Hexi-PS15-2025 - 04 - 01

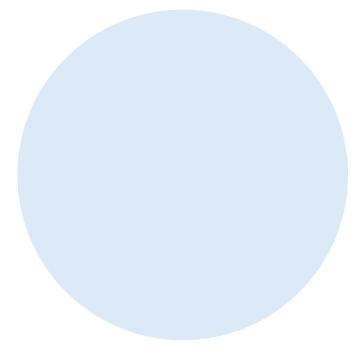
Exercises from EIWL3 Section 37

```
In[200]:=
     Table[Style[n, Background → If[EvenQ[n], Yellow, LightGray]], {n, 100}]
Out[200]=
      {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[201]:=
     Table[If[PrimeQ[n], Framed[n], n], {n, 100}]
Out[201]=
      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[202]:=
     Table[If[PrimeQ[n], Labeled[Framed[n], Style[Mod[n, 4], LightGray]], n], {n, 100}]
Out[202]=
     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
```

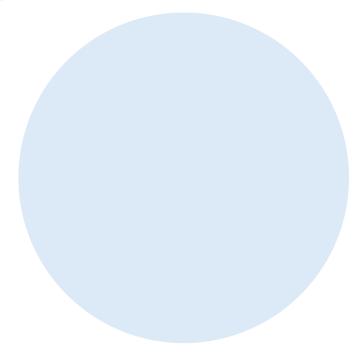
In[203]:=
 GraphicsGrid[Table[Graphics[{RandomColor[], Disk[]}], 3, 6]]

Out[203]=





Out[204]=



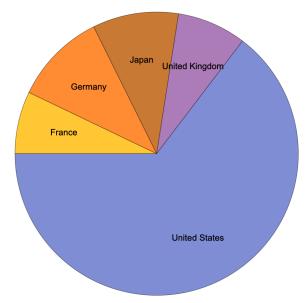
In[205]:=

PieChart[]

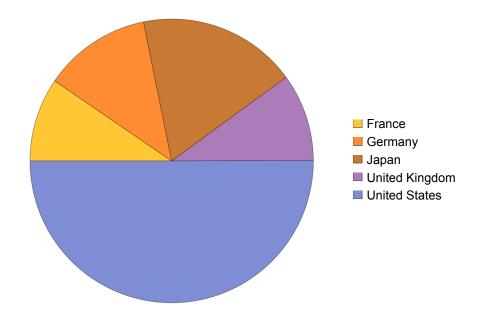
••• PieChart: PieChart called with 0 arguments; 1 argument is expected.

Out[205]=

PieChart[]



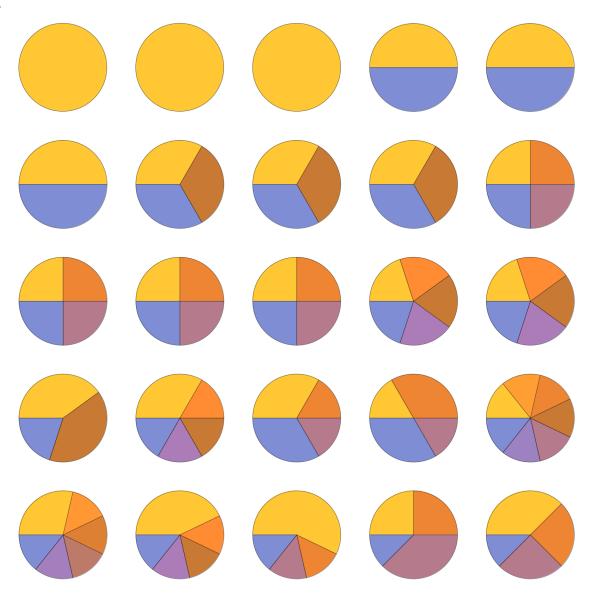
In this problem and the next one, you used the EntityGroup twice. There is a way to get the labels and legends without doing that.



In[208]:=

GraphicsGrid[Partition[Table[PieChart[Values[Counts[IntegerDigits[2^n]]]], {n, 1, 25}], 5]]

Out[208]=



population international

Exercises from EIWL3 Section 38

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percent_century country emperor Security Climate popular environmental largest culture imperial country 'straditionalsignificant language 2016 pacific Buddhismeconomic Western number official 2018 Asianstate sector space began years used rights

War_{law}

```
In[210]:=
       Module [\{x = Range[10]\}, x^2 + x]
Out[210]=
       {2, 6, 12, 20, 30, 42, 56, 72, 90, 110}
In[211]:=
       Module[{x = Table[RandomInteger[100], 10]}, Column[{x, Sort[x], Max[x], Total[x]}]]
       \{0, 67, 79, 36, 34, 75, 48, 83, 10, 30\}
       \{0, 10, 30, 34, 36, 48, 67, 75, 79, 83\}
       83
       462
```

systemWorld Rittis Million Provided highest century Brittis Minclude island world Swater primenumber Contained World Swater Primenumber Primen

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In[212]:= Module \[\left\{ x = EntityValue \[\left\[\text{giraffe SPECIES SPECIFICATION} \], "Image" \] \right\}, {Blur[x], EdgeDetect[x], ColorNegate[x]} Out[212]= In[213]:= Module[{r = Range[10]}, ListLinePlot[Join[r, Reverse[r], r, Reverse[r]]]] Out[213]= 10 10 20 In[214]:= Module[{r = Range[10]}, {r + 1, r - 1, Reverse[r]}] Out[214]= $\{\{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[215]:=

NestList[Mod[17 # + 2, 11] &, 10, 20] Out[215]= $\{10, 7, 0, 2, 3, 9, 1, 8, 6, 5, 10, 7, 0, 2, 3, 9, 1, 8, 6, 5, 10\}$

```
See my solution for something a
                                                               little better. I still had to list the vowels
In[216]:=
                                                               and I listed them twice. Mine isn't great
      vowels = {"a", "e", "i", "o", "u"};
      lv = LetterNumber[#] & /@ {"a", "e", "i", "o", "u"};
                                                               either.
      consonants = Delete[
          \label{lem:delete_pole} Delete[Delete[Delete[Alphabet[], lv[1]], lv[2]], lv[3]], lv[4]], lv[5]];
      Module[{c = consonants, v = vowels},
        Table[StringJoin[RandomSample[c, 1], RandomSample[v, 1],
          RandomSample[c, 1], RandomSample[v, 1], RandomSample[c, 1]], 10]]
Out[219]=
       {uewoc, qaoip, vaein, gisuh, nuuep, pinih, soiot, uacot, iazem, loeau}
```

OK, right answer, but this is clunky!