

CO225 Lab 7

Ziyan Maraikar

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1. Write a function `replace l x y` which replaces every occurrence of item `x` with `y` in list `l`. Is your function polymorphic?
2. Write a function `index_of l x` which returns the index of item `x` in the list `l` (items are indexed from 0.) To handle the case where `x` does not occur in the list use `option` as the result type,

```
let 'a option =  
  | Some 'a  
  | None
```

3. We can represent a polynomial $a_0 + a_1x + \dots + a_nx^n$ as a list of floating point coefficients $[a_0; a_1; \dots; a_n]$.

Write a function to evaluate the polynomial at $x = t$, using Horner's rule,

$$a_0 + t(a_1 + t(\dots + t(a_n) \dots))$$