In[36]:=
```
SetDirectory[NotebookDirectory[]];
```

In[21]:=
```
d1 = Import["trials_with_entities/trial1.out", "List"];
d2 = Import["trials_no_entities/trial1.out", "List"];
```

Total memory differences (in MB) :
NB: I don't show the average for all 3 trials here but all three trials were very close.

In[40]:=
```
d1[[-1]] - d1[[1]]
d2[[-1]] - d2[[1]]
```

Out[40]= 278.641

Out[41]= 60.9922

Use 4 different models to determine memory growth:
- Basic linear model
- 3 parameter exponential model
- 3 parameter power function
- third degree polynomial

Fits for memory usage on parsing data with no preprocessing

In[8]:=
```
f1 = LinearModelFit[d1, x, x]
f2 = NonlinearModelFit[d1, a + b * c^x, {a, b, c}, x]
f3 = NonlinearModelFit[d1, a + b * x^c, {a, b, c}, x]
f4 = NonlinearModelFit[d1, a * x + b * x^2 + c * x^3, {a, b, c}, x]
```

Out[8]= FittedModel[766.075 + 2.10339 x]

Out[9]= FittedModel[770.082 + 28.2249 × 1.02171^x]

Out[10]= FittedModel[806.986 + 0.00663811 x^2.24302]

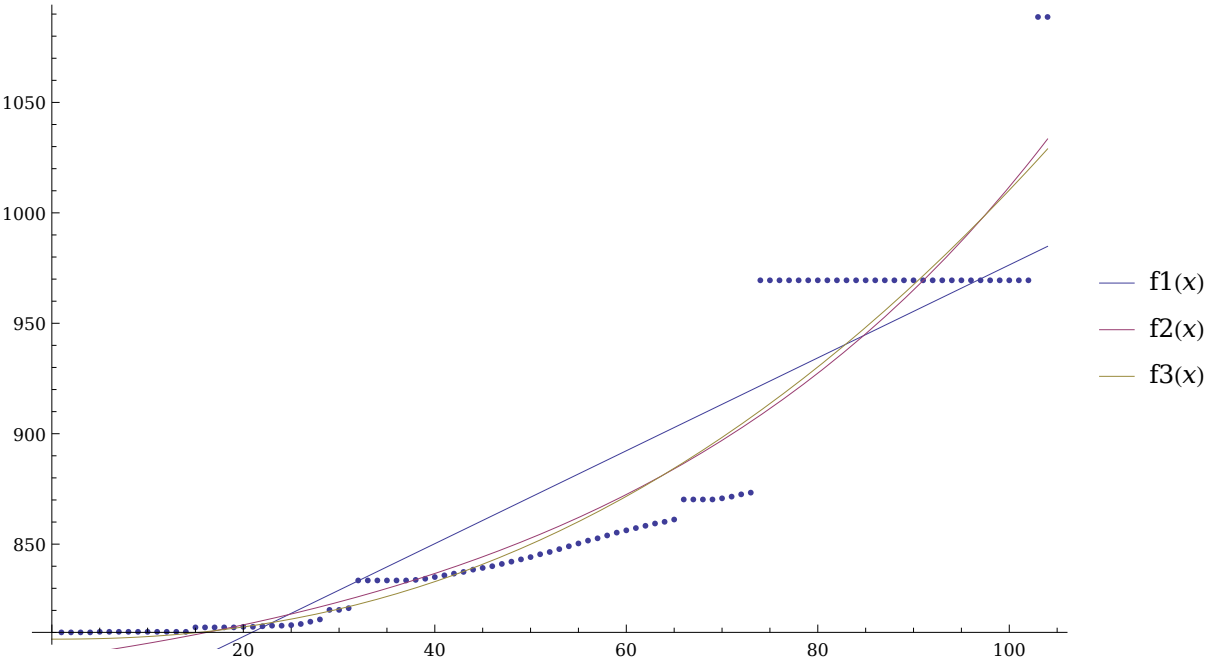
Out[11]= FittedModel[57.5426 x - 1.08319 x^2 + 0.00617395 x^3]

In[12]:=
```
h[fit_] := fit["AdjustedRSquared"]
Map[h, {f1, f2, f3, f4}]
```

Out[13]= {0.81751, 0.999321, 0.999361, 0.947572}

In[30]:=
```
Show[ListPlot[d1],
 Plot[{f1[x], f2[x], f3[x]}, {x, 0, Length[d1]}, PlotLegends → "Expressions"]]
```

Out[30]=



Fits for memory usage on parsing data with preprocessing to remove URLs, hashtags, and twitter mentions

In[23]:=
```
g1 = LinearModelFit[d1, x, x]
g2 = NonlinearModelFit[d2, a + b * c^x, {a, b, c}, x]
g3 = NonlinearModelFit[d2, a + b * x^c, {a, b, c}, x]
g4 = NonlinearModelFit[d2, a * x + b * x^2 + c * x^3, {a, b, c}, x]
```

Out[23]= FittedModel[$766.075 + 2.10339\,x$]

Out[24]= FittedModel[$789.612 + 13.3802 \times 1.01871^{x}$]

Out[25]= FittedModel[$805.76 + 0.00693981\,x^{1.99609}$]

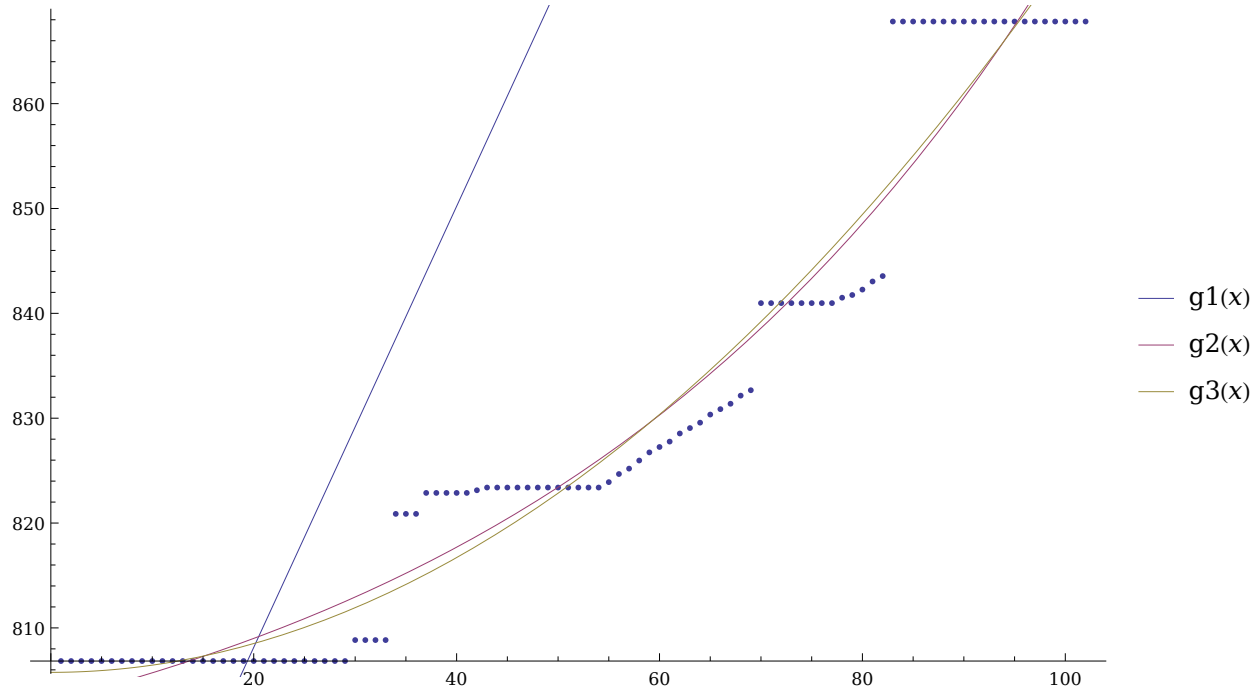
Out[26]= FittedModel[$58.9255\,x - 1.14261\,x^2 + 0.00654039\,x^3$]

In[27]:=
```
h[fit_] := fit["AdjustedRSquared"]
Map[h, {g1, g2, g3, g4}]
```

Out[28]= {0.81751, 0.999962, 0.999963, 0.94354}

In[31]:=
```
Show[ListPlot[d2],
 Plot[{g1[x], g2[x], g3[x]}, {x, 0, Length[d2]}, PlotLegends → "Expressions"]]
```

Out[31]=



In[35]:=
```
(1 009 737 - 995 565) / 1 009 737.0
```

Out[35]=
```
0.0140353
```