代码

```python
class mylist(list):
    def product(self):
        res = self[0]
        for i in self[1:]:
            res *= i
        return res
    def __add__(self,other):
        res = mylist()
        if(len(self) != len(other)):
            raise ValueError
        for i,j in zip(self,other):
            res.append(i+j)
        return res
    def __mul__(self,other):
        res = mylist()
        if(len(self) != len(other)):
            raise ValueError
        for i,j in zip(self,other):
            res.append(i*j)
        return sum(res)
```

*不支持不同长度的列表之间的操作以及字符串之间的乘积

运行结果

```
>>> a = mylist()
>>> a
[]
>>> a = mylist([1,2,3,4,5])
>>> a
[1, 2, 3, 4, 5]
>>> b = mylist([6,7,8,9,10])
>>> b
[6, 7, 8, 9, 10]
>>> a.product()
120
>>> b.product()
30240
>>> a + b
[7, 9, 11, 13, 15]
>>> a * b
130
>>> c = mylist([1,3,5])
>>> c
[1, 3, 5]
>>> a + c
Traceback (most recent call last):
  File "<pyshell#12>", line 1, in <module>
    a + c
  File "C:/Users/peini/Desktop/PKU/CS/Python Programming and Application/K serie
s/K08/mylist.py", line 10, in __add__
    raise ValueError
ValueError
>>> a * c
Traceback (most recent call last):
  File "<pyshell#13>", line 1, in <module>
    a * c
  File "C:/Users/peini/Desktop/PKU/CS/Python Programming and Application/K serie
s/K08/mylist.py", line 17, in __mul__
    raise ValueError
ValueError
```