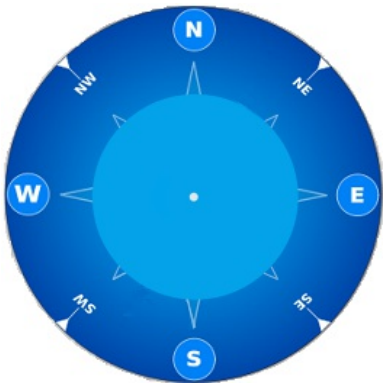
如何将N97变成罗盘仪

简介

下列代码演示了如何将N97变成一个罗盘。这个程序可以用来根据内建的磁北感应器，用来寻找磁北方向。如果你转动设备，那么罗盘就会转向北方。



磁北感应器

N97以及某些设备有一个内建的磁力仪。这个磁力仪可以用来寻找方向。可以通过位图旋转来改变。

```
TInt i = 0;
CSensrvChannelFinder* finder = CSensrvChannelFinder::NewLC();
RSensrvChannelInfoList channelList;
CleanupClosePushL( channelList );
TSensrvChannelInfo Channelinfo;
finder->FindChannelsL( channelList, Channelinfo );

for (i = 0; i<channelList.Count(); i++)
 {
    Channelinfo = channelList[i];
    switch(Channelinfo.iChannelType)
        {
        case KSensrvChannelTypeIdMagneticNorthData:
         iBoolMagSupported = ETrue;
            break;
        default:
         iBoolMagSupported = EFalse;
            break;
        }
    if(iBoolMagSupported == (TInt)ETrue)
     {
     break;
     }
    }

   if(iBoolMagSupported == (TInt)EFalse)
    {
    User::Leave(KErrNotSupported);
    }

   if ( channelList.Count() > 0 )
       {
       Channelinfo = channelList[i];
       iMagneticNorthSensor = CSensrvChannel::NewL( channelList[ i ] );
       iMagneticNorthSensor->OpenChannelL();
       iMagneticNorthSensor->StartDataListeningL( this, 1, 1, 0 );
       }
   channelList.Close();
   CleanupStack::Pop( &channelList );
   CleanupStack::PopAndDestroy( finder );
```

位图旋转

```
Following code shows how to rotate bitmap.

CFbsBitmap *CImageConverterEngine::Bitmap_Rotate(TInt Angle)
{

 Angle = 360 -Angle;
    TReal CosA = 0.0;
    TReal SinA = 0.0;

    if(!iOriginalBitmap)
      {
      return NULL;
      }

    TBitmapUtil BaseBmpUtil(iOriginalBitmap);

    TBitmapUtil RotateBmpUtil(iRotatedBitmap);
```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```
    BaseBmpUtil.Begin(TPoint(0,0));

    RotateBmpUtil.Begin(TPoint(0,0), BaseBmpUtil);
      RotateBmpUtil.Begin(TPoint(0,0));

    TReal aAngle = (KPi/180.0)* (TReal)Angle;

    TInt ret = Math::Cos(CosA, aAngle);
      if(ret != KErrNone)
       {
       return NULL;
       }

     ret = Math::Sin(SinA, aAngle);
      if(ret != KErrNone)
       {
       return NULL;
       }

    TInt xC = iSize.iWidth/2;
    TInt yC = iSize.iHeight/2;

    for(TInt new_y=0;new_y<iSize.iHeight;new_y++)
    {
        for(TInt new_x=0;new_x<iSize.iWidth;new_x++)
        {
            if( (new_x-xC)*(new_x-xC) + (new_y-yC)*(new_y-yC) <= (xC*yC))
   {
    TInt x = xC + (TInt)(((new_x - xC)*CosA) + ((new_y-yC)*SinA)); //new x pixel bitmap
    TInt y = yC + (TInt)(-((new_x-xC)*SinA) + ((new_y-yC)*CosA)); // new y pixel bitmap

    BaseBmpUtil.SetPos(TPoint(x,y));
    RotateBmpUtil.SetPos(TPoint(new_x,new_y));
    RotateBmpUtil.SetPixel(BaseBmpUtil);
   }
        }
    }
    BaseBmpUtil.End();
    RotateBmpUtil.End();

    return iRotatedBitmap;
}
```

示例程序

这里需要ReadDeviceData能力 示例程序需要在N97上测试，可以在这里下载File:PhoneCompass.zip

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