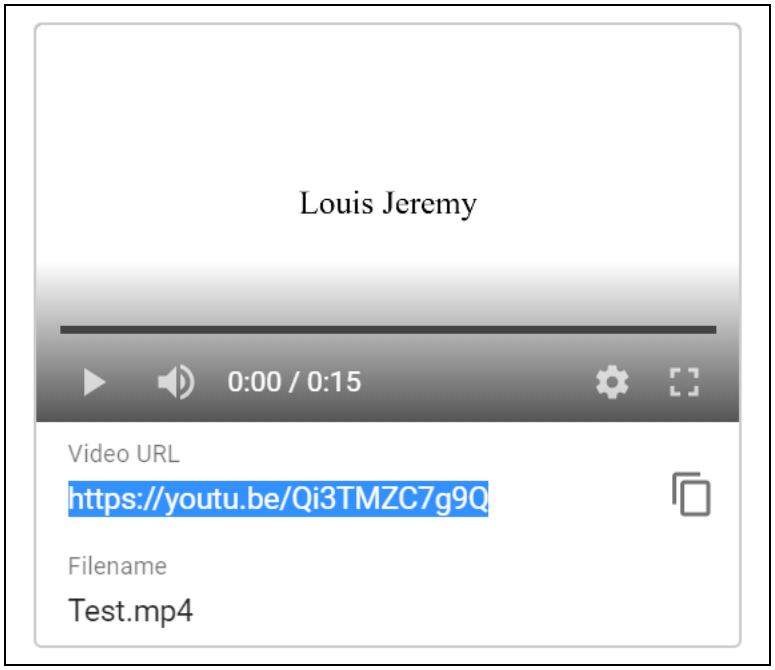
Step 4: Generate a Short URL and a QR Code



Once your movie has finished uploading, go to YouTube and log in to your account. A list of all your uploaded movies can be found by clicking on your profile picture and selecting YouTube Studio. Find the video you have just uploaded in the Videos List and open it by clicking on the title of the video.



Watch the movie through to make sure you are happy with it. If you are, highlight and copy the URL of the video, found in the address bar.



Generate a short URL and generate a QR Code by using a URL shortening and QR code service, like QR Code Generator. Alternatively, you can complete this in two steps using Bit.ly to shorten

the URL and QR Code Monkey to create the QR code. Print off the code, place in the museum, and you're done!

Tips for Shooting Video

Know your equipment
Some of the first video we shot was done using an iPhone. While the quality is great, it was discovered after the fact that the phone was held the wrong way during filming. As a result, all of the video from that day was sideways, and turning it was a major technical hassle. The lesson to take away from this? Before you're planning on recording anything, take a few test shots with your camera and upload them to your computer. Spend time familiarizing yourself with how everything works: how to record, stop, playback, and how long your camera will let you record. Then, when you're shooting the real footage, you won't risk making small errors that will cost you a lot of time later on.

Be Consistent
It is a lot easier to learn how to deal with just one set of equipment, file formats and software than to have to deal in multiples. Find one camera and stick with it.

Test Before You Delete
This might seem obvious, but keeping it in mind can save you major headaches down the road. Never delete anything from your camera without making sure it is properly uploaded to your computer. Video files are big and prone to file corruption when you move them from your memory card to your computer. Use the software that came with the camera, or if you are directly moving things from the SD card or other media, be sure to copy and paste rather than drag and drop. Then, watch the file all the way through to make sure that both the audio and video have transferred properly. If not, play back the file in your camera to make sure there is not a problem with the video itself, and then try again.

Back Up Your Files
It is important to back up your files. This can be done a number of ways. Considering off site or Cloud storage is important. It is much easier to take this extra step than it is to try and recover something that has been deleted, and you never know when you will want to revisit something that you shot previously. This is especially true for things like oral history interviews, which become a part of your collection.

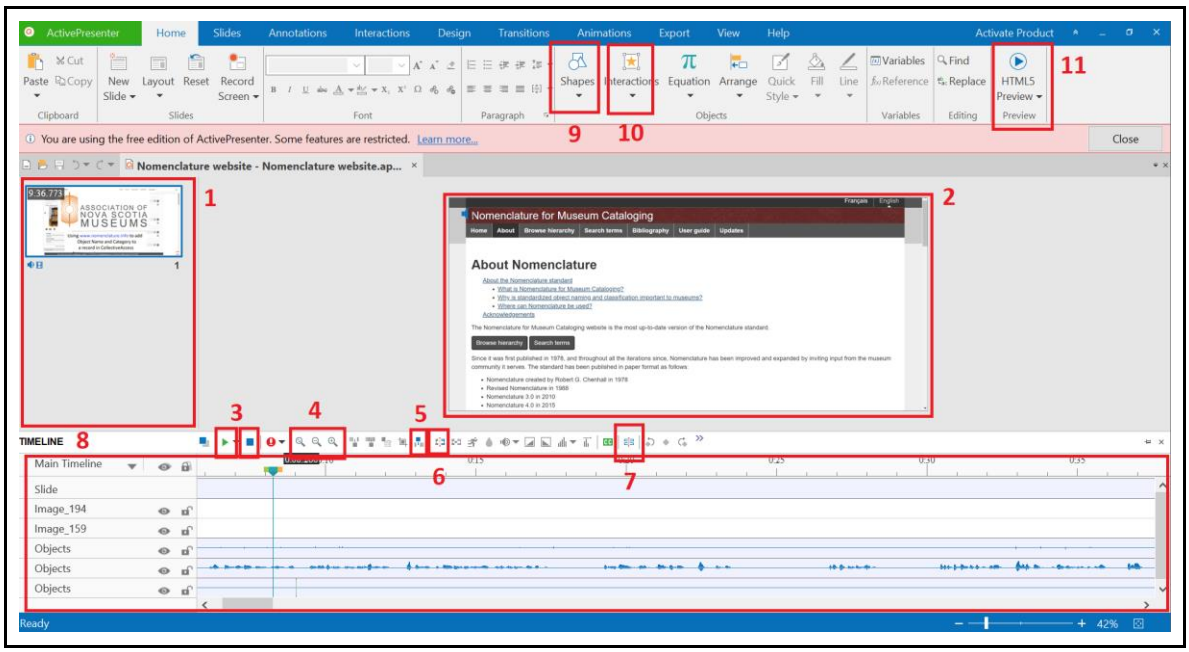
Bring Extra Everything
Make sure you have extra batteries and memory cards, and that your batteries are fully charged and your cards are empty BEFORE you start to shoot. Nothing is worse than a camera going dead right in the middle of something exciting.

Shoot with a Story in Mind
Have an idea of what you want the finished video to look like before you start shooting. Make a list of the shots you need and how they will fit together. This will save you headaches when you're editing and also help make sure you don't miss anything or need to do re-shoots.

Editing Video in ActivePresenter 7

There are a number of free software programs available to edit video. ActivePresenter 7 offers a number of useful features for editing, therefore, the instructions listed below are for this software.

Understanding the Timeline View



1. Slides Window
Shows all the clips available in a collection. This window is where you cut down larger files into smaller chunks. Any supplemental photos and audio you import will also appear here.

2. Preview Window
Previews photos, video clips, audio files and your edited movie.

3. Playback Controls
Play and stop, preview all, or preview from current slide.

4. Zoom Buttons
Zooms in and out of the timeline.

5. Insert Time
Insert time by duration (ms - milliseconds) if needed.

6. Split Audio/Video Objects
Splits the audio and/or video clips in the current slide.

7. Split Slide
Splits the previewed clip into two different slides at the selected point.

8. Timeline
Clips from the clip window appear here to begin constructing a movie.

9. Enter Shapes
Shapes, like arrows can be added to the video to enhance visuals/direction.

10. Interactions
Additions, such as text can be added to the video.

11. HTML5 Preview
Preview video as it would appear in HTML5.

Loading Files to Edit

ActivePresenter 7 supports many video formats, namely MP4, MKV, WMV, FLV, AVI, and WebM. The first step of editing video in ActivePresenter 7 is to load the raw files that you shot with your camera. To add video files from your computer to projects, do one of the following:

Open the Annotations tab, click Videos and then click From File. Drag an existing video file from Explorer into the Canvas. After that, the selected video will be inserted in the slide that you are working with.

Source: https://atomisystems.com/tutorials/ap7/adding-videos-activepresenter-projects/

To open an existing project, select ActivePresenter 7 > Open Project.

ActivePresenter 7 cannot edit every type of video file. For instance, it cannot load .mov files, which are a common format in which many cameras shoot. If you are having problems loading files into ActivePresenter 7, you must use a video conversion program to translate you files into something that WMM can read, such as an .AVI or .WMV. Some free suggestions for file conversion software can be found in Appendix C: Web and Software Resources.

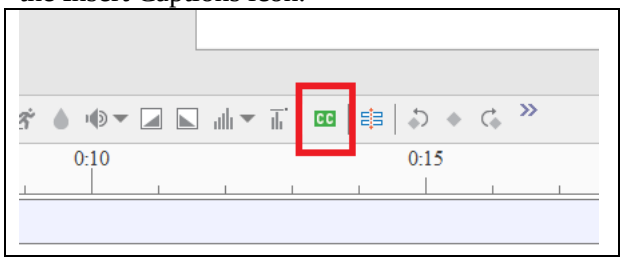
Turning Files into Clips
In most cases, the video you have shot will need to be edited to take out parts that you do not want or need or to reorder and combine different scenes. To do this, the files you have imported need to be cut down into a series of clips.

To make a clip, preview the file you have imported. It will begin playing in the preview window. When it has reached a point where you would like to split the video file—for example, right before a new question is asked in an oral history interview—pause the video by pressing the stop button or the spacebar and click on the “split slide” button. Continue doing this until your video is transformed into a more manageable series of video clips.

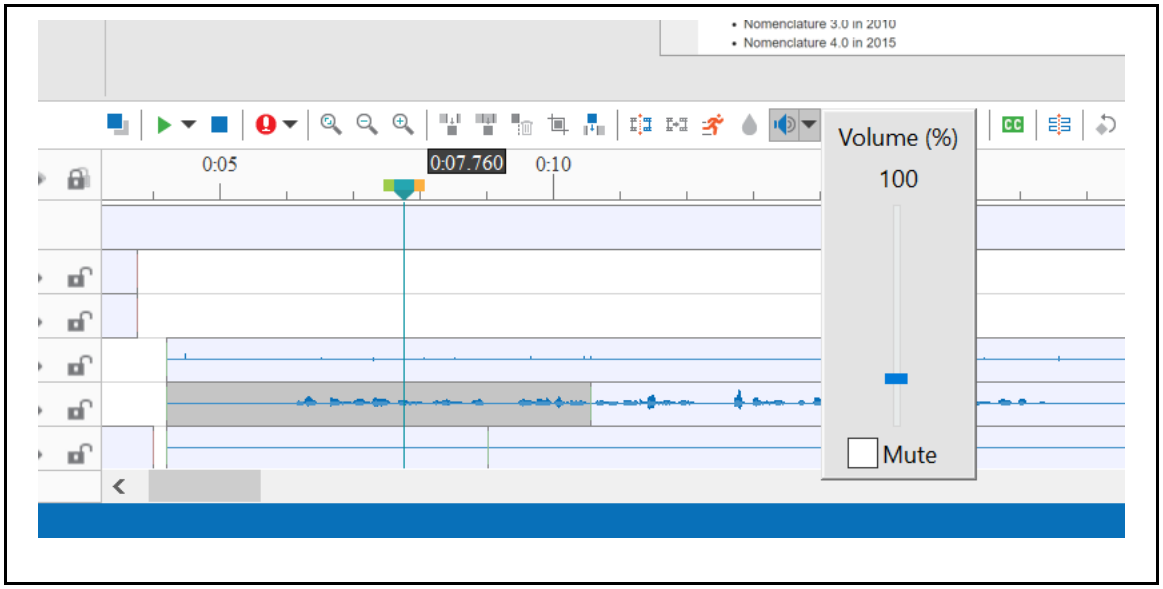
Additional still images or audio files can be brought into the clips window by using the same steps outlined above. These files will also show up as clips in the Slides Window.

Turning Clips into a Movie

To begin building a movie, arrange your clips in the correct order in the Slides Window. Transitions between clips and special effects can be added by navigating to the Transitions and Animations tab. Captions and text slides can be added by selecting Interactions > Text Box. Or, the Insert Captions icon.



Sound on clips can be muted or have its volume adjusted. If you would like to adjust the sound from a particular clip—for instance, to use as narration over a still image—click on the clip in the timeline and, first, isolate the clip by using Split Audio/Video Objects, then, adjust the volume for that section of audio. The volume can also be muted by checking the box by "Mute."



To preview your movie, click on the beginning of the time line and press play in the preview window or press the space bar. The video can also be previewed using HTML5 Preview.

Saving Your Movie

Clicking the "save" button only saves your project. The file will be saved in .approj format. This is helpful for when you wish to come back and finish editing a project later; however, in order to save a full movie file that can be uploaded to to the web, you must select Export > Video from the top menu bar. Choose to export the file to your computer. The default setting is MP4 but other formats available include: AVI, WMV, WebM, and MKV. Adjust video size accordingly.

Audio Editing Tips & Tricks

1. As with video, it pays to know your equipment. While microphones come in all shapes, sizes and price ranges the quality of a mid-range USB mic or stand-alone recorder should do the job for most voice recordings. Make test recordings. Many things can negatively effect sound quality, including room acoustics, ambient noise, voice levels, and even humidity. Try recording in different parts of the room and play with the distance between the microphone and the subject until you are happy with the sound quality. Listen to test runs with headphones to better hear what they sound like.

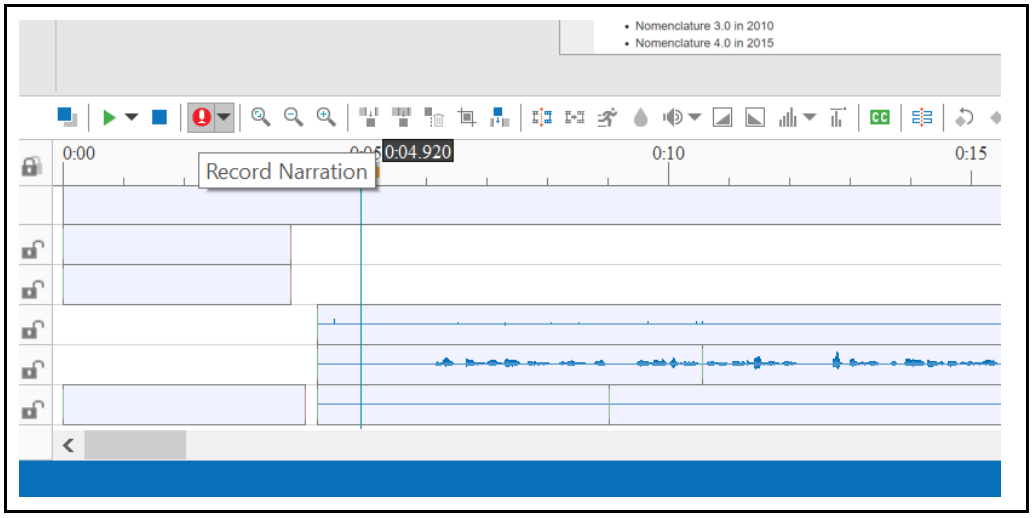
Be aware of wind when outside and try to aim for calm weather, or conduct the recording in a shelter. Some noise attributed to wind is almost inescapable in outdoor settings, but mic covers and “blimps” can be used to help deaden the sound.

2. Make sure to save your audio in an appropriate file type. .Wav files are high quality and represent the full spectrum of sound. However, they are very large, and not suitable for online use .Mp3 files are the usual Internet standard. Some quality will be lost, but the file size will be much smaller, and more programs are able to play back the files.

3. When outputting your audio it is important to note the decibel level of your master volume. A decibel (dB, db) is a unit used to express the intensity of a sound wave. dB is a measure of amplification not volume, so 0dB means that the signal is in its original, unaltered state. Get as loud a level as you can when recording. If you are seeing red then back the volume off or move the mic further from the sound source.

Editing Audio in ActivePresenter 7

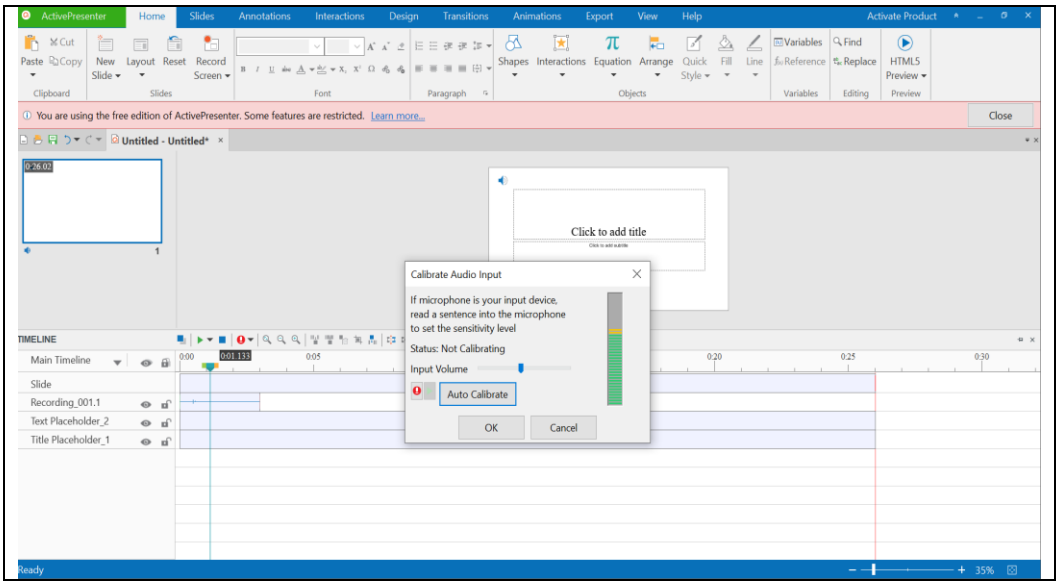
This guide will cover basic techniques for recording and editing sound in ActivePresenter 7. However, most of the basic principles apply to any audio editing program that you have access to. If you require a free program, which is compatible with both Window and Apple, please see Appendix C: Web and Software Resources. In ActivePresenter 7, narration can be recorded in an existing project by clicking the red “Record Narration” button.



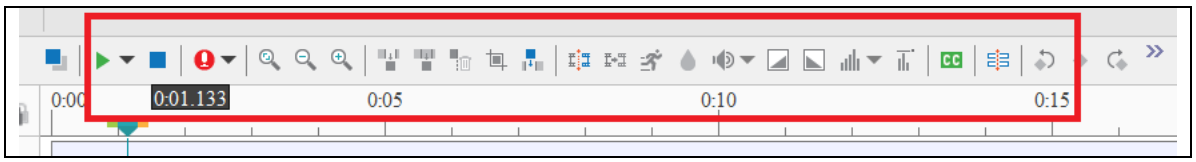
To record audio in a new project, open a Blank Project, adjust the length of slide to accommodate the length of the audio recording, and choose record narration (as seen above).

Recording Options

By clicking the arrow next to the red narration icon, the Recording Options panel will appear. This panel shows the input device, input volume, and calibrate audio input levels. You don't want the signal to go from green to red. This means you are "peaking" and the signal strength will cause distortion in your sound. Try to aim as close to this without crossing into the red for the fullest sound.



Continue to use the controls in the tool bar to edit.



Appendix C: Web and Software Resources

QR Code Readers

Phone readers:

BeeTagg: http://get.beetagg.com

- Scans QR and BeeTagg codes

ScanLife: http://getscanlife.com

- Scans QR, DataMatrix, ScanLife and traditional barcodes.
- Works on most phones; Requires iOS 10.0 or later. Compatible with iPhone, iPad, and iPod touch.

Many more QR code readers (of varying quality) can be found by googling, or by searching the Google Play store, iPhone app store, BlackBerry AppWorld and the Android Market.

Additionally, most BlackBerries now come with a code reader pre-installed, which can be found under BlackBerry Messenger > Scan a Group Bar Code.

Desktop Readers:

QuickMark for Desktop/Webcam:
http://www.quickmark.com.tw/En/basic/download.asp#QuickMark_WebCam

- Need to register, but individuals may obtain a membership with the Service without paying a fee
- Uses your webcam, allowing you to check QR codes without a smartphone
- Does not support Windows 8.x or above

ZXing Decoder: http://zxing.org/w/decode.jspx

- Allows you to decode QR codes from the image itself
- Handy if you have neither a webcam or a smartphone

Other Helpful Web Resources

Opera Mini Simulator - http://www.opera.com/mobile/demo/

- Allows you to preview what your content will look like on phones running the Opera mini browser

ActivePresenter 7 help home page:
https://atomisystems.com/tutorials/ap7/

- Troubleshooting, how-tos and more.

Avery - http://www.avery.com/avery/en_us/

- Online label generating software

Pew Research Center 2010 report on Smartphone usage in the US:
http://pewresearch.org/pubs/1654/wireless-internet-users-cell-phone-mobile-data-applications

- Shows that "Six-in-ten American adults are now wireless internet users, and mobile data applications have grown more popular over the last year."

Software

Here are a variety of useful (and free!) programs that we used during our project:

ActivePresenter 7: https://atomisystems.com/activepresenter/
For basic image manipulation, cataloguing and especially creating video slideshows.

Audacity: https://www.audacityteam.org/

- An easy-to-use, multi-track audio editor and recorder for Windows, Mac OS X, GNU/Linux and other operating systems

Free M4A to MP3 Converter: http://download.cnet.com/Free-M4a-to-MP3-Converter/3000-2140_4-187723.html

- Converts M4A audio files into more easily editable and common MP3 and WAV formats.

Free Video Converter 1.0.4: http://www.tucows.com/preview/736604

- For converting files from one file type to another, to ensure compatibility with editing software and smaller sizes.

GIMP: http://www.gimp.org/

- Advanced image editing

LAME MP3 Encoder: http://lame.sourceforge.net/

- Allows Audacity to save files as MP3s.
- Instructions on how to download and install can be found on the Audacity website: http://audacity.sourceforge.net/help/faq?s=install&i=lame-mp3

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Appendix D: Glossary

QR Code

Short for "Quick Response Code." QR Codes are barcodes which can be scanned with a smartphone camera and used to direct visitors to Internet content.

Smartphone

A cellular telephone that provides far greater computing power than conventional cell phones. They offer full Internet access, the ability to install third party applications and often have touch sensitive screens. Popular smartphones include the iPhone, BlackBerries and Android phones.

Data

When a smartphone is not connected to a wireless Internet connection, it can still access the Internet by drawing off of a data plan which is incorporated into a monthly service plans. These plans have caps, and often steep overage fees, but allow the user to access the Internet from almost anywhere.

4G

Short for "fourth generation," it is a mobile phone standard, succeeding 3G. 4G provides ultra-broadband Internet access and allows for faster communication and access to the mobile web through a data connection.

WiFi

WiFi enabled devices, such as laptops and smartphones, are able to wirelessly access the Internet when in the range of a wireless router's signal.

App

Short for "application," apps are computer programs downloaded to a cellphone, which can perform a wide range of device-specific functions. Apps can be anything from standalone games to alarm clocks to city guides and more. QR code scanners are apps.

Mobile Web

The mobile web is the Internet as accessed by a smartphone.

Decibel (dB, db)

A unit used to express the intensity of a sound wave. It is a measure of amplification and not volume.