

A bouquet of red tulips with green leaves is positioned on the right side of the image. The flowers are in various stages of bloom, and the leaves are long and pointed. The background is a dark, textured surface, possibly a wall or a piece of paper, with some subtle variations in tone and texture. The overall mood is elegant and artistic.

MULTIMEDIA AUTHORING TOOLS

The background of the slide is a photograph of bare, dark tree branches against a dark, overcast sky. The branches are thin and intricate, creating a complex web of lines. The lighting is soft, highlighting the texture of the bark and the delicate structure of the twigs. The overall mood is quiet and contemplative.

Definition

The multimedia authoring tools is a multimedia software development platform based on the multimedia operating system. It can help developers to organize various multimedia data and create multimedia application software.

What are they?

ADOBE ANIMATE



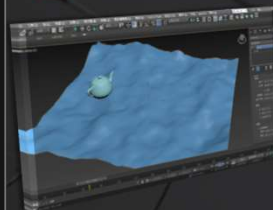
Animate just about anything.
Design interactive animations for games, TV shows, and the web. Bring cartoons and banner ads to life. Create animated doodles and avatars. And add action to eLearning content and infographics. With Animate, you can quickly publish to multiple platforms in just about any format and reach viewers on any screen.

PHOTOSHOP



Process and draw images.
Adobe's brilliant image and design software is at the heart of creative projects ranging from photo editing and composition to digital painting, animation and graphic design, it can also edit and generate video.

3DS MAX



Professional 3D modeling, rendering, and animation software.
Breathe life into environments and landscapes with robust modeling tools.
Create finely detailed designs and props with intuitive texturing and shading tools.
Iterate and produce professional-grade renders with full artistic control.

IFACTION



iFaction includes complete built-in scripts to easily create and edit videos, music, paintings, games, and more through a visual interface without programming. It can be used to make ACT, ARPG, AVG and other games, and can generate applications for various platforms.



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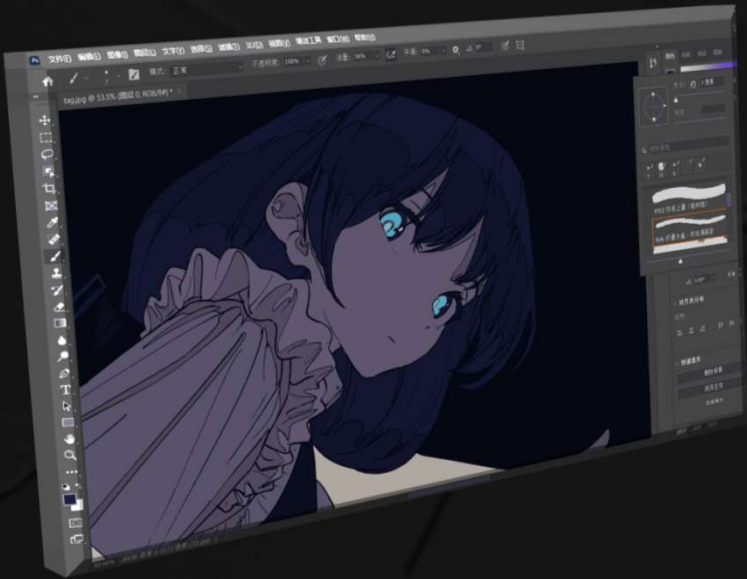




PHOTOSHOP

Process and draw images.

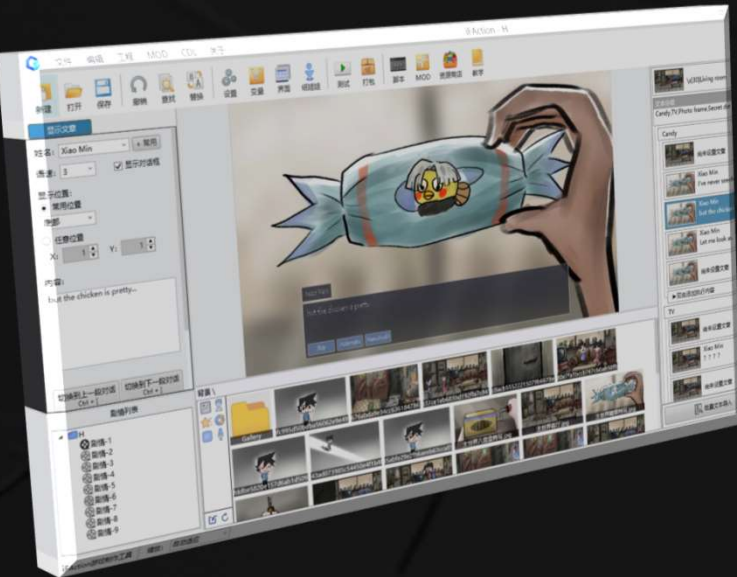
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Contrast

	Adobe Animate	Adobe Photoshop	3ds Max	iFAction
Price	Creative Cloud The team edition ¥2975/year	Creative Cloud China Photography Project ¥888/year	¥10335/year ¥29458/3 years	¥188 perpetual
Media support *(export)	.gif, .bmp, .swf, .jpg, .pct, .png, .mov, .wav, .avi, etc.	WebP, BMP, Cineon, CompuServe GIF, DICOM, HEIF/HEIC, IFF , JPEG, DPX, MOV, MP4, etc.	Autodesk(.FBX), 3D Studi(.3DS、 .PRJ), Alembic(.ABC), Adobe Illustrator(.AI), Arnold (.ASS), Autodesk Collada(.DAE), DWF(.DWF), etc.	.png, mp3, mp4, .exe, etc.
Scripting language	Actionscript3.0	JavaScript	MaxScript	JavaScript

Choose

	Adobe Animate	Adobe Photoshop	3ds Max	iFAction
platform support	Windows & macOS	Windows & Android & Mac OS & Linux	Windows	Windows
Optimal platform support	In general, Adobe Animate performs equally well on both macOS and Windows platforms.	In general, Adobe Photoshop performs equally well on both macOS and Windows platforms.	Windows, because 3ds Max hasn't been ported perfectly to other platforms yet	Windows, because iFAction hasn't been ported perfectly to other platforms yet.

They have similar drawing tool, timeline management, layer management and project templates.



How is their scripting feature? Before we do that, we need to know the benefits of scripting.

A script is equivalent to a combination of some macro commands and does not need to be compiled. Faster than developing from scratch, and the syntax is relatively simple. Cross-platform is possible as long as there is a corresponding language interpreter on the system.



The scripting language is easy to learn, so programmers can use the scripting language to quickly complete the writing work. I really agree with this because I recently made an avg game using dialog scripts and frame animation import scripts.



iFActon E.g.

How is their scripting feature?



Adobe Animate



3ds Max



Photoshop



iFAction

Features

Adobe Animate	3ds Max	iFAction & PS
Actionscript3.0	MaxScript	JavaScript
<ul style="list-style-type: none">● ActionScript 3.0 is executed by the ActionScript Virtual Machine (AVM2) in Flash Player.● ActionScript 3.0 is based on the ECMAScript language specification.● ActionScript 3.0 consists of 2 parts:<ol style="list-style-type: none">1. Core language: used to define the structure of the programming language, such as declarations, representations, conditions, loops, and types.2. flash player API: It consists of a series of classes that precisely define the functions of flash player.● Object oriented programming.	<ul style="list-style-type: none">● MAXScript is 3ds Max's built-in scripting language. Its main interface, the MAXScript menu, contains various commands for creating and processing scripts, which can be made with simple commands.● In the art production process, when the rules are fixed, the operations are repeated, and the steps are complex, it is necessary to use the Maxscript scripting automation tool to help the art to improve the production efficiency and optimize the production process.	<ul style="list-style-type: none">● JavaScript is an interpreted scripting language.● An object-based scripting language.● Weakly typed variable types are used.● An event-driven scripting language.● Dependent on the operating system, only browser support is required.● The standard for JavaScript is ECMAScript.

Function

Actionscript3.0	MaxScript	JavaScript
<ul style="list-style-type: none">● It is a complete object-oriented programming language with powerful functions, rich class libraries, and syntax like JavaScript.	<ul style="list-style-type: none">● Most functions of 3ds Max can be invoked through scripts.● Artists and developers can easily extend the user interface and automation to perform batch processing.● Users can build real-time interfaces to external systems through OLE Automation.	<ul style="list-style-type: none">● Read and write HTML elements in response to browser events.● Detects browser information for authenticated visitors. Control cookies, including creating and modifying them.● Mainly used to add interactive behavior to HTML pages.● It can be directly embedded in HTML pages.

Their scripting functionality provides sample code

ACTION SCRIPT3.0

```
*实现跳转(Part of the code)
gotoAndStop_label:String;
gotoAndStop(frameNumber:Number); //String 类型的参数为帧编号编写的标签，Number参数为具体帧数

gotoAndPlay_label:String; //跳转到指定帧数并继续播放
gotoAndPlay(frameNumber:Number); //跳转到指定帧数并开始播放

Stop(); //立刻暂停
Play(); //立刻开始
```

MAX SCRIPT

```
*实现动画(Part of the code)
mybox=box;
animate on //动画开关

{
    at time 0 mybox.pos=[0,0,0];mybox.wirecolor=red; //初始位置
    at time 100 mybox.pos=[1000,0,0];mybox.scale=[2,2,5];mybox.wirecolor=white //指定帧变化后
}
```

JAVA SCRIPT

```
*实现帧动画(Part of the code)
function DResAnimFrame(rd){
    this.anims = []; //动画组
    this.actionList = []; //关键帧动作集合

    this.id = rd.readShort(); //动画ID
    this.name = rd.readString(); //动画名称
    this.mrg = rd.readString(); //动画说明
    this.point = new DResAnimPoint(rd); //动画出现位置
    this.file = rd.readString(); //动画图片文件

    var length = rd.readInt(); //读入动画组与关键帧动作合计
    for (var i = 0; i < length; i++) {
        this.anims.push(new DAnimRect(rd));
    }

    length = rd.readInt();
    for (i = 0; i < length; i++) {
        this.actionList.push(new DResAnimFrameAction(rd));
    }
}
```

ACTION SCRIPT3.0

*实现跳转(Part of the code)

```
gotoAndStop(_label:String);
```

```
gotoAndStop(frameNumber:Number); //String 类型的参数为给帧数填写的标签，Number参数为具体帧数
```

```
gotoAndPlay(_label:String); //跳转到指定帧数并停止播放
```

```
gotoAndPlay(frameNumber:Number); //跳转到指定帧数并开始播放
```

```
Stop(); //立刻暂停
```

```
Play(); //立刻开始
```

MAX SCRIPT

*实现动画(Part of the code)

```
mybox=box()
```

```
animate on //动画开关
```

```
(
```

```
at time 0(mybox.pos=[0,0,0];mybox.wirecolor=red) //初始位置
```

```
at time 100(mybox.pos=[1000,0,0];mybox.scale=[2,2,5];mybox.wirecolor=white) //指定帧变化后
```

```
)
```


JAVA SCRIPT

*实现帧动画(Part of the code)

```
function DResAnimFrame(rd){
```

```
  this.anims = []; //动画组
```

```
  this.actionList = []; //关键帧动作集合
```

```
  this.id = rd.readShort(); //动画ID
```

```
  this.name = rd.readString(); //动画名称
```

```
  this.msg = rd.readString(); //动画说明
```

```
  this.point = new DResAnimPoint(rd); //动画出现位置
```

```
  this.file = rd.readString(); //动画图片文件
```

```
  var length = rd.readInt(); //读入动画组与关键帧动作合计
```

```
  for(var i = 0;i<length;i++){
```

```
    this.anims.push(new DAnimRect(rd));
```

```
  }
```

```
  length = rd.readInt();
```

```
  for(i = 0;i<length;i++){
```

```
    this.actionList.push(new DResAnimFrameAction(rd));
```

```
  }
```

```
}
```



THANKS

MULTIMEDIA
AUTHORING TOOLS

By_
CDL