



# Intro to Game Programming with Dark GDK Spring 2014

# Topics

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

# API

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- 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

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- 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 (<http://www.thegamecreators.com/>)
- Dark GDK Download is at [http://www.thegamecreators.com/?m=view\\_product&id=2128&page=download](http://www.thegamecreators.com/?m=view_product&id=2128&page=download)

# Dark GDK Setup

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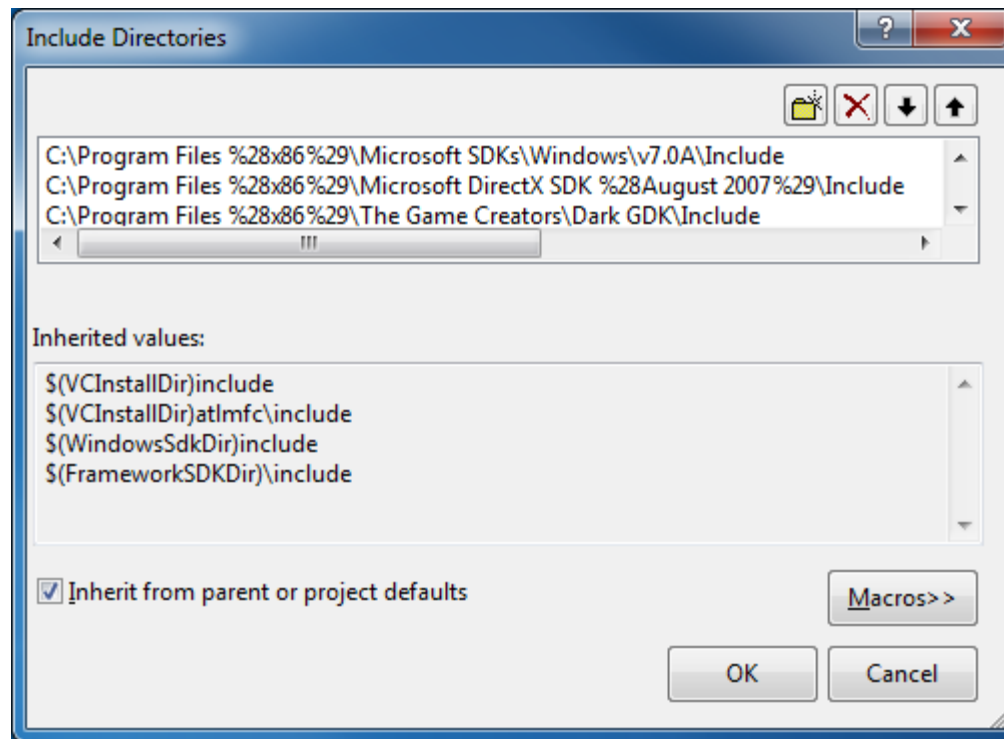
- Dark GDK Setup folder is in CS250-02 Public
- README Instructions exist in the folder
- The setup is for Visual Studio 2010 not Visual Studio 2008
- I have only tested this setup on Windows 7 systems ... I'm assuming the XP setup is the same but I'm not sure
- Dark GDK machines in the CS Lab, Marsh Labs, and 24-hour library lab

# Dark GDK HelloWorld

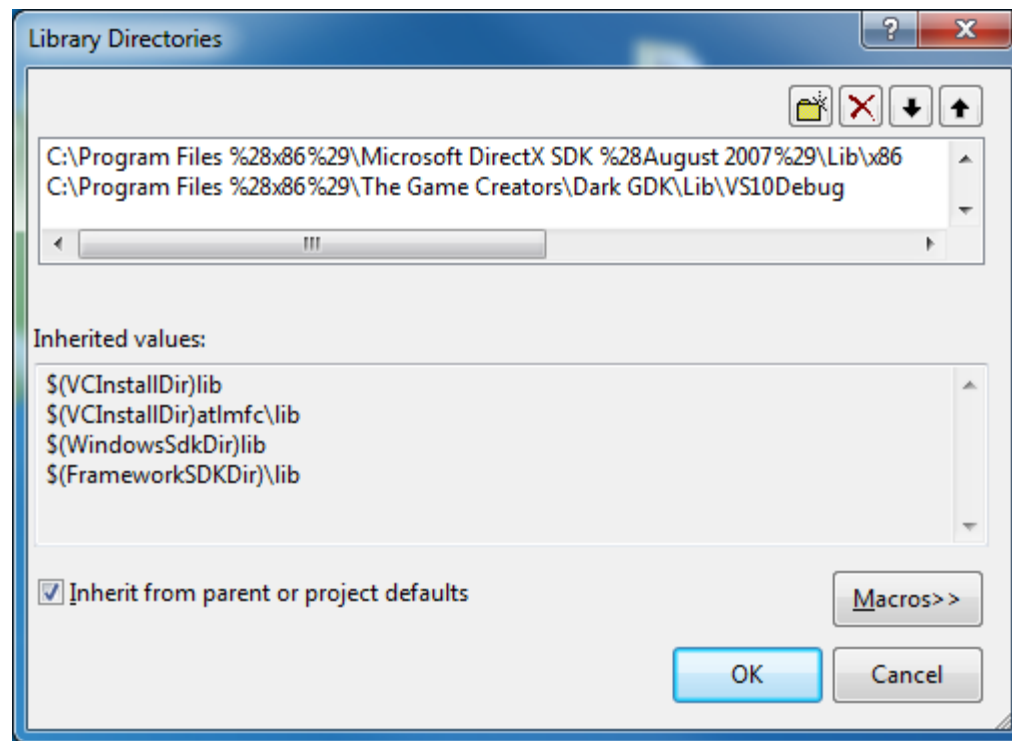
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- Grab the Visual Studio 2010 solution HelloDarkGDK from CS250 Public and place this solution on your Desktop
- Open the solution
- Rebuild the solution
- Start Without Debugging

# Include Directories

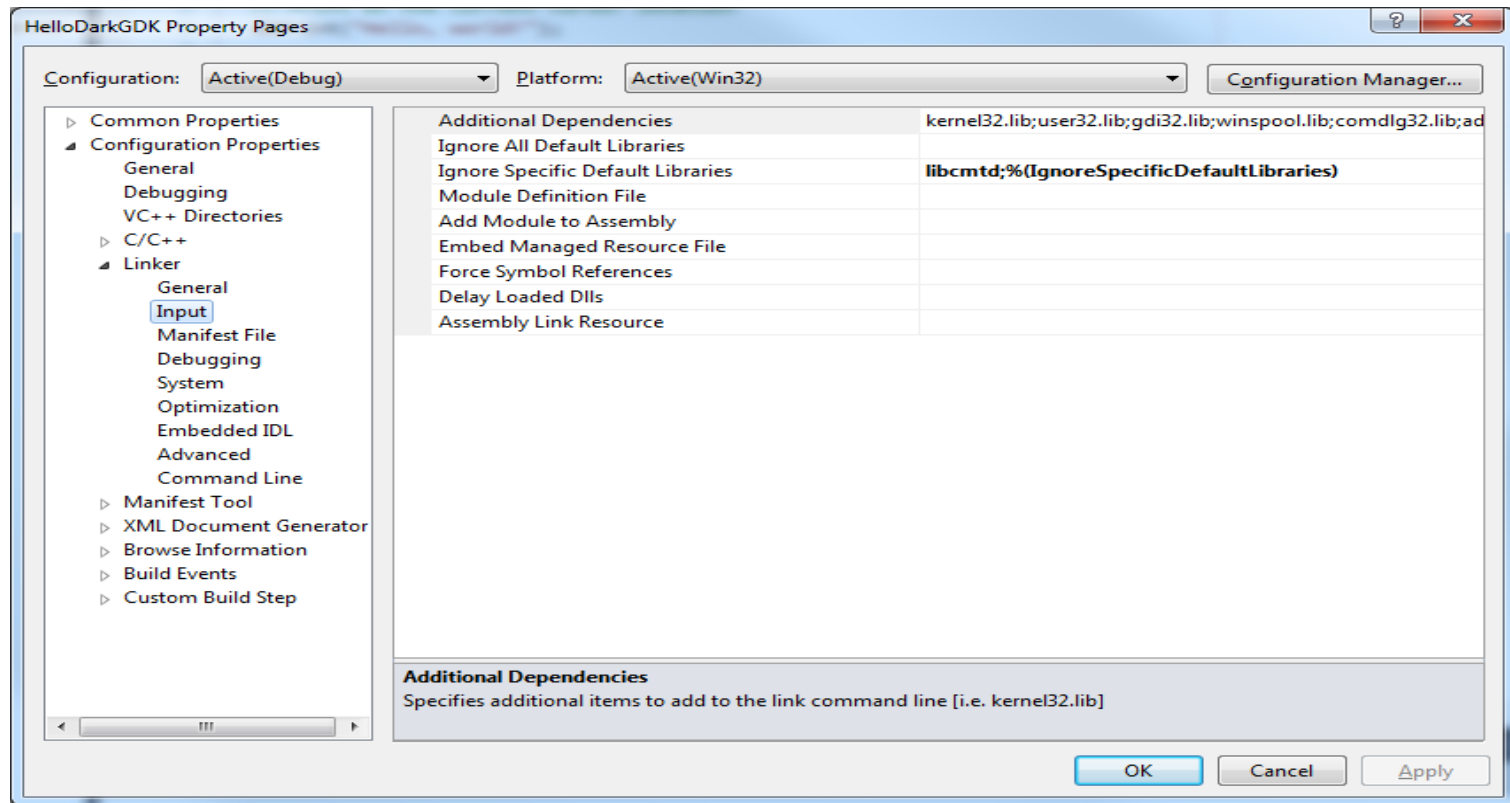


# Library Directories





# Ignore Specific Default Libraries



# HelloDarkGDK

```
#include "DarkGDK.h"

void DarkGDK()
{
    // Print at the current cursor location
    dbPrint("Hello, world!");

    // Wait for input from the keyboard
    dbWaitKey();
}
```



# Simple Graphics

```
void DarkGDK ()
{
    int x = 25;
    int y = 25;

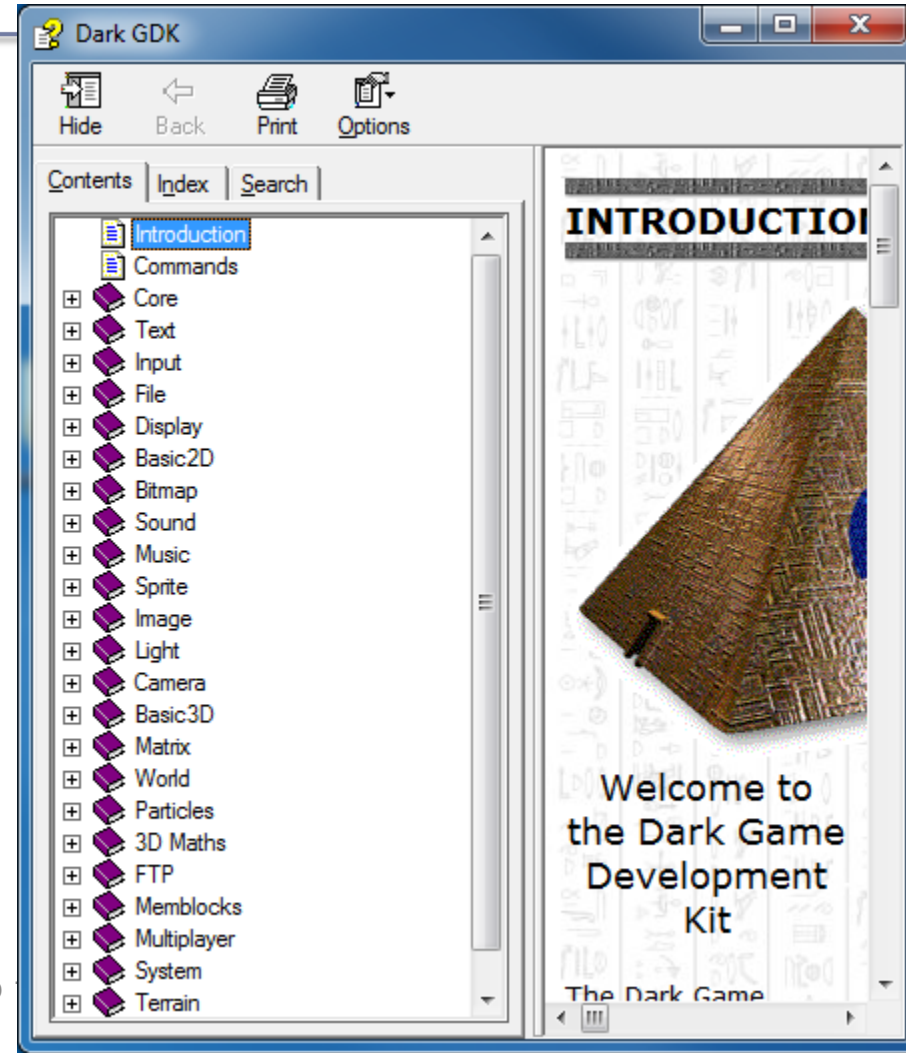
    for (int radius = 5; radius <= 25; radius += 5)
    {
        dbCircle (x, y, radius);
    }

    dbWaitKey ();
}
```



# DarkGDK Documentation

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



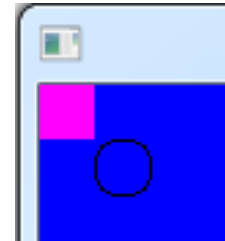
# Screen Info

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- 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 ()
{
    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

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- You can use a Color Picker to help you select the appropriate color:
  - <http://www.colorpicker.com/>

# Game Loop Animation

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- 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

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```
void DarkGDK ()
{
    int x = 20, y = 20;

    dbSyncOn ();
    dbSyncRate (60);

    while (LoopGDK ())
    {
        dbClear (0, 0, 255);
        dbCircle (x, y, 10);
        ++x;
        ++y;
        dbSync ();
    }
}
```