ESM 232 Assignment 5

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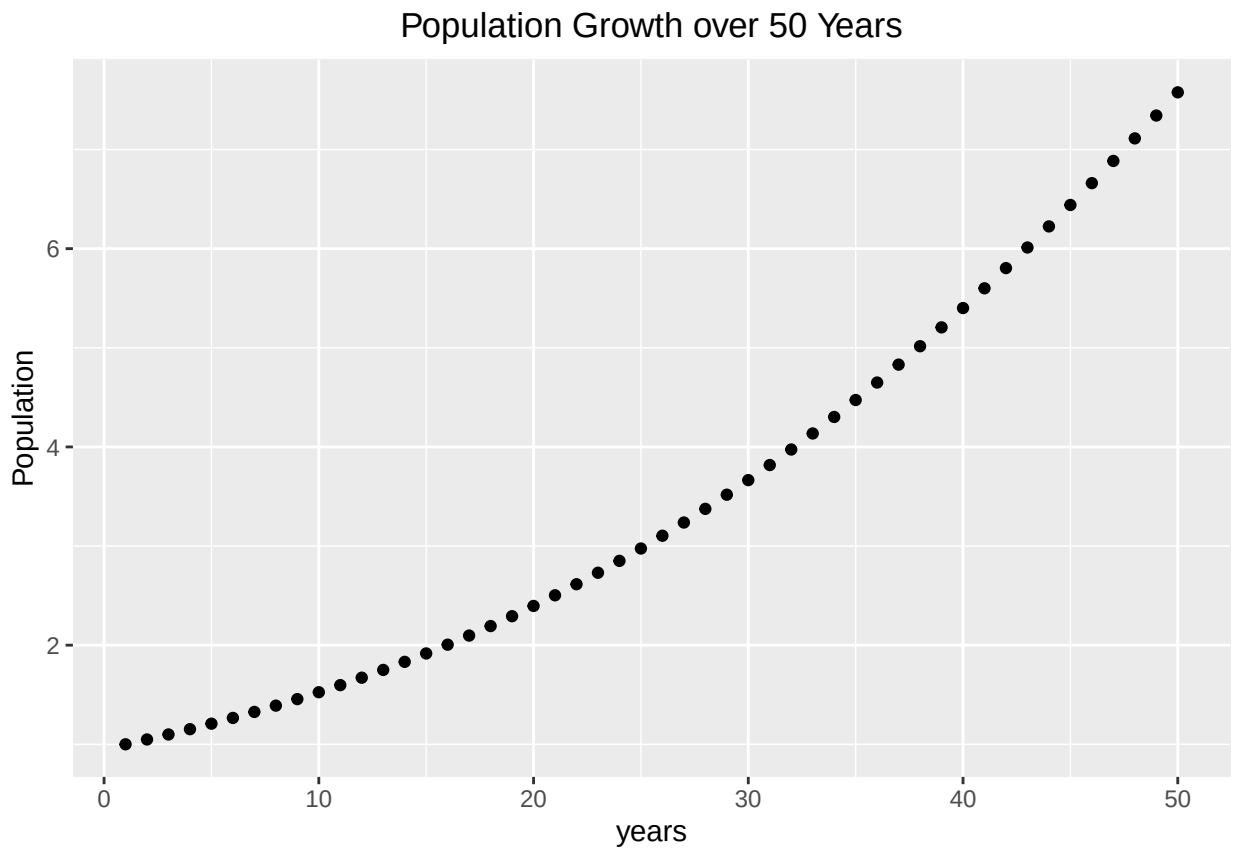
Use ODE solver

```
source("popWithK.R")

# set the initial population to be 1
initialP = 1

# the results will be shoum from year 1 to year 50
years = seq(from=1, to=50, by=1)

# set the parameters: base growth rate r and carrying capacity K
parms = list(r = 0.05, K = 20)

# run the solver
Ptime = ode(y=initialP,
            time=years,
            func=popWithK,
            parms=parms)

# rename the columns
colnames(Ptime)=c("year","Population")
# attributes(Ptime)

# Check to make sure year 50 is correct
# tail(Ptime)
```

Graph the results

```
ggplot(as.data.frame(Ptime), aes(year, Population)) +
  geom_point() +
  labs(y="Population", x = "years", title = "Population Growth over 50 Years") +
  theme(plot.title = element_text(hjust = 0.5))
```


Population Growth over 50 Years
Population
6
4
2
0
10
20
30
40
50
years