***WORKSHOP3***

***Dương Văn Bi***

***19it5***

***Mã SV 19it298***

***Bài 1:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SVIEN** | TEN | MASV | NAM | KHOA |
|  | Sơn | 17 | 1 | CNTT |
| Bảo | 8 | 2 | CNTT |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MHOC** | TEN\_MH | MAMH | TINCHI | KHOA |
|  | Nhập môn tin học | COSC1310 | 4 | CNTT |
| Cấu trúc dữ liệu | COSC3320 | 4 | CNTT |
| Toán rời rạc | MATH2410 | 3 | TOAN |
| Cơ sở dữ liệu | COSC3380 | 3 | CNTT |

|  |  |  |
| --- | --- | --- |
| **DKIEN** | MAMH | MAMH\_TRUOC |
|  | COSC3380 | COSC3320 |
| COSC3380 | MATH2410 |
| COSC3320 | COSC1310 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **K\_HOC** | MAKH | MAMH | HOCKY | NAM | GV |
|  | 85 | MATH2410 | 1 | 86 | Kim |
| 92 | COSC1310 | 1 | 86 | An |
| 102 | COSC3320 | 2 | 87 | Niên |
| 112 | MATH2410 | 1 | 87 | Chân |
| 119 | COSC1310 | 1 | 87 | An |
| 135 | COSC3380 | 1 | 87 | Sơn |

|  |  |  |  |
| --- | --- | --- | --- |
| **KQUA** | MASV | MAKH | DIEM |
|  | 17 | 112 | 8 |
| 17 | 119 | 6 |
| 8 | 85 | 10 |
| 8 | 92 | 10 |
| 8 | 102 | 8 |
| 8 | 135 | 10 |

***Bai 2:***

**INSERT(SVIEN; "Nam", 25, 2, "CNTT")**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SVIEN** | TEN | MASV | NAM | KHOA |
|  | Sơn | 17 | 1 | CNTT |
| Bảo | 8 | 2 | CNTT |
|  | Nam | 25 | 2 | CNTT |

***Bài 3:***

**INSERT(KQUA; 25,102,7)**

**INSERT(KQUA; 25,135,9)**

|  |  |  |  |
| --- | --- | --- | --- |
| **KQUA** | MASV | MAKH | DIEM |
|  | 17 | 112 | 8 |
| 17 | 119 | 6 |
| 8 | 85 | 10 |
| 8 | 92 | 10 |
| 8 | 102 | 8 |
| 8 | 135 | 10 |
|  | 25 | 102 | 7 |
|  | 25 | 135 | 9 |

***Bài 4:***

**MODIFY(KQUA;MASV,8=8;MAKH,102=102;DIEM,8=9)**

|  |  |  |  |
| --- | --- | --- | --- |
| **KQUA** | MASV | MAKH | DIEM |
|  | 17 | 112 | 8 |
| 17 | 119 | 6 |
| 8 | 85 | 10 |
| 8 | 92 | 10 |
| 8 | 102 | 9 |
| 8 | 135 | 10 |
|  | 25 | 102 | 7 |
|  | 25 | 135 | 9 |

***Bài 5:***

**DELETE (KQUA; MASV= 8, MAKH= 135, DIEM= 10)**

|  |  |  |  |
| --- | --- | --- | --- |
| **KQUA** | MASV | MAKH | DIEM |
|  | 17 | 112 | 8 |
| 17 | 119 | 6 |
| 8 | 85 | 10 |
| 8 | 92 | 10 |
| 8 | 102 | 9 |
|  | 25 | 102 | 7 |
|  | 25 | 135 | 9 |

***Bài 6:***

**π TEN(SVIEN)**

|  |
| --- |
| TEN |
| Sơn |
| Bảo |
| Nam |

***Bài 7:***

**π TEN\_MH, TINCHI(MHOC)**

|  |  |
| --- | --- |
| TEN\_MH | TINCHI |
| Nhập môn tin học | 4 |
| Cấu trúc dữ liệu | 4 |
| Toán rời rạc | 3 |
| Cơ sở dữ liệu | 3 |

***Bai 8:***

**σMASV=8(KQUA)**

|  |  |  |  |
| --- | --- | --- | --- |
| **KQUA** | MASV | MAKH | DIEM |
|  | 8 | 85 | 10 |
| 8 | 92 | 10 |
| 8 | 102 | 9 |

***Bài 9:***

**Q←ρ(MAMH\_C) (π MAMH (σMAMH= “COSC3320” (MHOC)))**

**πMAMH\_TRUOC(DKIEN|×|MAMN=MAMH\_C(Q))**

|  |  |  |
| --- | --- | --- |
|  | COSC3320 | COSC1310 |

***Bài 10:***

**Q←ρ(MAMH\_C) (π MAMH (σMAMH= “COSC3320” (MHOC)))**

**πMAMH(DKIEN|×|MAMN\_TRUOC=MAMH\_C(Q))**

|  |  |
| --- | --- |
| MAMH | MAMH\_TRUOC |
| COSC3380 | COSC3320 |

***Bài 11:***

**Q←πMASV, MAKH(σDIEM>7(KQUA))**

**Q1←ρ(MAKH\_H, MAMH) (π MAKH, MAMH(K\_HOC))**

**Q2←ρ(MASV\_H, MAMH) ( πMASV, MAMH(Q|×|MAKH=MAKH\_H(Q1)))**

**Q3←ρ( MASV\_H, MAMH\_H) (πTEN, MAMH (SVIEN|×|MASV=MASV\_H(Q2)))**

**πTEN, TEN\_MH(Q3|×|MASV\_H=MASV(MHOC))**

|  |  |  |
| --- | --- | --- |
| **SVIEN** | TEN | TEN\_MH |
|  | Sơn | Toán rời rạc |
| Bảo | Toán rời rạc |
|  | Bảo | Nhập môn tin học |
|  | Bảo | Cấu trúc dữ liệu |
|  | Nam | Cơ sở dữ liệu |

***Bài 12:***

**Q←πMASV, MAKH(KQUA))**

**Q1←ρ(MAKH\_H, MAMH) (π MAKH, MAMH(K\_HOC))**

**Q2←ρ(MASV\_H, MAMH) ( πMASV, MAMH(Q|×|MAKH=MAKH\_H(Q1)))**

**Q3←ρ( MASV\_H, MAMH\_H) (πTEN, MAMH (SVIEN|×|MASV=MASV\_H(Q2)))**

**Q4←πTEN, TEN\_MH(Q3|×|MASV\_H=MASV(MHOC))**

**πTEN (σ TEN\_MH = “Toán rời rạc” (Q4))**

|  |
| --- |
| TEN |
| Sơn |
| Bảo |

***Bài 13:***

**Q←ρ(TEN\_MH, MAMH\_C) (π TEN\_MH, MAMH (σMAMH= “COSC3380” (MHOC)))**

**πTEN\_MH(DKIEN|×|MAMN=MAMH\_C(Q))**

|  |
| --- |
| TEN\_MH |
| Cấu trúc dữ liệu |
| Toán rời rạc |

***Bài 14:***

**Q←ρ(TEN\_MH, MAMH\_C) (π TEN\_MH, MAMH (σMAMH= “COSC3380” (MHOC)))**

**πTEN\_MH(DKIEN|×|MAMN\_TRUOC=MAMH\_C(Q))**

|  |
| --- |
| TEN\_MH |

***Bài 15:***

**Q1←ρ(MAKH, HOCKY) (π MAKH, HOCKY(K\_HOC))**

**Q2←ρ(MASV, HOCKY, NIENHOC, DIEM) ( πMASV, HOCKY, NAM, DIEM(KQUA|×|MAKH=MAKH(Q1)))**

**Q3←ρ(TEN, HOCKY, NIENHOC, DIEM) (πTEN, HOCKY, NAM, DIEM (SVIEN|×| MASV=MASV(Q2)))**

**ρKETQUA (TEN, HOCKY, NIENHOC, DIEMTB) (TEN, HOCKY, NIENHOC ℱ AVG(DIEM)(Q3))**

|  |  |  |  |
| --- | --- | --- | --- |
| TEN | HOCKY | NIENHOC | ĐIEMTB |
| Bảo | 1 | 86 | 10 |
| Sơn | 1 | 87 | 7 |
| Nam | 1 | 87 | 9 |
| Bảo | 2 | 87 | 9 |

***Bài 16:***

**Q1←ρ(MAKH, HOCKY) (π MAKH, HOCKY(K\_HOC))**

**Q2←ρ(MASV, HOCKY, NIENHOC, DIEM) ( πMASV, HOCKY, NAM, DIEM(KQUA|×|MAKH=MAKH(Q1)))**

**Q3←ρ(TEN, HOCKY, NIENHOC, DIEM) (πTEN, HOCKY, NAM, DIEM (SVIEN|×| MASV=MASV(Q2)))**

**Q4←ρKETQUA (TEN, HOCKY, NIENHOC, DIEMTB) (TEN, HOCKY, NIENHOC ℱ AVG(DIEM)(Q3))**

**ρSVCAONHAT(TEN) (π TEN ((TEN ℱ MAX(DIEMTB)(Q4)))**

|  |
| --- |
| TEN |
| Bảo |

***Bài 17:***

**Q←πMASV (ℱCOUNT(MAKH) (KQUA))\*MHOC**

**Q1←ρ(TEN, MASV) (πTEN, MASV (SVIEN|×| MASV=MASV (Q)))**

**πTEN(Q1)**

|  |
| --- |
| TEN |
| Bảo |