[List]

```python
# p030.py
list_1 = list()
list_2 = []

list_3 = list(['1', 2, 3.3])
list_4 = ['1', 2, 3.3]

print(list_1, list_2, list_3, list_4)
```

[List 의 indexing 과 slicing]

```
# p031.py
data1 = [1, 2, 3]
print(data1[0])
print(data1[-1])
print(data1[0] + data1[-1])

data2 = [1, 2, 3, ['a', 'b', 'c']]
print(data2[0], type(data2[0]))
print(data2[-1], type(data2[-1]))
print(data2[-1][-1], type(data2[-1][-1]))
print(data2[-1][:2], type(data2[-1][:2]))
```

[List 의 연산]

```python
# p032.py
a = [1, 2, 3]
b = [4, 5, 6]
c = a + b
print(a)
print(b)
print(c)

d = a * 3
print(d)

print(len(a))
print(len(b))
print(len(c))
print(len(d))
```

[List 의 항목 변경 및 추가]

```python
# p033.py
motorcycles = ['honda', 'yamaha', 'suzuki']
print(motorcycles)

# 변경하기
motorcycles[0] = 'bmw'
print(motorcycles)

# 추가하기
motorcycles.append('vespa')
print(motorcycles)

# 삽입하기
motorcycles.insert(0, 'daelim')
print(motorcycles)
```

[List 의 항목 삭제 - 1]

```python
# p034.py
motorcycles = ['honda', 'yamaha', 'suzuki', 'bmw', 'ducati', 'vespa', 'kia']

del motorcycles[2]
print(motorcycles)      # 인덱싱

del motorcycles[-1]     # 인덱싱
print(motorcycles)

del motorcycles[:2]     # 슬라이싱 일부
print(motorcycles)

del motorcycles[:]      # 슬라이싱 전체, motorcycles.clear() 동일
print(motorcycles)

del motorcycles[10]     # index out of range
print(motorcycles)
```

[List 의 항목 삭제 - 2]

```python
# p035.py
motorcycles = ['honda', 'yamaha', 'suzuki', 'bmw', 'ducati', 'vespa']

popdata = motorcycles.pop()
print(motorcycles)
print(popdata)

popdata = motorcycles.pop()
print(motorcycles)
print(popdata)

popdata = motorcycles.pop(2)
print(motorcycles)
print(popdata)

motorcycles.remove('yamaha')
print(motorcycles)

popdata = motorcycles.pop(10)  # index out of range
motorcycles.remove('YAMAHA')   # x not in list
```

[List 예제 – 커피 가게 매출 계산하기]

```python
# p037.py
price = [2000, 3000, 3500]  # list([2000, 3000, 3500])
number = []                 # list()
number.append(int(input("아메리카노 판매 개수:")))
number.append(int(input("카페라떼 판매 개수:")))
number.append(int(input("카푸치노 판매 개수:")))

sales = price[0] * number[0]
sales = sales + (price[1] * number[1])
sales = sales + (price[2] * number[2])

print("총 매출:", sales, "원")
```

[if 와 관련 있는 연산자]

#17, 20, 21 라인은 오류가 아님

```
1   # p038.py
2   toeic = int(input("TOEIC:"))
3   age = int(input("AGE:"))
4   grade = int(input("GRADE:"))
5   temp = int(input("TEMPERATURE:"))
6   height = int(input("HEIGHT:"))
7   socnum = input("SOC NUMBER:")
8
9   f = '-' in socnum
10  g = '-' not in socnum
11
12  a = toeic >= 800 and age < 30
13  b = toeic >= 800 or age < 30
14  d = temp < 10 or temp > 28
15
16  c = not (age == 1) and toeic < 600
17  #c = age != 1 and toeic < 600
18
19  e = height >= 120 and height <= 160
20  # e = 120 <= height <= 160
21  # e = not height < 120 and height <= 160
```

[if 와 관련 있는 수식]

```python
# p039.py
car = 'KIA'
print(car == 'Kia')
print(car.lower() == 'kia')
print(car.lower() != 'bmw')
print('*' * 30)

myage = 22
yourage = 19
print(myage >= 21 and yourage >= 21)
print(myage >= 21 or yourage >= 21)
print('*' * 30)

cars = ['audi', 'tesla', 'benz', 'kia', 'lincoln', 'hyundai']
print(car in cars)
print(car not in cars)
print(car.lower() in cars)
print(car.lower() not in cars)
print('*' * 30)

t1 = True
t2 = False
t3 = 3 <= 2
t4 = 5 != 3
year = 2021  # 2020으로 바꾸면?
t5 = ((year % 4 == 0) and (year % 100 != 0)) or (year % 400 == 0)
print(t1, t2, t3, t4, t5)
```

[예제:주민등록번호에서 성별 추출하기]

```python
# p040.py
soc_number = input("주민등록번호:")
gender = int(soc_number[7]) % 2

if gender == 0:
    msg = "여성"

if gender == 1:
    msg = "남성"

print(f"성별 : {msg}")
```

[예제:학번 분석하기]

```python
# p041.py
stu_number = input("학번:")
data1 = stu_number[0]
data2 = stu_number[1]
data3 = stu_number[2:4]

if data1 == "1":
    school = "학부"
if data1 == "2":
    school = "대학원"

if data2 == "1":
    year = "19" + data3
if data2 == "2":
    year = "20" + data3

print(f"소속:{school} 입학년도:{year}")
```

[예제:주민등록번호에서 성별 추출하기 elif]

```python
# p042.py
soc_number = input("주민등록번호:")
gender = int(soc_number[7]) % 2

if gender == 0:
    msg = "여성"
else:
    msg = "남성"

print(f"성별 : {msg}")
```

 # msg = “여성” if gender == 0 else “남성”

[예제:학번 분석하기 elif]

```python
# p043.py
stu_number = input("학번:")
data1 = stu_number[0]
data2 = stu_number[1]
data3 = stu_number[2:4]

if data1 == "1":
    school = "학부"
elif data1 == "2":
    school = "대학원"
else:
    school = "모름"

if data2 == "1":
    year = "19" + data3
else :
    year = "20" + data3

print(f"소속:{school} 입학년도:{year}")
```

[다양한 if 사용법 - 1]

```python
# p044.py
print("놀이동산입장권")
age = int(input("나이:"))
tp = int(input("주간입장권(1), 야간입장권(2):"))

price = 0
if age > 7:
    price = 4000
print(f"{price}원 입니다.", end="\n\n")

if age > 7:
    adult = "성인요금"
    price = 4000
else :
    adult = "영유아요금"
    price = 0
print(f"{adult}, {price}원 입니다.", end="\n\n")

if age < 7:
    adult = "영유아요금"
    price = 0
elif age < 18 :
    adult = "특별요금"
    price = 3000
elif age > 70 :
    adult = "특별요금"
    price = 3000
else :
    adult = "성인요금"
    price = 4000
print(f"{adult}, {price}원 입니다.", end="\n\n")

if age < 7:
    adult = "영유아요금"
    price = 0
elif age < 18 or age > 70:
    adult = "특별요금"
    price = 3000
else:
    adult = "성인요금"
    price = 4000
print(f"{adult}, {price}원 입니다.", end="\n\n")
```

```
if age < 7:
    adult = "영유아요금"
    price = 0
elif tp == 1 :
    if age < 18 or age > 70:
        adult = "특별요금"
        price = 3000
    else:
        adult = "성인요금"
        price = 4000
else :
    adult = "야간요금"
    price = 2000
print(f"{adult}, {price}원 입니다.", end="\n\n")
```

[다양한 if 사용법 – 2]

```
# p045.py
req_topping = ["버섯", "양파", "파인애플", "페퍼로니"]

if '버섯' in req_topping :
    print('버섯 추가!')
if '페퍼로니' in req_topping :
    print('페퍼로니 추가!')
if '치즈' in req_topping :
    print('치즈 추가!')

print("피자 완성!")

print("*" * 50)

req_topping = ["버섯", "양파", "파인애플", "페퍼로니"]

if '버섯' in req_topping :
    print('버섯 추가!')
elif '페퍼로니' in req_topping :
    print('페퍼로니 추가!')
elif '치즈' in req_topping :
    print('치즈 추가!')

print("피자 완성!")
```

[예제 – 학점 계산]

```python
# p047.py
score = int(input('점수를 입력하세요.'))

if score >= 90:         # 점수가 90점 이상이면 'A' 출력
    print('A')
elif score >= 80:       # 점수가 90점 미만 80점 이상이면 'B' 출력
    print('B')
elif score >= 70:       # 점수가 80점 미만 70점 이상이면 'C' 출력
    print('C')
elif score >= 60:       # 점수가 70점 미만 60점 이상이면 'D' 출력
    print('D')
else:                   # 점수가 60점 미만이면 'F'를 출력
    print('F')
```

[예제 - 주문 언어 시스템 선택]

```python
# p048.py
print('Good morning. Nice to meet you.')
print('Where are you from?')
print('Please select a number')
choiceNumber = int(input('1.대한민국  2.USA  3.日本 4.中國 : '))

if choiceNumber == 1:
    print('주문하시겠어요?')
elif choiceNumber == 2:
    print('Would you like to order?')
elif choiceNumber == 3:
    print('注文しますか？')
elif choiceNumber == 4:
    print('您要訂購嗎？')
else:
    print('Would you like to order?')
```

[예제 - 국가재난 지원금 수령액 검색하기]

```python
# p049.py
peopleNumber = int(input('인원수:'))

if peopleNumber == 1:
    print('300,000원 지원')
elif peopleNumber == 2:
    print('500,000원 지원')
elif peopleNumber == 3:
    print('600,000원 지원')
elif peopleNumber >= 4:
    print('900,000원 지원')
```