1. Dado el siguiente diario:

```
[CHECKPOINT,0,[]]                [WRITE,T2,C2,100,115,150]
[START_TRANSACTION,T1,10]        [WRITE,T2,D2,110,105,160]
[START_TRANSACTION,T2,20]        [WRITE,T3,C3,110,125,170]
[WRITE,T1,A1,30,35,30]           [END_TRANSACTION,T2,180]
[WRITE,T2,A2,35,40,40]           [COMMIT,T1,190]
[START_TRANSACTION,T3,50]        [WRITE,T4,B4,30,20,200]
[WRITE,T1,B1,45,35,60]           [ROLLBACK,T2,210]
[WRITE,T3,A3,40,45,70]           [WRITE,T3,D3,100,95,220]
[WRITE,T2,B2,40,30,80]           [CHECKPOINT,230,AT]
[START_TRANSACTION,T4,90]        [END_TRANSACTION,T3,240]
[WRITE,T1,C1,90,105,100]         [WRITE,T4,C4,120,135,250]
[WRITE,T3,B3,35,25,110]          [COMMIT,T3,260]
[WRITE,T4,A4,45,50,120]          [WRITE,T4,D4,90,85,270]
[WRITE,T1,D1,120,115,130]        [END_TRANSACTION,T4,280]
[END_TRANSACTION,T1,140]         [COMMIT,T4,290]
```

   Considera las siguientes opciones:

   - Fallo en los instantes de tiempo 75, 155, 225 o 285.
   - Tamaño de bloque: 3, 5 u 8 entradas.
   - Actualización del diario: diferida o inmediata.
   - Actualización de la base de datos: diferida o inmediata.

   Indica y justifica adecuadamente qué acciones debería realizar el sistema de recuperación en cada uno de los casos posibles. Entre otras cuestiones, indica el algoritmo que estás usando en caso y cómo se aplica paso por paso.

2. Dado el siguiente diario:

```
[CHECKPOINT,0,[]]                [WRITE,T7,V,169,120,220]
[START_TRANSACTION,T6,10]        [CHECKPOINT,230,AT2]
[START_TRANSACTION,T3,20]        [WRITE,T4,L,38,20,240]
[START_TRANSACTION,T4,30]        [WRITE,T6,S,57,99,250]
[START_TRANSACTION,T2,40]        [ROLLBACK,T7,260]
[START_TRANSACTION,T7,50]        [WRITE,T1,C,27,105,270]
[START_TRANSACTION,T8,60]        [START_TRANSACTION,T5,280]
[WRITE,T3,H,44,36,70]            [WRITE,T5,N,71,112,290]
[WRITE,T2,D,171,100,80]          [WRITE,T8,X,177,27,300]
[WRITE,T3,I,116,96,90]           [WRITE,T2,F,84,189,310]
[WRITE,T8,W,30,8,100]            [WRITE,T5,O,101,187,320]
[CHECKPOINT,110,AT1]             [WRITE,T4,M,105,25,330]
[WRITE,T7,T,58,105,120]          [COMMIT,T4,340]
[WRITE,T3,J,33,19,130]           [CHECKPOINT,350,AT3]
[WRITE,T6,Q,69,67,140]           [WRITE,T5,P,125,195,360]
[COMMIT,T3,150]                  [COMMIT,T5,370]
[WRITE,T4,K,26,129,160]          [COMMIT,T6,380]
[WRITE,T7,U,79,140,170]          [COMMIT,T1,390]
[START_TRANSACTION,T1,180]       [WRITE,T2,G,86,82,400]
[WRITE,T1,A,101,6,190]           [COMMIT,T2,410]
[WRITE,T6,R,61,14,200]           [WRITE,T8,Y,74,74,420]
[WRITE,T1,B,22,190,210]          [COMMIT,T8,430]
```

Considera las siguientes opciones:

- Fallo en los instantes de tiempo 205, 305 o 405.
- Tamaño de bloque: 4, 6 u 9 entradas.
- Actualización del diario: diferida o inmediata.
- Actualización de la base de datos: diferida o inmediata.

Indica y justifica adecuadamente qué acciones debería realizar el sistema de recuperación en cada uno de los casos posibles. Entre otras cuestiones, indica el algoritmo que estás usando en caso y cómo se aplica paso por paso.

3. Dado el siguiente diario:

```
[CHECKPOINT,0,[]]
[START_TRANSACTION,T3,10]
[WRITE,T3,H,44,36,20]
[START_TRANSACTION,T2,30]
[WRITE,T2,D,171,100,40]
[START_TRANSACTION,T8,50]
[WRITE,T3,I,116,96,60]
[WRITE,T8,W,30,8,70]
[CHECKPOINT,80,AT1]
[START_TRANSACTION,T7,90]
[WRITE,T7,T,58,105,100]
[START_TRANSACTION,T1,110]
[WRITE,T1,A,101,6,120]
[START_TRANSACTION,T4,130]
[WRITE,T3,J,33,19,140]
[COMMIT,T3,150]
[START_TRANSACTION,T6,160]
[WRITE,T4,K,26,129,170]
[WRITE,T6,Q,69,67,180]
[CHECKPOINT,190,AT2]
[WRITE,T1,B,22,190,200]
[WRITE,T7,U,79,140,210]
[WRITE,T6,R,61,14,220]
[WRITE,T1,C,27,105,230]
[ROLLBACK,T1,240]
[WRITE,T7,V,169,120,250]
[WRITE,T4,L,38,20,260]
[WRITE,T6,S,57,99,270]
[COMMIT,T7,280]
[START_TRANSACTION,T5,290]
[WRITE,T5,N,71,112,300]
[COMMIT,T6,310]
[WRITE,T8,X,177,27,320]
[WRITE,T2,F,84,189,330]
[WRITE,T5,O,101,187,340]
[WRITE,T4,M,105,25,350]
[COMMIT,T4,360]
[CHECKPOINT,370,AT3]
[WRITE,T5,P,125,195,380]
[ROLLBACK,T5,390]
[WRITE,T2,G,86,82,400]
[COMMIT,T2,410]
[WRITE,T8,Y,74,74,420]
[COMMIT,T8,430]
```

Considera las siguientes opciones:

- Fallo en los instantes de tiempo 255, 355 o 405.
- Tamaño de bloque: 3, 4 u 7 entradas.
- Actualización del diario: diferida o inmediata.
- Actualización de la base de datos: diferida o inmediata.

Indica y justifica adecuadamente qué acciones debería realizar el sistema de recuperación en cada uno de los casos posibles. Entre otras cuestiones, indica el algoritmo que estás usando en caso y cómo se aplica paso por paso.

4. Dado el siguiente diario:

```
[CHECKPOINT,[],0]
[START_TRANSACTION,T7,10]
[START_TRANSACTION,T1,20]
[WRITE,T1,A,34,44,30]
[WRITE,T7,S,75,118,40]
[START_TRANSACTION,T5,50]
[START_TRANSACTION,T8,60]
[WRITE,T8,V,116,39,70]
[WRITE,T1,B,90,27,80]
[WRITE,T5,M,130,70,90]
[START_TRANSACTION,T2,100]
[START_TRANSACTION,T3,110]
[WRITE,T8,W,171,91,120]
[WRITE,T3,G,19,68,130]
[WRITE,T3,H,59,7,140]
[START_TRANSACTION,T6,150]
[WRITE,T8,X,138,18,160]
[WRITE,T5,N,70,128,170]
[WRITE,T2,D,13,51,180]
[WRITE,T6,P,66,9,190]
[WRITE,T5,O,4,119,200]
[COMMIT,T8,210]
[WRITE,T7,T,136,189,220]
[WRITE,T3,I,173,142,230]
[CHECKPOINT,AT1,240]
[WRITE,T7,U,29,122,250]
[ROLLBACK,T3,260]
[START_TRANSACTION,T4,270]
[WRITE,T6,Q,73,130,280]
[COMMIT,T5,290]
[COMMIT,T7,300]
[WRITE,T1,C,165,124,310]
[WRITE,T6,R,21,103,320]
[WRITE,T4,J,158,144,330]
[WRITE,T4,K,58,92,340]
[CHECKPOINT,AT2,350]
[WRITE,T2,E,164,26,360]
[COMMIT,T1,370]
[WRITE,T2,F,175,190,380]
[ROLLBACK,T6,390]
[COMMIT,T2,400]
[WRITE,T4,L,111,19,410]
[COMMIT,T4,420]
```

Considera las siguientes opciones:

- Fallo en los instantes de tiempo 235, 345 o 415.
- Tamaño de bloque: 4, 5 u 8 entradas.
- Actualización del diario: diferida o inmediata.
- Actualización de la base de datos: diferida o inmediata.

Indica y justifica adecuadamente qué acciones debería realizar el sistema de recuperación en cada uno de los casos posibles. Entre otras cuestiones, indica el algoritmo que estás usando en caso y cómo se aplica paso por paso.