Harper — PS 15 — 2025-04-01

Section 37

In[303]:=

```
Style[#, Background → If[EvenQ[#], Yellow, Gray]] & /@ Range[100]
```

Out[303]=

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}

In[304]:=

```
If[PrimeQ[#], Framed[#], #] & /@ Range[100]
```

Out[304]=

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}

In[305]:=

```
If[PrimeQ[#], Labeled[Framed[#], Style[Mod[#, 4], LightGray]], #] & /@ Range[100]
```

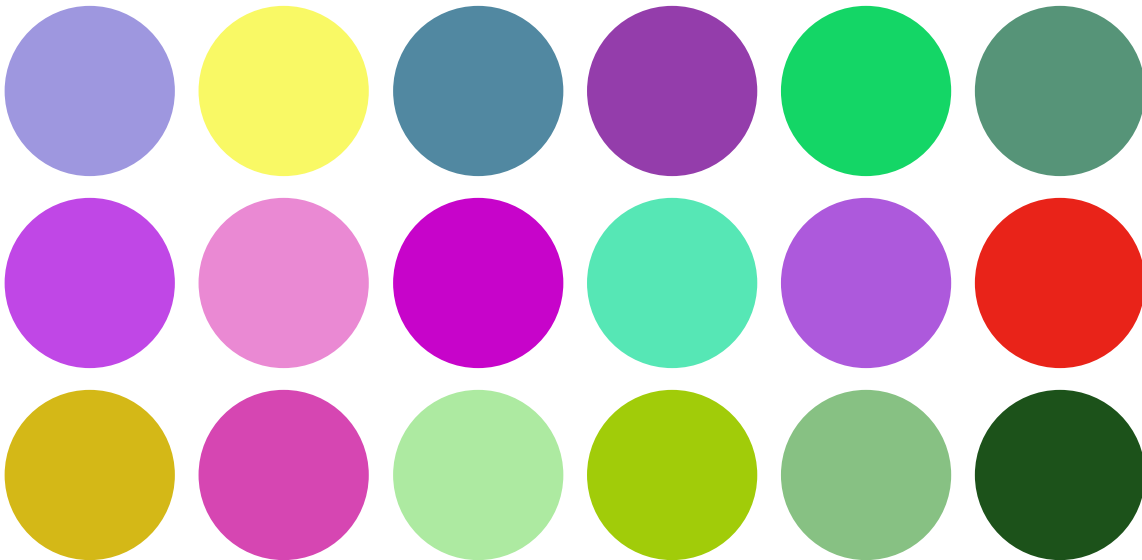Out[305]=

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}
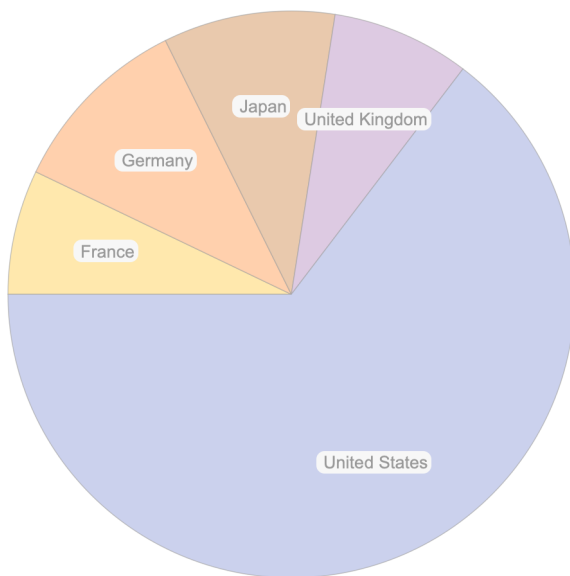
In[306]:=

```
GraphicsGrid[Table[Graphics[Style[Disk[], RandomColor[]]], 3, 6]]
```
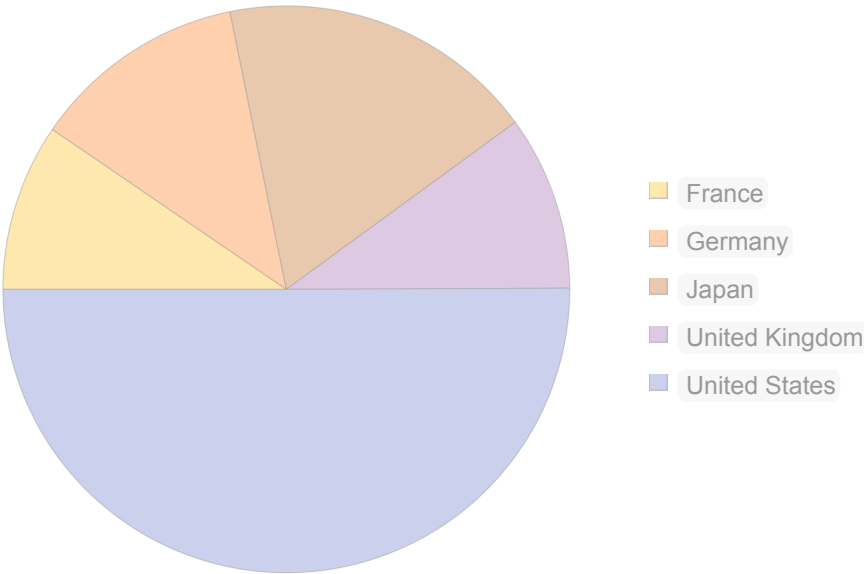
Out[306]=


```
PieChart[Labeled[#["GDP"], #] & /@ EntityList[ ⊞ Group of 5  COUNTRIES  ⋯  ✓ ]]
```

Out[307]=

`PieChart[Legended[#["Population"], #] & /@ EntityList[`⊞ **Group of 5** COUNTRIES `⋯` ✓`]]`

Out[308]=

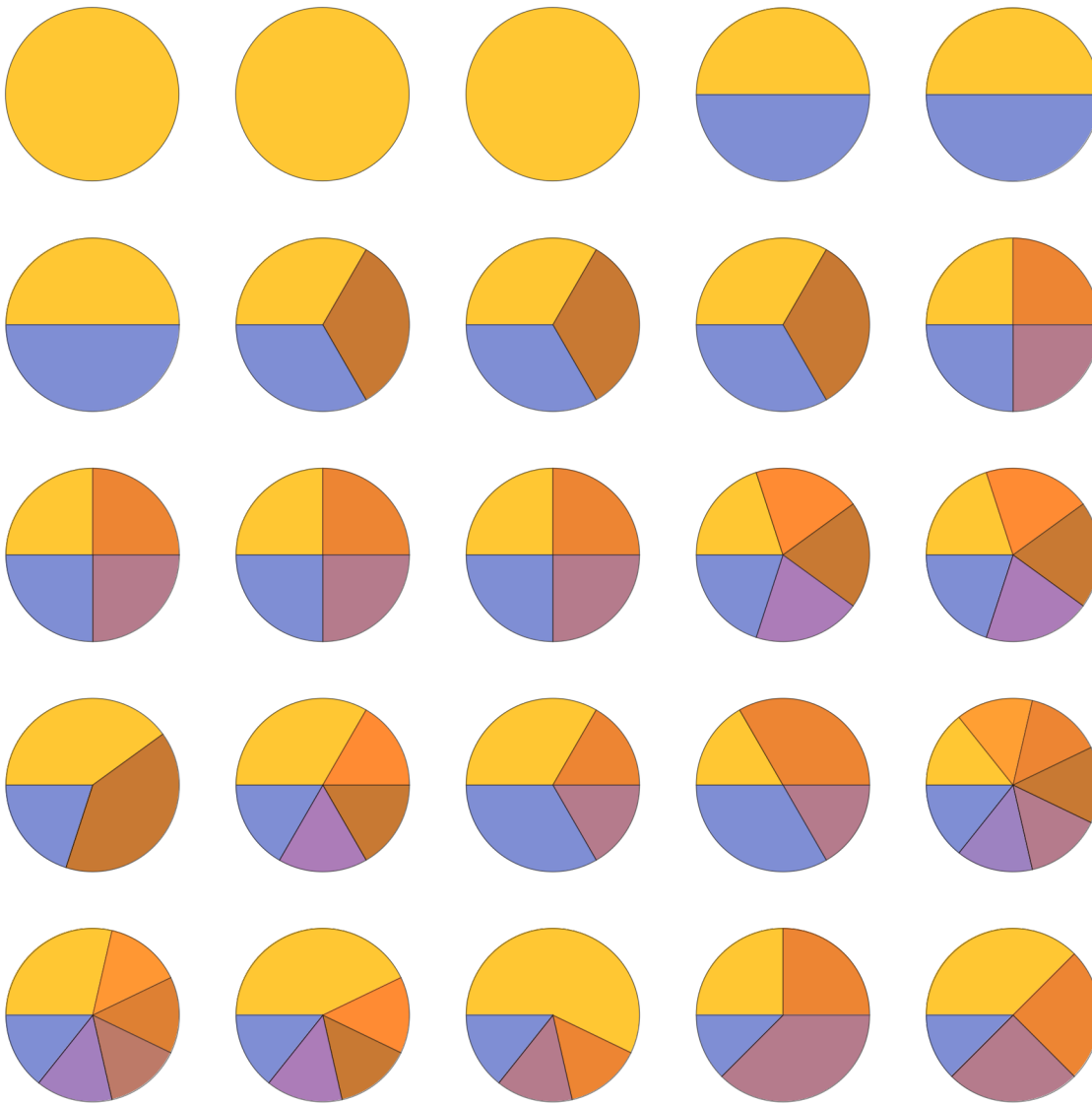- France
- Germany
- Japan
- United Kingdom
- United States

In[309]:=

```
GraphicsGrid[
  Partition[Table[PieChart[Values[Counts[IntegerDigits[2^n]]]], {n, 25}], 5]]
```

Out[309]=


```
GraphicsRow[
  WordCloud[TextWords[WikipediaData[#]]] & /@ EntityList[ ⊞ Group of 5  COUNTRIES  ⋯  ✓ ]]
```

Out[310]=

Section 38

In[311]:=
```
Module[{x = Range[10]}, x^2 + x]
```

Out[311]=
```
{2, 6, 12, 20, 30, 42, 56, 72, 90, 110}
```
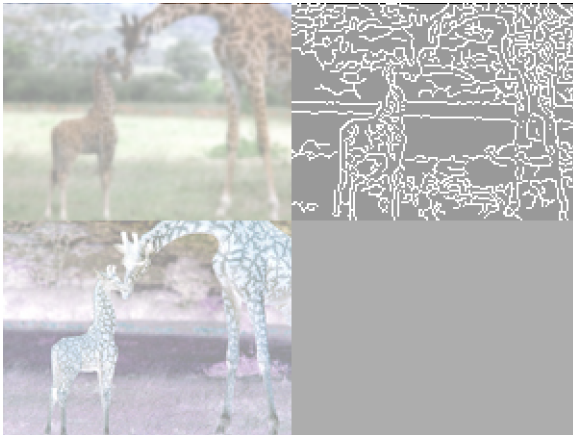
In[312]:=
```
Module[{list = RandomInteger[100, 10]},
 Column[{list, Sort[list], Max[list], Total[list]}]]
```
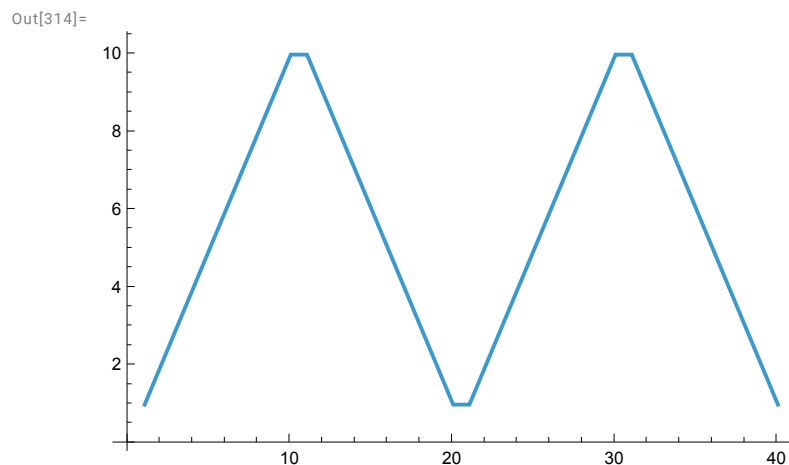
Out[312]=
```
{89, 80, 68, 76, 92, 31, 23, 100, 21, 40}
{21, 23, 31, 40, 68, 76, 80, 89, 92, 100}
100
620
```

```
Module[{giraffe = ⊟ [ giraffe  SPECIES SPECIFICATION ] [ image ] ⋯ ✓ },

 ImageCollage[{Blur[giraffe], EdgeDetect[giraffe], ColorNegate[giraffe]}]]
```

Out[313]=

In[314]:=
```
Module[{r = Range[10]}, ListLinePlot[Join[r, Reverse[r], r, Reverse[r]]]]
```

Out[314]=

In[315]:=

```
Module[{r = Range[10]}, {r + 1, r - 1, Reverse[r]}]
```

Out[315]=

```
{{2, 3, 4, 5, 6, 7, 8, 9, 10, 11},
 {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}, {10, 9, 8, 7, 6, 5, 4, 3, 2, 1}}
```

In[316]:=

```
NestList[Mod[17 # + 2, 11] &, 10, 20]
```

Out[316]=

```
{10, 7, 0, 2, 3, 9, 1, 8, 6, 5, 10, 7, 0, 2, 3, 9, 1, 8, 6, 5, 10}
```

In[317]:=

```
Table[StringJoin[Module[{v = Characters["aeiou"], c}, c = Complement[Alphabet[], v];
   RandomChoice /@ {c, v, c, v, c}]], 10]
```

Out[317]=

```
{hokem, yagin, gidek, gonax, govor, dicen, wojuf, mipah, rihuv, yelim}
```