

Use of Software in eTwinning

Introduction

In the next few pages, we'll make an outline of all the software applications and Internet services that we use in the Eastbourne 8 eTwinning project. Each section explains how we use the application and its features, to create our content, and how we publish this for public viewing.

Also included is some technical information, and a description of the inner-workings of what we have developed, and also some explanations to help the understanding of how we use the software and web applications.

Along with this is some description of the software design, if you are not familiar with it. The software applications used and explained include SwishMax, Audacity [including RazorLAME and dbPoweramp], OpenOffice.org, Adobe Macromedia Dreamweaver, Adobe Macromedia Fireworks [including PNGGauntlet], Windows Live Messenger, and Microsoft Office PowerPoint. These "software applications" have been downloaded onto a computer, and are involved in the process of creating the content for this project.

We have also included the web-based services and applications that we used, including Freedomain.co.nr and Wordpress. As opposed to software applications, web-based applications are a type of software which is only accessible through a browser. A web service, allows us to expand and improve our actions from an online perspective.

Please read on, each section is thoroughly explained and is written in an easy to understand manner.

Software

SwishMax

Adobe Flash Animation Software

SwishMax is the most frequently used application in the project. It allows us to develop animated movies for the Internet, that help us illustrate our ideas to the partner schools and other audience. In this case, we use the software to present the questions to the other schools for them to answer in an interesting and attractive way. We also use the software to illustrate replies to questions from other schools, and as replies telling them if others answers to our questions are correct or incorrect.

Looking at the application from a technical point of view, it uses Adobe Flash, which is a platform that is widely used to



As shown in the first screenshot, SwishMax contains a timeline interface, and has objects drawn into the scene. Effects can change the different items. It then exports as a .swf file, for use in a webpage as shown in the forward screenshot.

make embedded animated applications on websites such as advertising and games. SwishMax allows us to easily manipulate the technology and use it in our eTwinning project to present our ideas in an enjoyable way to a wide audience.

We have free access to a web server which allows us to distribute the files this program exports, through the features of Adobe Macromedia Dreamweaver, which are explained in the rest of this document. The main advantage of this, is that it allows us to easily share what we have done with other parties which are outside the eTwinning group, and also because it allows access from any Internet-connected point, without the need to login to any system.

The most dominant feature of SwishMax is the timeline, which is similar to what is found in more advanced Flash editors. All objects, such as text, images and vectors on the stage, contain various effects which animates these objects. Once the timeline goes to its point, the animation is displayed on the stage. The stage is the area where items are drawn out on, and viewed when the movie is played. The animation effects include fading and transformation, allowing the us to create very expandable and varying effects. Scripting allows us to move between points, which we can develop to give the user a way to make things change, creating some interactivity with the stage. Changes that the user makes and sees, are basically done by stopping the timeline, moving the point of what the user sees, and starting it again with an effect or action that takes place, animating that change.

Music is also able to be embedded in a .mp3 format which plays while the animated sequence is running. The software we used to edit music is Audacity, which makes it usable in this application is explained in further reading. We can then add scripting, to let the user play the animation again, which moves the user back to the start of the timeline and starts the music again. Another implementation of scripting is making a "preloader" which displays a progress bar and other information while the animation downloads.

The preloader script that is used, operates by only loading the preloader animations, sound and scripting into the browser. Once this first group of data has been downloaded, it then continues to download the rest of the animation and its content from the Internet, and keeps the user updated by an animated progress bar which fills as the movie progresses to load. It also displays information such as the size of the movie, and how much as already been downloaded in kilobytes. The main reason why we implemented this into the animations we

Summary of File Types

Adobe Flash (.swf)



sanafe_ceola
Flash Movie
670 KB

This is the file which contains all the video, audio and scripting for the animation. It cannot be played unless its specially set up to do so, without being embedded into a webpage.

Webpage / HTML (.html)



index
HTML File
1 KB

This is the file which the above .swf file is embedded into. It is then uploaded with the .swf file onto a server where it becomes accessible through an address.

Adobe Reader PDF (.pdf)



Garden Answer Launchpad
Adobe Acrobat Document
21 KB

Adobe PDF is used to upload links on the eTwinning Twinspace, the centre point of the eTwinning project on the Internet. People can open these files in Adobe Reader and can click on the link to view the movie.

Audio Files



These Walls
Teddy Geiger
Underage Thinking



thesewalls_wav



thesewalls_eb8remix
Teddy Geiger
Underage Thinking

There are three types that we have worked with. The first of which is the WMA format, which was developed by Microsoft. This is what the music starts off as before it is converted for editing.

It is then converted to WAV which can be used inside Audacity.

Audacity takes the WAV and makes all the changes. The application then converts it into the MP3 format, where it can then be imported into the animation.

make, is to keep the user with up-to-date information while the animation is loading, instead of simply leaving the viewer with a blank screen with no information.

Once a movie has been created, and the rest of its media attached, it is then exported into a format called .swf. This is the name of the Adobe Flash format that encapsulates all the data associated with the animation. This includes the animation itself, its music and its scripting. The movie is spilt into scenes which keeps different elements of the entire movie separate. For example, the preloader is kept from the main animation, and so it knows what to load after the preloader has started.

The tools used inside SwishMax that can be used to draw items include various polygons, squares and circles, and lines. All of which can be coloured with a solid colour or with different gradients, each using web-based colour codes. Effects and transformations can be applied to these, and can be manipulated into groups or sprites which allows us to use them dynamically, similar to having an animation inside wider animation. This allows interactivity to one part of the movie, without affecting other parts of the movie. Text can be created, and the previous graphic manipulation can be also applied to text. Also, to both, scripting can be used to allow it to interact with the movie and the user.

Images can also be imported into the stage. Use of images is kept to a small amount to reduce the file size, allowing the viewer to watch the animation quicker, which keeps down the amount of time needed to download. As an alternative, shapes are used, which are drawn out in SwishMax. These act as vectors, which is information that the computer takes to draw out the animation. These are typically smaller than images as vectors are simply a set of text-based data that the computer processes.

We used the Adobe Flash format for its visual effects and scripting, allowing for very expandable interactivity for the user in what we make. Also as the application is very easy to use and works powerfully with the Flash technology. Widespread use, with a majority of the worlds Internet-connected computers have the means of using these files, having its player is available free of charge was a major decision point. Other animated formats such as Microsoft Office PowerPoint, and video files cannot be played without specialised software, the latter having a larger file size. The .swf file, which encapsulates all the data needed, and is then taken and uploaded to the server that we use, and is then embedded into a .html file.

HTML is the computer language that is widely used to create webpages. We use Adobe Macromedia Dreamweaver which writes the HTML code for the browsers, embedding and attaching it into a webpage. We cannot send the .swf file directly as most computers will need specialised software or to be specially configured to open it outside of a webpage, making it easier for a viewer to display our animations quickly.

The HTML file, which is the webpage, and the .swf file, which is the animated movie are now linked. They are both then uploaded onto the Internet using the upload feature of Dreamweaver. A web address is made which gives anyone with it, direct access to the animation. In the end, people around the world can access the embedded movie, through that address, and enjoy the music and video, giving that the computer has Internet and is set up to play sound and has the player installed.

As we use freely provided webspace, we use another free service called "Freedomain.co.nr" which will be explained later. This shortens the longer web address which is provided by the hosting company, and replaces it with an easier to remember address. It additionally makes it appear cleaner and more professional.

When we send it to the eTwinning Twinspace, the main protocol for sending and receiving media, for the partner schools to visit, a link is placed inside the Adobe Reader .pdf file which is another widely used document format. At the other end, people can log onto the eTwinning system and open this .pdf and click on the link to view the animation in its entirety. The purpose of making a .pdf file to send has two main reasons. The first is that it provides a "launchpad" that can be uploaded to the eTwinning Twinspace. This keeps all the related files of the project kept together. We do this as it also makes the file more attractive, allowing us to add pictures and other material, instead of simply giving out a Internet address. Technical reasons, previously stated also require us to do this.

Each animation we make, follows a theme that the question is based around. Most of the concepts follow the theme, and the group comes together to put forward ideas for animations that we think would be the most entertaining.

Audacity

Audio Editing Software

Audacity is software which gives us the capability to edit a sound file in various ways, again in a timeline interface. When a sound file is opened, it appears as a wave bar, and we can drag and select, and therefore edit the music. The main purpose that we use this for, is to cut down longer songs into usually, what is a 30 second soundtrack. The features allow to also mix our own versions of songs for this purpose. Different pieces of software is used along with Audacity that will ultimately allow us to import the music into SwishMax.



The drag and select interface lets us easily copy and paste different sections of the song, where we can move and edit the audio, and use effects such as fading and speed change. The play/pause controls can play back what is selected, generally making editing easier and more streamline.

Audacity can import audio, and allow us to edit and remix audio, and play it back inside the application. We can then export the edited files, and place them as a soundtrack in animations made in SwishMax.

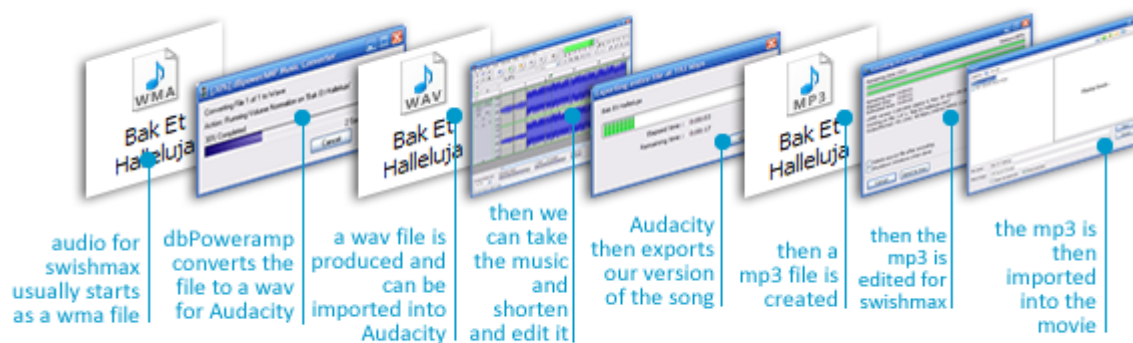
The application then allows us to export the file into a .mp3 file, which is the file which we would widely associate, and is used on MP3 players or other digital media devices. Once the .mp3 file has been made, it can then be imported into SwishMax as a soundtrack. From that point, it then follows the file and plays during the main animated part of the embedded Adobe Flash file.

Looking at the additional software used, we sometimes find that technical problems can arise when we export using this software. It is only a minor problem, which occurs because of the incompatibility of the "sampling rate" of the MP3 file which is produced, when imported into SwishMax. Another freeware application, **RazorLAME**, can convert the sampling rate to the compatible rate which is usable in SwishMax. Also, because most of the music we use is stored in

.wma format, it requires conversion into a format that is usable in Audacity. **dbPoweramp** converts the WMA format into the WAV format which can be used in Audacity. When it is exported, it would then be in a MP3 format for use in SwishMax.

The process of converting, editing and importing the music is displayed in the diagram below. Looking left to right, this process is shown from starting off with the file in its original format, ending in SwishMax as it is imported.

Editing Music in Audacity for SwishMax



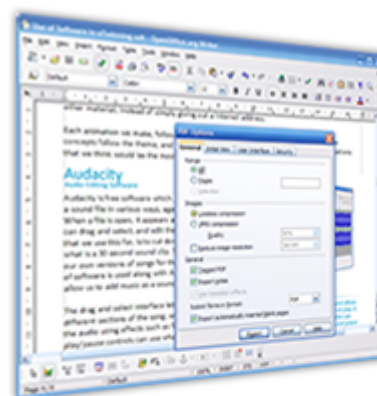
The above shows the process of editing and importing music to use in our animated movies. The above uses the song Bak et Hallelujah by the Kaizers Orchestra, which was recommended by a member of the Eastbourne 8. This was edited and was used in our answer to a question with a rabbit theme.

Windows Media Audio (WMA) files are high-definition sound files, which have a higher data rate, therefore creating a bigger file, and it also will not import into Audacity. We use dbPoweramp converter as it transfers it into a WAV format. This format is significantly bigger than WMA, but will work in the editing application. Audacity converts the WAV format into MP3, as the latter format has a smaller file size, which cuts down on loading time when embedded in the animated file, but still retains a high quality audio to the human ear.

OpenOffice.org Office Software Suite

OpenOffice.org is an equivalent to the applications featured in Microsoft Office, including a word processor (Writer - Word), spreadsheet (Calc - Excel) and presentation (Impress – PowerPoint) software. This is instead used by some members of the Eastbourne 8 as a home-use alternative to Microsoft Office, but its main purpose in the Eastbourne 8 eTwinning project is to produce the PDF files which are used as launchpads as explained in the final paragraphs on SwishMax. A few of its advantages include the cost, saving around £290 for the full Adobe Acrobat software, where OpenOffice.org will create the same results using free software.

The main application that is used in eTwinning is its word processing software, OpenOffice.org Writer. The PDF files are drawn out similar to making a normal document in any other word processor, with its capability being the same, if more, than during the use of Microsoft Office



OpenOffice.org is a suite of applications similar that of Microsoft Office. The most frequently used application is its Word Processing, named **Writer** which we use its 'Export as PDF' feature to create launchpads to send to the eTwinning Twinspace.

Word. We usually draw it out in a landscape format, with a Internet hyperlink placed in the centre, to where the animated video, explained in the SwishMax section is placed. We also include a small picture from the animation to allow the viewer to quickly recognise the animation.

Once the file has been made, it is then exported as a .pdf file using the “Export as PDF” feature in the applications File menu. We save the file to the appropriate location, followed by the ability to change different features of the exported file, such as the quality and security settings. Similar to the Adobe Flash format used with SwishMax, all the parts of the document are carried in a single file. Also similar is the widespread compatibility of Adobe PDF, only requiring the reader to be installed on the computer, which is available free of charge from Adobe, and is widely pre-installed onto most computers.

The file would then be transferred onto a memory stick or by download via our server, if not already on our network at school. When on the school network, the project leader would log on to the eTwinning account for Eastbourne School, and open up the task Twinspace. The website would then allow us to upload the PDF file into the system to where it would be accessible to the other schools which take part in the project. On the other end, the other schools can open up the file from the system in their web browser, and click on the link which transfers the user to our animation on the Internet.

Unlike the .swf format that the animation is created in, the .pdf format is able to be downloaded and viewed correctly straight out of the box. If we used a format which is proprietary to a single piece of software, it would require viewers to download a proportionately bigger file, or pay for the software that would be able to immediately handle the format.

Adobe Macromedia Dreamweaver

Website Development Software

Dreamweaver is the main application used to transfer the files required to the web server. This allows people from around the world to access our eTwinning content on the Internet. The server gives us a web address or URL that can be distributed through the eTwinning system to the partnered schools, or through means such as email or instant messaging. An example of how we do this in the eTwinning system is in the Adobe PDF format which was previously explained.

It works with our server at phpnet . us by using FTP which stands for File Transfer Protocol. This is the standard way of transferring files over the Internet for viewing in a browser. It works similar in the way to what we see in the folders in Windows. The structure of the server contains a “eb8” section which contains directories for each of the files we want to distribute to the partner schools, and any other people who are interested in looking at what we have created. Also included is the files for the Wordpress-powered blog, where information is available in the Wordpress section.



Adobe Macromedia Dreamweaver provides us with all the tools required to interact with the Internet. This includes design and coding as shown in the background, uploading to the Internet, as shown in the middle, and a structure for organising files.

Each directory is named appropriately for what it contains. An example, looking at a question that we created which its theme was about “discounts of food at school lunchtime,” was named `discount-question`. Another example was for a question that was sent to us from Poland, asking us to calculate the amount of tiles needed to pave a specific area in a garden. This was therefore named `garden-answer`.

Inside these directories, two files are usually contained. The first is a HTML file, the technical name for a file which is used as a webpage, and is also the language used to code webpages. This is called `index.html` which allows us to keep the address shorter. This means that instead of typing out the whole address, which would be `/discount-answer/index.html` it would instead omit the `index.html` and go directly to the main file without typing the extra words.

The second file included is the `.swf` file, the output file from SwishMax which is the animation that we want to display in the HTML file. This file is linked into the HTML file to display inside of it in the browser. So, if you were to open the HTML file, the `.swf` file would play inside of it, along with its scripting and sound.

Along with this, we use the coding feature of Dreamweaver to write the code that would embed the animated files into the HTML. This is significantly simpler than writing the code by human means, and only requires a drag-and-drop action to embed it into the HTML. Once this is done, and both files are saved into the same directory. Then the software FTP module will “synchronise” the files on a computer, to the server. It is synchronised because an exact copy of the server structure is stored on a computer, and is managed from there, and any changes are reflected by synchronising onto the remote server. It is safer than conventional FTP, as it provides a constant and available backup, in case of problems with the remote server.

Once the synchronisation has completed, the content will be able to be accessed from any Internet-connected computer in the world, via a web address.

Adobe Macromedia Fireworks

Image Editing Software

Fireworks allows us to edit and create images to use with SwishMax and the Internet. Although it has not been used much in eTwinning animations sequences, it was used to create objects in the “Lunchtime Discount” question. It works similar to the interface in SwishMax, but is more advanced and is more orientated for more detailed graphic creation and editing. We can then export it for use in SwishMax, and can be used with the scripting and effects in the application.

Features include brushes, shapes and text, including a range of filters and effects which can be used to manipulate the visual style of images. A notable use of Fireworks was to add a shadow and border to a photograph taken of the Eastbourne 8. This is easily done inside the application, and its results can be exported into a `.png` file, or can simply be copied and pasted into SwishMax to use in animation.



Adobe Macromedia Fireworks gives us the capability to edit and create graphics in a way that is marginally more powerful than in SwishMax. These graphics can then be saved for use in other apps, or on the Internet.

Before we started using SwishMax to create animations for questions and answers, on our very first question, we used Fireworks to create a design that we would send with our question. The basis for each of our future designs, such as the general style that we use, the fonts and the colours were carried through onto the animations made in SwishMax. The file made in Fireworks was copied and pasted into OpenOffice Writer and saved as a PDF file, similar to the launchpads we make for the animations.

The graphics made can be also used with our Eastbourne 8 Blog, by using the Dreamweaver FTP module. The Wordpress blogging software can take the address of the image, and import it into the editor, similar to what we see in desktop word processing software. The graphics can be made more compatible for the Internet, by the use of the **PNGGantlet** software, which compresses these graphics, leading to shorter load times.

Windows Live Messenger

Instant Messaging Software

Instant Messaging is a very useful tool in this project, especially when collaborating or simply looking for or sharing ideas. The service works through an application on the desktop, along with an web-based account which allows the use of the Windows Live suite of online services. The main two features that are used, is the basic IM capabilities, allowing members of the eTwinning group to collaborate and share information and ideas between two people, or in a group of up to around twenty people. This is mainly using text to explain ideas.

The other main feature used is the file transfer. This gives us the capability to send files which we have recently worked on, such as draft versions of the animated sequences, or on what music we may use as background on an upcoming animation. It works simply as dragging a file into a conversation, which when accepted, is sent to the other person with the file in its entirety. The recipient can view or edit, if the file type allows it, and the new version can be sent back to the person who originally sent it, or to other people.

Other features that we take advantage of for the eTwinning project, include the webcam, which allows two people to show ideas quickly to each other by focusing a webcam on the screen, or on a paper copy of an item, such as a printout on a piece of paper. We have also found that this is an effective way to see a reaction to a idea from an animation. Also, quick voice messaging allows us to set that feature up to take sound from the speakers. This means that we can quickly send a 30-second clip of audio, instead of taking the time of sending the whole file, which could take longer. This is to keep down on waiting time, which can be quite tight. This is useful when we want to see whether that a piece of music would go together well with an animation.

As communicating ideas and information is key, the offline messaging feature is very useful, as it allows us to communicate with each other, even if a key person is away from their computer. It



Windows Live Messenger allows the group to collaborate over the Internet through instant messaging. Useful features include file sharing, webcam, voice messaging and offline messaging.

works similar to if a person was at their computer, or “online,” but instead sends all messages to the person when they are online, even if the sender is offline. This allows then to act on the messages and carry out required tasks, that they may need to do, and send them back to the right person when the are back online.

Microsoft Office PowerPoint

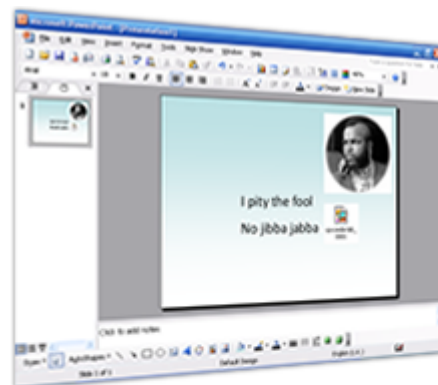
Office Presentation Software

Before we started to use SwishMax, we started off by using Microsoft Office PowerPoint to illustrate our questions and replies by using its basic animation features. This was done only once, in our very first reply which featured video of footballer Wayne Rooney, as its theme was based around him and his football. This is where the concept of having animated responses and questions originally came from.

Tools we used with this, include AutoShapes and text, and by also using the ActiveX controls that could be used to add different elements to the presentation. This included the implementation of a Windows Media Player applet which would allow us to embed streaming video inside of the presentation that was appropriate to the theme. It would additionally allow them to take advantage of the design of WMP, by allowing them to play, pause and seek inside the presentation.

As animated effects are present in only a basic amount, we thought that by using Adobe Flash, that we could make what we do more interesting to more people. We also encountered problems with the embedded video, on our first attempt. The problem was that the video needed to be relative to the presentation to play, meaning that the video file itself, and the presentation needed to be in the same folder, which was a problem that could only be resolved by using a direct link to the video on the Internet.

This could be a problem if the video was pulled from the Internet in the near future, which would prevent people viewing it then from looking at it in its full entirety. Due to this setback, and for the features and capabilities that SwishMax incurred, we made a switch to SwishMax.



Microsoft Office PowerPoint was our original means of creating the animated sequences that we use for eTwinning. Due to some limitations, we decided to make a switch to Adobe Flash technology.

Web-based Services

Freedomain.co.nr

URL Address Redirection

This service works by creating a free account that uses the domain .co.nr. It is provided free of charge from the country of Nauru, which is too geographically small to have the resources that are able to connect to the Internet. It works by masking over the longer address and replaces it with the shorter .co.nr address or URL.



The account that the Eastbourne 8 uses is registered as www.eastbourne8.co.nr. This address simply refers to the root of this address <http://cpx1.phpnet.us/eb8>. Anything that follows our eastbourne8.co.nr address will refer to a location that is relative to the longer address. The service basically masks over the longer address, allowing us to have a shorter address, which is different than the address provided by the host.

This means if the user accessed <http://www.eastbourne8.co.nr/garden-answer> then they would be directed to <http://cpx1.phpnet.us/eb8/garden-answer/>. The same would apply to any other address accessed. The user would still see in their web browser that they were at the shortened address, but would actually be at the longer address.

We used this service, as its commercial side matched our needs in a number of ways. The first was its cost, saving us money on a paid domain, but same achieving the same results. The second was the amount of advertising required to use the service within their terms. All they required is a small button linking back to their website, and nothing more than that, which was a welcome change than that of similar services, such a .tk, which places popup advertising on homepages.

Wordpress

Self-hosted Blogging Service and Software

Wordpress is a web-based blogging tool that we are using to develop a blog to represent our project. It works by downloading a group of files, and uploading them onto our server, which then gives us an application to work with, over the Internet from any connected location. These files connect to a database which is hosted adjacent to the files. This database is called mySQL, and it stores all the changeable information associated with the blog, including settings, users, pages and posts. As of December 2006, we have not completely added content to the blog, which is available at www.eastbourne8.co.nr.

Each member of the Eastbourne 8 has access to edit any part of the blog, each having their own account username and password for security. Once logged in, they are presented with an “dashboard” interface that allows us to easily create, edit and delete parts of the website. Its editing module works similar to that of a word processor, with standard formatting features.

This service is fully dependant on our server, where related files and information are stored. People with accounts are only able to make changes to the blog, but anyone with access can view and comment on anything done on the blog, which is directly built into the design. Commenting can be also totally controlled through the blog dashboard.

There are no limitations on what can be done, which was a major attraction point for us to use the service. This total control is ensured as we run the inner workings of the blog, as they are hosted and controlled on our webspace. Design and content can be easily changed with a click of a button, and has a wide



Wordpress is web-based blogging software. It is accessible from any Internet-connected point, and is editable by any member of the Eastbourne 8 with their own account. Viewers can collaborate on anything made by adding comments to a page.

community of users, with a designs centre, and also a support forum. It is coded in HTML and PHP, which operates the website and CSS, which is a way of designing webpages and keeping the design consistent. We can easily use these programming languages to achieve a design a we had in mind. We can use the Adobe Macromedia Dreamweaver software with these languages, as its coding mode clearly displays the code to make it easier to create and edit.



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