
Subject: Issue with converting a facing to a Vector3.Z value to look at

Posted by [iRANian](#) on Wed, 14 Mar 2012 22:27:06 GMT

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I'm working on a modified spectate plugin that adds a feature to automatically follow a player (by attaching the player to the head bone of the guy to follow) and also have it automatically follow the camera of the guy that's being followed, what I'm using now works with X and Y but it doesn't work correctly with the Z-height. This is what I'm using:

```
void Iran_Spectate_Follow_Camera_Player::Timer_Expired(GameObject *o, int number)
{
    if(number == 1)
    {
        GameObject *Player = Get_GameObj(ID);
        if(o && Player)
        {
            float facing_spectatedguy;
            float PI = 3.14159265f;
            Vector3 pos2 = Commands->Get_Bone_Position(Player,"c head");

            facing_spectatedguy = Commands->Get_Facing(Player);

            pos2.X += 20.0f*(cos(facing_spectatedguy*PI/180));
            pos2.Y += 20.0f*(sin(facing_spectatedguy*PI/180));
            pos2.Z += 20.0f*(sin(facing_spectatedguy*PI/180));

            Force_Camera_Look_Player(o,pos2);
            Commands->Start_Timer(o,this,0.05f,1); // Loop
        }
    }
}
```

The Z-height of the camera is always off. I'm attaching the guy to the head of the other guy that he's following, according to `Commands->Get_Position()` this causes the position of both players be the same. I have the following two questions:

1. Is the way I calculate the Z-Height (pos2.Z in my case) correct?
2. Is it actually possible to get this correctly working, as third person and first person targeting have different Z-height from my experience?

Subject: Re: Issue with converting a facing to a Vector3.Z value to look at

Posted by [Jerad2142](#) on Fri, 16 Mar 2012 13:58:36 GMT

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It's off because as he turns different directions you're doing the trig function sin and multiplying it by 20, then adding it to the height of the player you're following.

Facing only gets the Z facing of an object, not the Y and X tilt.

The best you'll be able to do is fake it (unless 4.0 gives you data exactly regarding what angle the player is looking up and down at). The easiest way to fake it that comes to mind is that you could get the difference in height between the right hand bone and the right shoulder bone of the soldier you're following. Then you just have to do some math fun:

```
pos2.Z += (1/HeightDifference)*20.0f;
```

It won't be perfect, nor will it be as good as if you actually figured out the angle between the shoulder and the hand with `atan2` or something, but I'd recommend you test it with something basic first, that way if it doesn't work at all (IE: although the players arms angle to aim where they are looking on the clients computer, I'm not sure if the fds does anything more than play 3 different animations depending if your looking up, down, or straight forward, this would mean that your camera would only have 3 different heights from the player).

However, I think its worth a shot as it'd be pretty easily to implement, unless someone else has an idea.

Subject: Re: Issue with converting a facing to a Vector3.Z value to look at

Posted by [iRANian](#) on Fri, 16 Mar 2012 16:03:22 GMT

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I'll try that head and arm bone difference method, otherwise i'll leave it alone as it isn't that important. I'm also manually setting the camera every 0.1 seconds, is there any way to do this smoother? I've thought about setting the camera in the `OnThink()` hook but i'm not sure if that makes stuff smoother.

Subject: Re: Issue with converting a facing to a Vector3.Z value to look at

Posted by [jonwil](#) on Fri, 16 Mar 2012 16:07:49 GMT

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I dont know of any better way to force the camera to follow a player, nor do I know of any better way to detect the tilt.

Subject: Re: Issue with converting a facing to a Vector3.Z value to look at

Posted by [iRANian](#) on Fri, 16 Mar 2012 16:21:00 GMT

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Thanks, I'll guess I'll just have to try out those methods and see what the results are.
