```
dlagram 1 (1)
                                 School results
                                                               ·Grade
     Student
                                   Subject
                                                             + calcutate
                                  - Subject name
    - Student Id
                                                                  Totall
     - name
                                 - marks
     - subjects
                                                             + conculate
                        Aggregation
                                 + get subject name()
                                                               Average()
     + add. Subjects ()
                           +get marks()
                                                            + generate
    + get · Subjects()
                                                              Report()
                                                  (used by)
  Object diagram.
2)
      John & Student
       Student Id > 1
       name > "John"
       subject = [math,
             Science
                                  Science: Subject
  Maths: Subject
                                   Subname 2
  Subname =
                                        " Science "
     "maths"
                                   marks = 85.
    marks = 90
```

| 2) | | | | 4 | 7 | 14 |
|---------------|---------------------------------------|----------------|-----------|--------------|---|--------------|
| 3) | Student | Gradecal | weator | Subject | minibally | |
| | | | | 1 | tin sh | |
| | reques | Grade - | getma | rks(math)-1 | , 71. 1. | 1 |
| | $\bar{J}_{1} = \bar{J}_{1}$ | 4.41.5 | £ 90 | | 1 m 1. | .17 - |
| La. | | | 1 | KIRCIE ME) | 41. | i., |
| | · · · · · · · · · · · · · · · · · · · | | E 85 | P A S | 4 (20) | 112 5 |
| | 7 V 05 | (- 1 - 13 - 1 | | | | |
| | ~"Grade | : A" | - K-Avg | 17.5 CA) | OB SHE | |
| - 11 | | | İ | | A 71.1 (2) (2) (2) | 30.1 |
| 201 | Grocery store | blu | | | | |
| <u> 3</u> 0) | 1 | , | | | | 0.0 |
| I) | Clan diagram | 5) - | ÷ , | | | |
| - • | Customer | Prod | uct | Biugenera | for | taple (|
| | | | | | (Therebe as the | 1.7 |
| | -customerid | ' - | ducttd | + calculate | | 1 |
| | - name | - na | | + generate | BINC) | 1 |
| | - purchased product | - pri | ce | | ans Jan | n '' |
| | | + get P | vice | | ityer : [.] | |
| | v | 4 900 | 2 | | 20121.5 | |
| | = 2 m | | | | | ! |
| | | position | | | | |
| | | y owns | ↓ | | | Ţ. |
| | P | roduct | Brusa | ies austomer | | Mount |
| | | | | product. | at four | - named 1 |
| | | | (Atation) | 1 | | 10.131. 14.0 |
| | | min D | T) | | 10 mg | (1) |
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| | 1. | | | | 1 26 - | 12000 |
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| | | | | | | |
| | 40 | | | | | |

| Object dlagram | |
|------------------------|---------------------|
| alice i customer | • |
| - customerid: 10 | |
| -name : "Alice" | |
| purchased product | |
| ¿ Lapples, mick) | |
| | |
| | |
| apple: Produce Milk: p | roduct |
| Product 1d = 1 Product | fld 22 |
| 1 - 201 - 40- 111 | = "milk" |
| price = 3 price = | = 2.0 |
| quantity = 2 quantity | ty = 1 |
| | |
| Sequence dragram | |
| Toustomer Bru ge | On duct |
| 1 1314 96 | nerator Product |
| | |
| 1: Checkouti) | |
| | 2: get Products () |
| | 3: return product() |
| | apple, mtlk |
| | |
| | 4. Calculate price. |
| | |
| | 5. generate btl. |
| 6. display blu. | |
| | _ • |
| | |

Object relationships. Library & books (Aggregation) Library BOOK - books: -title: string ArrayList < BOOKS -author: string. + add Book (book) + remove Book (book) + gettitle () + Ust Book (book) + get Author() aggregation. Bank Account Holder (Association) Bank Customer name : string - name : string accounts List - customer: List Association + view Balance () + Open Account() t transfermones() + Process Loan () Account - acc no: String - balance i double

| | and the same of the same | 1 |
|---|---|--|
| Company | Department | Employer |
| | | - H: 1 17t |
| name: string | - name: String | - name: sq |
| department: | 2 1 3 h, 1- | - Position |
| Ust < department | - Employees Ust Employee> | String |
| P | Unitemplojees | |
| * 1 | 3 | Ser Orner of F |
| | 2.1 45 mg/ 2.1 2.2 4.2 4.2 4.2 4.2 4.2 4.2 4.2 4.2 4.2 | a Comment of the |
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| | (composition) | |
| | | 12 |
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| f Problems | | |
| f Problems | The first of the section | · (\ Q. Nass) |
| | with Course | ······································ |
| · · · · · · · · · · · · · · · · · · · | , | en a |
| School E. St | idents with Course | |
| School E. Str | dents with Course | The sount |
| School E. Str | idents with Course | 7 |
| School E. Str | dents with Course | Course |
| School E. Str School -name: String -student; | Student - 12: Interest - name: String | Course -code: Str |
| School E. Str | Student - 12: Intarior | Course -code: str |
| School E. Str School -name: String -student: Ust < Students | Student - 12: Interest - 12: String | Course -code: Str |
| School E. Str School -name: String -student: Cist < students > t enrou student() | Student - 12: Intarior | Course -code: str -title str -student: Ust> stu |
| School E. Str School -name: String -student: Ust < Students | Student - 12: Int - name: string - course: list < course. | Course -code: Str -title str -student: Ust> student dd student |
| School E. Str School -name: String -student: Cist < students > t enrou student() | Student Student - 12: Int - name: String - course: Ust < course: + enroll course() + view course() | Course -code: str -title str -student: Ust> stu |
| School E. Str School -name: String -student: Cist < students > t enrou student() | Student Student - 12: Int - name: string - course: ust < course. + enrou course() | Course -code: Str -title str -student: Ust> student dd student |
| School E. Str School -name: String -student: Cist < students > t enrou student() | Student Student - 12: Int - name: String - course: Ust < course: + enroll course() + view course() | Course -code: Str -title str -student: cust> student cust> student t add student t Lut student |

| University faculty | 9 & Department | Max q a |
|---------------------|------------------|------------------------------|
| University | Department | Facusty |
| name: Strong | name: string | -1d: Int |
| departments: | - faculty member | - name i |
| List < department > | List < faming | String |
| | memben> | - specialty: |
| | nt vo | String. |
| | | |
| | at the second | 1 |
| Compasit | ton. | |
| 2 3 19, 1 | 2.1 | ation |
| • | 1.4 | |
| Hospital, Doctor | And Patients. | of the same in the |
| Hospital | Doctor | Patient |
| - name : string | - id: Int | -id: int |
| | - name: strong | - name : String |
| + Adddoctor() | - Speciality: | -11/4 41/35 112 |
| + Add patient() | string | + describe |
| 1000 De 1 1000 De 1 | 4 Consult | Symptom() |
| 1.0 | (Pattent) | + receive Prescription () |
| | | 1 |
| 1 | = 2 | 1 |
| - 1 - 1 | | |
| | 9700 3 | |
| | | |
| | Association. | 1, T |
| 8 | and a start | - 3 |

with order, customer Product 4) B- commerce Product. order Cuttomer - Product Id: MT - Order Id : Int - Idilnt -- name: string - date; string - name : String - price : float + add Product() + placeorder() + get Price() + calculatetotall) + Viewbistory() Order Aggregate Curtomer product. Create order Management System 5) University. ·Professor Course Student - Profid: int' - Course Lode : - Student Id : Int - name : string string . - name : String - title: string - department! string. tenvollcourse() +addstudent() + view coursel) + Assign coursel) + Assign Professor + teach coursel) Course Aggregate Student Association through Course.