

Intro to Game Programming with Dark GDK Spring 2014

Topics

- API
- Dark GDK
- Screen Coordinates
- Game Loop
- Simple Animation

API

- Application Program Interface (API)
- API
 - describes an interface of a software system
 - is a set of commands, functions, and protocols programmers can use when building software
 - allows programmers to use predefined functions when developing software
 - examples include: Standard Template Library in C++, Java API, Dark GDK, Google Maps, Android

Dark GDK

- Dark GDK is an API that can be used with C++ to write games
- Dark GDK was developed by The Game Creators in the UK (<u>http://www.thegamecreators.com/</u>)
- Dark GDK Download is at <u>http://www.thegamecreators.com/?</u> <u>m=view_product&id=2128&page=download</u>

Dark GDK Setup

- Dark GDK Setup folder is in CS250 Public
- README Instructions exist in the folder
- The setup is for Visual Studio 2010 not Visual Studio 2008
- I have only tested this setup on Windows 7 systems ... I'm assuming the XP setup is the same but I'm not sure
- Dark GDK machines in the CS Lab, Marsh Labs, and 24-hour library lab

Dark GDK HelloWorld

- Grab the Visual Studio 2010 solution HelloDarkGDK from CS250 Public and place this solution on your Desktop
- Open the solution
- Rebuild the solution
- Start Without Debugging

Include Directories

Include Directories	x
	t
C:\Program Files %28x86%29\Microsoft SDKs\Windows\v7.0A\Include C:\Program Files %28x86%29\Microsoft DirectX SDK %28August 2007%29\Include	*
C:\Program Files %28x86%29\The Game Creators\Dark GDK\Include	Ŧ
Inherited values:	
\$(VCInstallDir)include \$(VCInstallDir)atlmfc\include	*
\$(WindowsSdkDir)include \$(FrameworkSDKDir)\include	
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OK Cancel	

Library Directories

Library Directories	X
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C:\Program Files %28x86%29\Microsoft DirectX SDK %28August 2007%29\Lib\x86 C:\Program Files %28x86%29\The Game Creators\Dark GDK\Lib\VS10Debug	*
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Inherited values: \$(VCInstallDir)lib \$(VCInstallDir)atImfc\lib \$(WindowsSdkDir)lib \$(FrameworkSDKDir)\lib	*
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Ignore Specific Default Libraries

Configuration: Active(Debug)	Platform: Active(Win32)	✓ <u>P</u> latform: Active(Win32) ✓		Platform: Active(Win32) Configure	Configuration Manager
Common Properties	Additional Dependencies	kernel32.lib;user32.lib;gdi32.lil	;winspool.lib;comdlg32.lib;ad		
Configuration Properties	Ignore All Default Libraries				
General	Ignore Specific Default Libraries	Ignore Specific Default Libraries libcmtd;%(IgnoreSpecificDefaultLibraries)			
Debugging	Module Definition File				
VC++ Directories C/C++ Linker General	Add Module to Assembly				
	Embed Managed Resource File				
	Force Symbol References				
	Delay Loaded Dlls				
Input	Assembly Link Resource				
Manifest File					
Debugging					
System					
Optimization Embedded IDL					
Advanced					
Command Line					
Manifest Tool					
XML Document Generator					
Browse Information					
Build Events					
Custom Build Step					
	Additional Dependencies				
	Specifies additional items to add to the link of	ommand line [i.e. kernel32.lib]			
< III >>					

HelloDarkGDK

```
#include "DarkGDK.h"
```

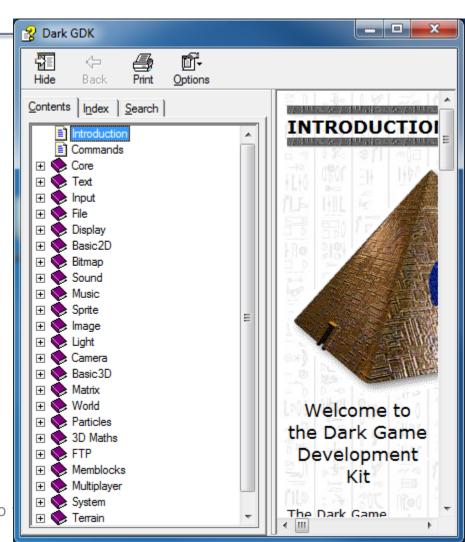
```
void DarkGDK()
{
  // Print at the current cursor location
  dbPrint("Hello, world!");
  // Wait for input from the keyboard
  dbWaitKey();
}
                                        Hello, world!
```

Simple Graphics

```
void DarkGDK ()
{
  int x = 25;
  int y = 25;
  for (int radius = 5; radius <= 25; radius += 5)</pre>
  {
    dbCircle (x, y, radius);
  }
  dbWaitKey ();
}
```

DarkGDK Documentation

Local Disk (C:)->
 Program Files (x86)->
 The Game Creators->
 Dark GDK->
 Documentation->
 Dark GDK



CS250 - Intro

Screen Info

- Default 640 pixels wide by 480 pixels high
- dbSetDisplayMode (width, height, colorDepth);
- RGB color is RGBA or a 32-bit value storing the red channel value (8-bits), green (8-bits), blue (8-bits), and alpha channel (8-bits) used for transparency
- dbInk (foregroundColor, backgroundColor); where the backgroundColor only applies to text

Color Example

```
void DarkGDK ()
ł
  DWORD blue = dbRGB (0, 0, 255);
  DWORD magenta = dbRGB (255, 0, 255);
  DWORD black = dbRGB (0, 0, 0);
  //clear window to blue background
  dbClear (0, 0, 255);
  dbInk (magenta, black);
  dbBox (0, 0, 20, 20);
  dbInk (black, black);
  dbCircle (30, 30, 10);
  dbWaitKey ();
}
```

Color Example

 You can use a Color Picker to help you select the appropriate color:

<u>http://www.colorpicker.com/</u>

Game Loop Animation

- Game Loop
 - special loop used in games and animation programs
 - contains update code
 - synchronizes the screen refresh

```
dbSyncOn (); // we will handle screen updates
dbSyncRate (60); // maximum times per second screen is updated
while (LoopGDK ()) // LoopGDK controls loop executions per second
{
    updateScreen (); // you write some kind of update code here
    dbSync (); // forces a screen update
}
```

Circle Animation

```
void DarkGDK ()
{
  int x = 20, y = 20;
  dbSyncOn ();
  dbSyncRate (60);
  while (LoopGDK ())
  {
    dbClear (0, 0, 255);
    dbCircle (x, y, 10);
    ++x;
    ++y;
    dbSync ();
  }
}
```