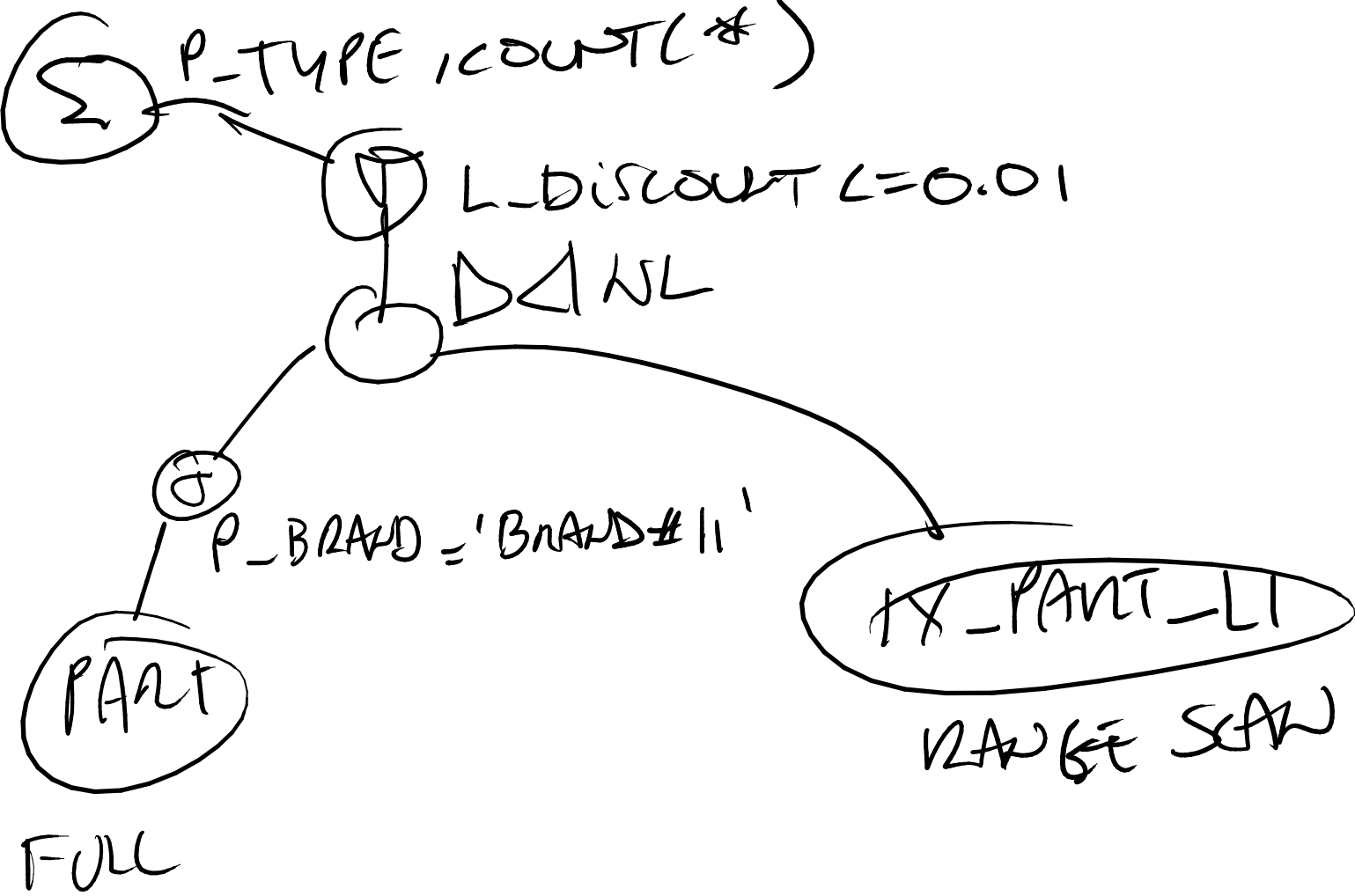
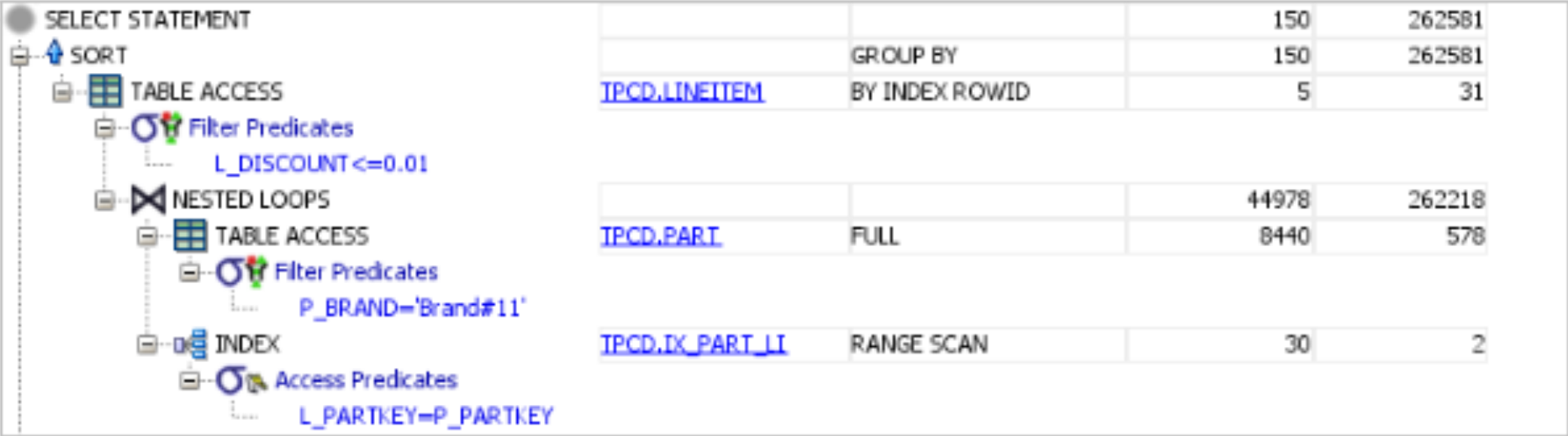


```
SELECT P_TYPE, COUNT(*)
FROM LINEITEM, PART
WHERE L_PARTKEY=P_PARTKEY AND L_DISCOUNT <=0.01 AND P_BRAND='Brand#11'
GROUP BY P_TYPE
```

Login: SID: TPCD NOMEHOST:si-oracle-11.csr.unibo.it USER: USERSI PASSWORD: USERSI

Si facciano le seguenti assunzioni e si estraggano dal DB eventuali dati mancanti:
D = 4096 byte len(P) = len(K) = 4 byte NB = 101 u = 0.69

Si assuma inoltre che ORACLE non applichi proiezioni sui risultati intermedi e che non esegua operazioni in pipeline.



$$\text{Nested Loop} = \text{NP Part} + 200\text{K}/25 * \text{costo}(\text{IX_PART_LI})$$

$$\text{NP Part} = 9271$$

$$\text{costo}(\text{IX_PART_LI}) \text{ (unclustered)} = h-1 + \text{EK}/\text{NK} * \text{NL} + \text{EK} * \text{cardenas}(\text{ER}, \text{NP})$$

$$\text{unc.} = 2 + \sup(1/200.000 * (<200.000)) + 1 * (\text{NP} * (1 - (1 - (1/\text{NP}))^{\text{ER}}))$$

$$\text{NL} = (200.000 * 4 + 6\text{M} * 4) * (4096 * 0.69)$$

$$\text{NP LineItem} = 239895$$

$$\text{ER} = 30$$

$$\text{uncl. accs} = 30 + 2 + 1 = 33$$

$$\text{Nested Loop} = 273271$$

$$\text{Sort con selezione} : (\text{NP} + \text{EP}) + 2 * \text{EP} * \sup(\log_(\text{NB}-1) \text{ EP})$$

$$\text{NP} = 240.000 * (131+113) / 4096 * 0.69 = 20721$$

$$\text{sel} = 0.01 - 0 / 0.1 = 0.1$$

$$\text{EP} = 0.1 * 20721 = 2073$$

$$\text{Sort con selezione} : 31.086$$

$$\text{Total cost: } 31.086 + 208.033 = 239119$$