

Hour of Code - 2015

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Via Google Hangouts (on-line)

Sábado 12/12/2015 - 14:00hs - 16:00hs

em português do Brasil

Evento: <https://www.facebook.com/events/888453987934801/>

Os comandos da Wolfram Language são palavras em inglês com o primeiro caracter em letra maiúscula, parâmetros podem ser passados entre colchetes e são separados por vírgula.

Shift + Enter executa a função

```
In[1]:= Plus[2, 2]
```

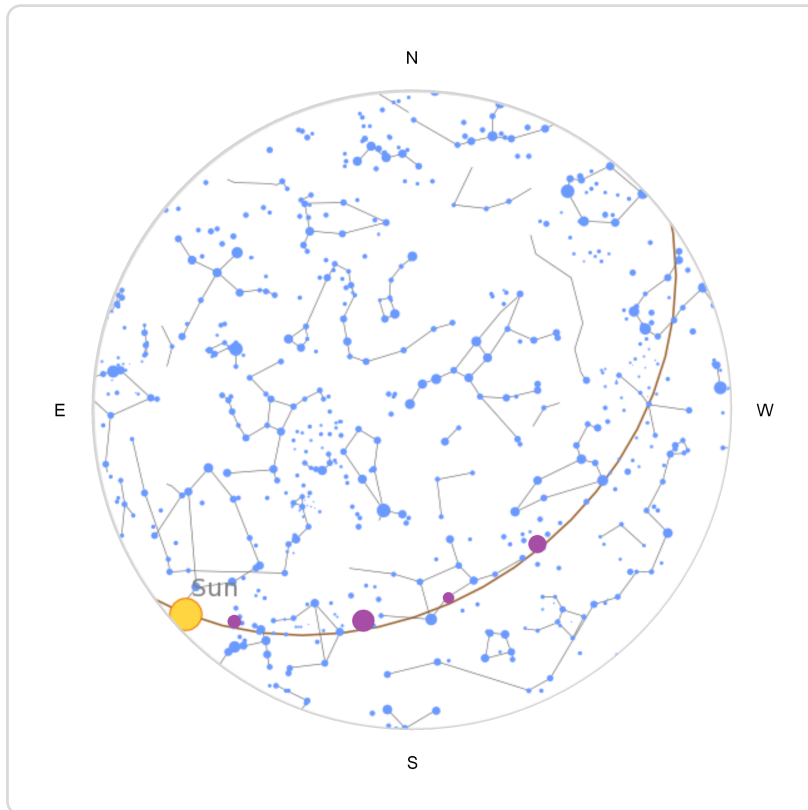
```
Out[1]= 4
```

```
In[2]:= 2 + 2
```

```
Out[2]= 4
```

Usando o comando = no início de uma nova linha, é possível obter resultados a partir de texto livre em inglês

In[3]:=  sky now



Em guscas de imagens no Google é possível copiar o endereço da imagem (URL) clicando com o botão direito do mouse sobre a imagem e selecionando a opção "Copiar Endereço da Imagem", no Wolfram Language vc pode usar a combinação de teclas Shift + Ins para colar o endereço/local da imagem entre aspas duplas " "

Diversas operações de processamento de imagens e inteligência artificial estão disponíveis

```
In[8]:= cao = Import[
  "https://www.petfinder.com/wp-content/uploads/2012/11/147083304-dogs-home-
  alone-all-day-632x475-281x211.jpg"]
```

Out[8]=



```
In[8]:= ImageIdentify[cao]
```

Out[8]= German shepherd

```
In[9]:= ImageIdentify[Import[  
  "http://www.operamundi.com.br/media/images/Mona_Lisa_face_800x800px.jpg"]]
```

Out[9]= 

```
In[12]:= ImageIdentify[Import["http://d.gr-assets.com/authors/1429114964p5/9810.jpg",  
  PerformanceGoal -> "Quality"]]
```

Out[12]= 

```
In[15]:= Blur[cao, 20]
```



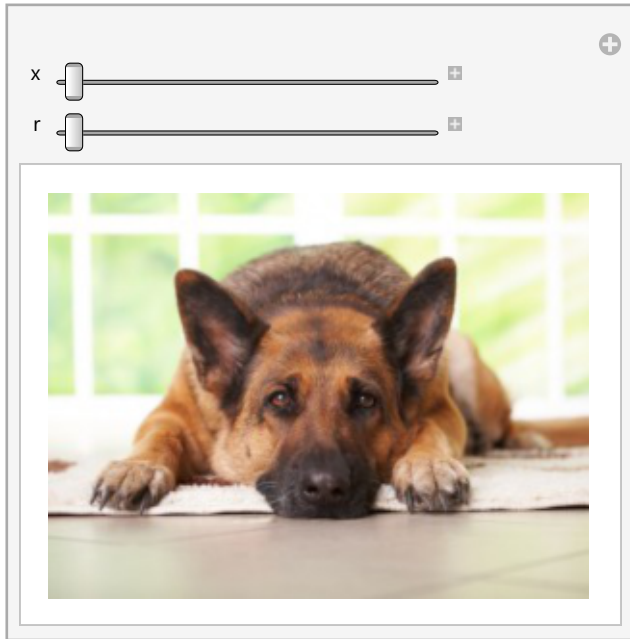
```
In[16]:= EdgeDetect[cao]
```

Out[16]= 

Criando interfaces com poucos comandos

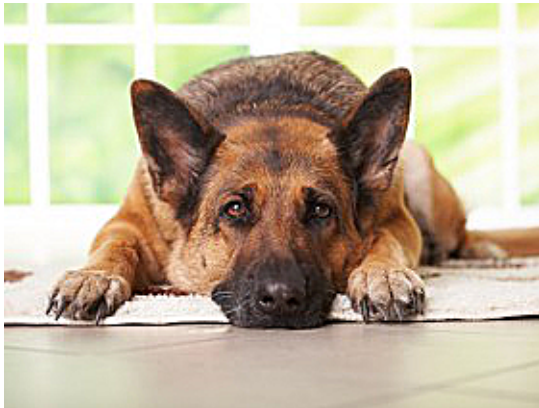
```
In[9]:= Manipulate[Rotate[Blur[cao, x], r],  
  {x, 1, 20, 1},  
  {r, 0, 30, 1}]
```

Out[9]=



```
In[20]:= Sharpen[cao]
```

Out[20]=

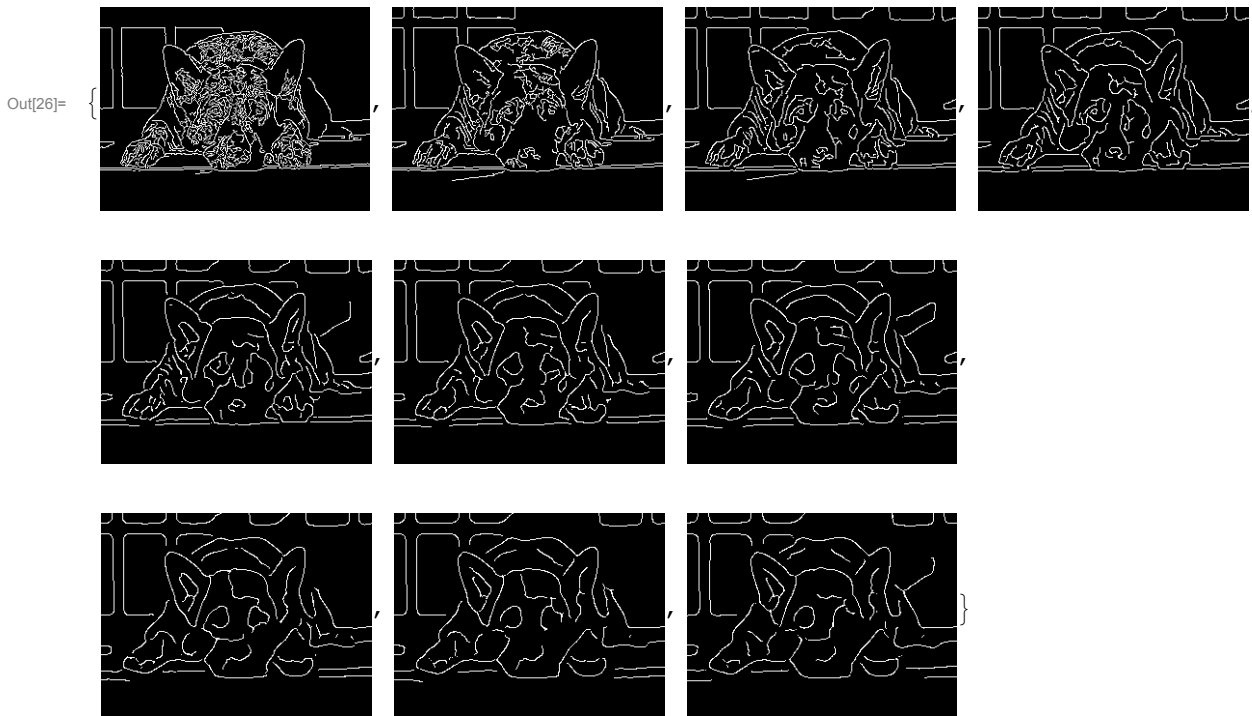


```
In[21]:= cao
```

Out[21]=




```
In[26]= Table[EdgeDetect[cao, x], {x, 1, 10, 1}]
```



```
In[27]= Table[x, {x, 1, 10, 1}]
```

```
Out[27]= {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

```
In[28]= Table[x, {x, 1, 10, 2}]
```

```
Out[28]= {1, 3, 5, 7, 9}
```

```
In[29]= Table[x, {x, 1, 10, .1}]
```

```
Out[29]= {1., 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2., 2.1, 2.2, 2.3, 2.4, 2.5,
  2.6, 2.7, 2.8, 2.9, 3., 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.,
  4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5., 5.1, 5.2, 5.3, 5.4, 5.5,
  5.6, 5.7, 5.8, 5.9, 6., 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7.,
  7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8., 8.1, 8.2, 8.3, 8.4, 8.5,
  8.6, 8.7, 8.8, 8.9, 9., 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.}
```

```
In[31]= tbl = Table[x * y, {x, 1, 10, 1}, {y, 1, 10, 1}]
```

```
Out[31]= {{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}, {2, 4, 6, 8, 10, 12, 14, 16, 18, 20},
  {3, 6, 9, 12, 15, 18, 21, 24, 27, 30}, {4, 8, 12, 16, 20, 24, 28, 32, 36, 40},
  {5, 10, 15, 20, 25, 30, 35, 40, 45, 50}, {6, 12, 18, 24, 30, 36, 42, 48, 54, 60},
  {7, 14, 21, 28, 35, 42, 49, 56, 63, 70}, {8, 16, 24, 32, 40, 48, 56, 64, 72, 80},
  {9, 18, 27, 36, 45, 54, 63, 72, 81, 90}, {10, 20, 30, 40, 50, 60, 70, 80, 90, 100}}
```

```
In[32]:= TableForm[tbl]
```

```
Out[32]//TableForm=
```

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

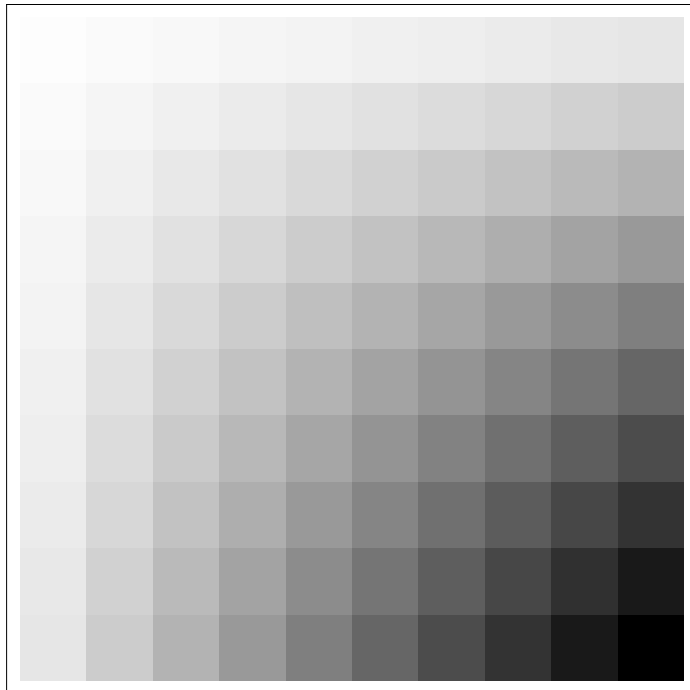
```
In[33]:= MatrixForm[tbl]
```

```
Out[33]//MatrixForm=
```

$$\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ 2 & 4 & 6 & 8 & 10 & 12 & 14 & 16 & 18 & 20 \\ 3 & 6 & 9 & 12 & 15 & 18 & 21 & 24 & 27 & 30 \\ 4 & 8 & 12 & 16 & 20 & 24 & 28 & 32 & 36 & 40 \\ 5 & 10 & 15 & 20 & 25 & 30 & 35 & 40 & 45 & 50 \\ 6 & 12 & 18 & 24 & 30 & 36 & 42 & 48 & 54 & 60 \\ 7 & 14 & 21 & 28 & 35 & 42 & 49 & 56 & 63 & 70 \\ 8 & 16 & 24 & 32 & 40 & 48 & 56 & 64 & 72 & 80 \\ 9 & 18 & 27 & 36 & 45 & 54 & 63 & 72 & 81 & 90 \\ 10 & 20 & 30 & 40 & 50 & 60 & 70 & 80 & 90 & 100 \end{pmatrix}$$

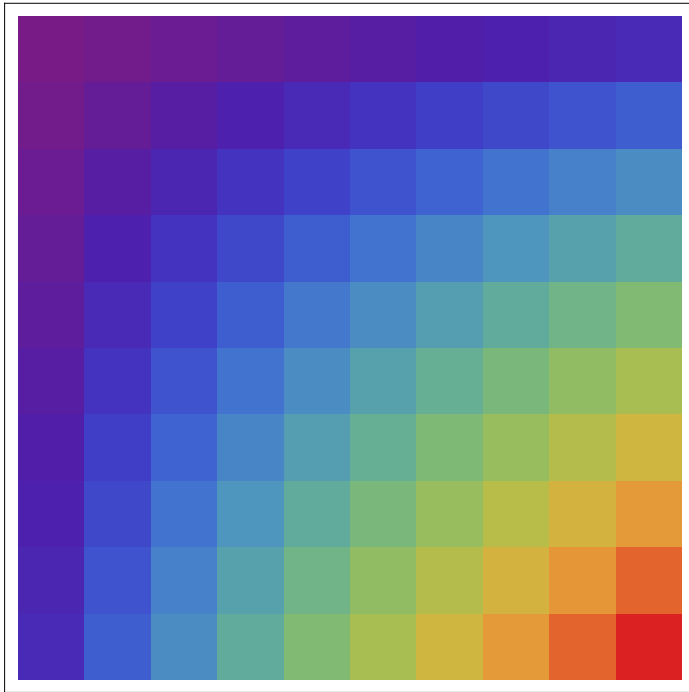
```
In[34]:= ArrayPlot[tbl]
```

```
Out[34]=
```



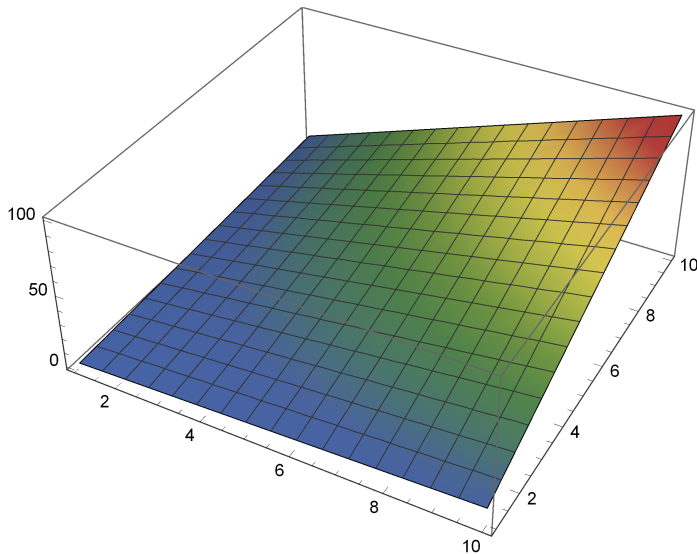
In[35]:= `ArrayPlot[tbl, ColorFunction -> "Rainbow"]`

Out[35]=



In[39]:= `ListPlot3D[tbl, ColorFunction -> "DarkRainbow"]`

Out[39]=



In[3]:= `tbl2 = Table[Sin[x] * Cos[y], {x, -10, 10, .1}, {y, -10, 10, .1}]`

Out[3]=

```
{ {-0.456473, -0.483739, -0.506172, -0.523547,
  -0.535691, -0.542483, ... 189 ..., -0.542483, -0.535691,
  -0.523547, -0.506172, -0.483739, -0.456473}, ... 200 ... }
```

large output

show less

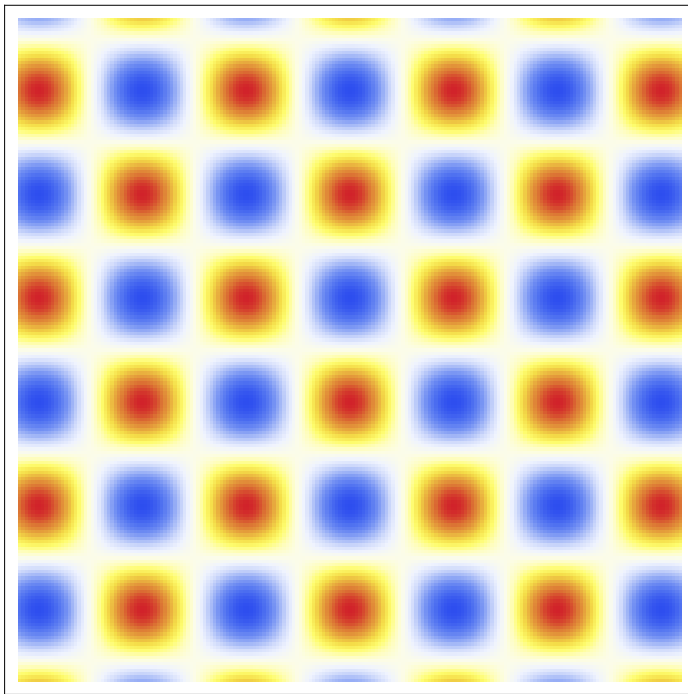
show more

show all

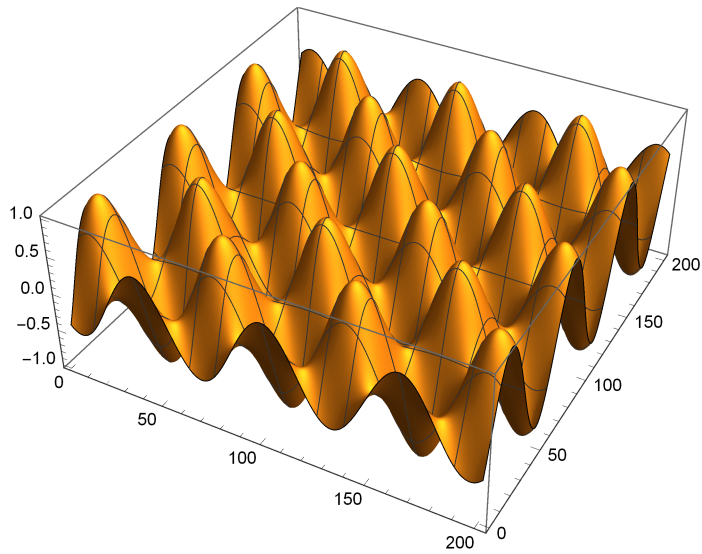
set size limit...

```
In[47]:= ArrayPlot[tbl2 , ColorFunction -> "TemperatureMap"]
```

Out[47]=



```
In[3]:= ListPlot3D[tbl2]
```



```
In[53]:= Here []
```

```
Out[1]= GeoPosition[{-23.4733, -46.6658}] []
```

In[2]:= GeoGraphics [Here []]

Out[2]=



In[11]:= GeoGraphics [GeoMarker [], GeoRange → Quantity [1, "Kilometers"]]

Out[11]=



```
In[12]= GeoGraphics[ Universidade Presbiteriana Mackenzie (university) ,
  GeoRangePadding → Quantity[1, "Kilometers"] ]
```



Publicando aplicação na WEB

```
In[18]= CloudDeploy[Manipulate[Rotate[Blur[Import[
  "https://www.petfinder.com/wp-content/uploads/2012/11/147083304-dogs-home-
  -alone-all-day-632x475-281x211.jpg"], blur] ,
  rotate] ,
  {blur, 1, 20, 1} ,
  {rotate, 0, 30, 1}], Permissions → "Public"]
```

```
Out[18]= CloudObject[
  https://www.wolframcloud.com/objects/3763eccf-7788-4e15-a3a0-e45ae892bbc9]
```

```
In[19]= URLShorten[
  "https://www.wolframcloud.com/objects/3763eccf-7788-4e15-a3a0-e45ae892bbc9"]
```

```
Out[19]= https://wolfr.am/8Vej25zJ
```

Para aprender mais sobre Wolfram Language: <http://www.wolfram.com/language/elementary-introduction/>