#### 存储管理

1. 磁盘数据存放

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 块0 | 块1 | 块2 | 块3 | …… |

8KB

|  |
| --- |
| Freespacestart |
| Freespaceend |
| Link1 |
| Link2 |
| …… |
| Freespace |
| …… |
| Tuple2 |
| Tuple1 |

4B

4B

4B

4B

4B+AttrNum\*8B

4B+AttrNum\*8B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AttrNum | Attr 1 | Attr 2 | …… | Attr n |

1. 缓冲区

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 缓冲区0 | 缓冲区1 | 缓冲区2 | …… | 缓冲区999 |

8KB

总大小8KB\*1000=8000KB

1. 主要变量及方法

final private int attrstringlen=8; //属性最大字符串长度为8Byte

final private int bufflength=1000;//缓冲区大小为1000个块

final private int blocklength=8\*1024;//块大小为8KB

private List<buffPointer> BuffPointerList = new ArrayList<>();//构建缓冲区指针表

private ByteBuffer MemBuff=ByteBuffer.allocateDirect(blocklength\*bufflength);//分配blocklength\*bufflength大小的缓冲区

private boolean[] buffuse=new boolean[bufflength];//缓冲区可用状态表，true为可用

private int blockmaxnum=-1;//最大的块号

private int[] blockspace=new int[10];//块空闲空间信息

private buffPointer load(int block) //从磁盘加载块

private boolean save(buffPointer blockpointer) //将块存入磁盘

public Tuple readTuple(int blocknum,int offset)//读元组

public int[] writeTuple(Tuple t)//写元组

public void UpateTuple(Tuple tuple,int blockid,int offset)//更新元组

private buffPointer creatBlock()//创建块

private buffPointer findBlock(int x)//寻找块