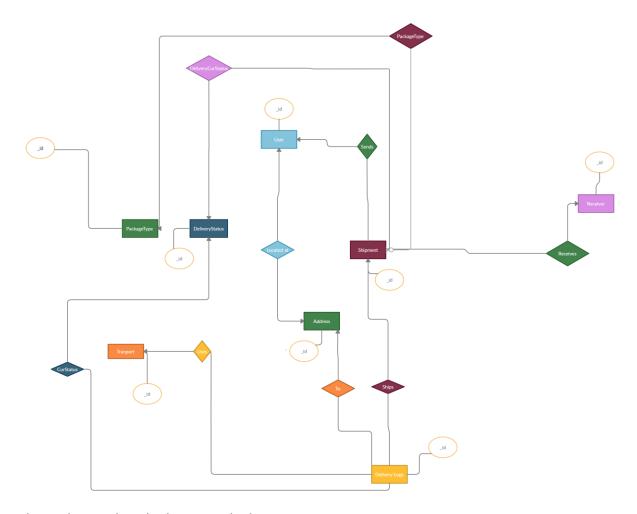
1. ER Diagram



The ER diagram has also been attached.

The ER diagram contains 8 entity sets with their attributes except the primary key which is included as the only attribute. This is done to make the diagram understandable and less cluttered.

ENTITIES:

- 1. User Entity: Contains registered and un-registered users also taking attributes like firstname, last name, phone, debts, total money spent etc.
- 2. Address: Contains address info with _id as the primary key and stores information like pincode, country, state, locality etc.
- 3. Delivery Logs: This contains information for retrieving where a package was at any time during delivery. It logs an entry whenever a package is boarded on any transport. This contains attributes like start_time and cost_incurred during that stint of the transport.

- 4. Delivery Status: This entity contains a list of states that the delivery can be in, for example, pending, cancelled, ordered, delivered etc. This is generally implemented on the server side but as we have no server thus this list stored here only
- 5. Package Type: This entity stores what type of package the shipping is. It can have various types like hazardous, international, delicate, large etc. This is another example of functionality that would have been implemented on the server, but as there is no server this entity exists
- 6. Receivers: This entity contains all needed information about the receivers i.e. to whom the package is addressed to. This contains attributes like name, phone_number and whether registered or not.
- 7. Shipment: One of the important entities which encapsulate a package. It contains all details about the package including the package type, cost and various other required data.
- 8. Transport: Entity which contains information regarding the type of transport used to deliver packages, their model number, identification number etc.

RELATIONSHIPS:

1. Sends

- a. One to Many relationship
- b. A user can send many shipments but a single shipment is sent by a unique user only

2. Receives

- a. One to Many relationship
- b. A Receiver can receive multiple shipments but a single shipment can be received by one receiver only.

3. Package Type

- a. One to Many relationship
- b. A package type can have multiple shipments but a single shipment is of a particular package type only

4. DeliveryCurStatus

- a. One to Many relationship
- b. A delivery status might be applied to multiple shipments but a single shipment has a particular delivery status.

5. LocatedAt

- a. One to Many relationship
- b. A user can have a single address but multiple users might have the same address (For example they are family)

6. Uses:

- a. One to Many relationship
- b. A transport can be used to ship in multiple logs but a single log only one transport is used

7. CurStatus

a. One to Many relationship

b. A log can have only one delivery status but a single delivery status might be in multiple logs.

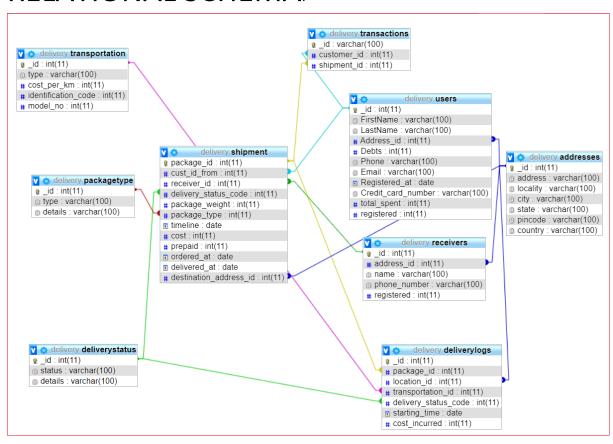
OPTIMIZATIONS:

As we can see most of the relationships are one to many thus a new table might not be needed for every relation, instead what we could do is to store the one part in the table of the many part.

Below the is the relational schema for the same.

Indexes have been added to attributes which are considered likely to be the search key.

RELATIONAL SCHEMA:



- 1. Users:
 - a. Indexes: _id, FirstName, LastName, Address_id, Email, Credit_card_number
 - b. Primary Key: _id
 - c. Foreign Key: address_id
- 2. Addresses:
 - a. Indexes: _id
 - b. Primary Key: _id
 - c. Foreign Key: None
- 3. Receivers:
 - a. Indexes: _id, address_id
 - b. Primary Key: _id
 - c. Foreign Key: address_id
- 4. Transactions:
 - a. Indexes: _id, customer_id, shipment_id
 - b. Primary Key: _id
 - c. Foreign Key: shipment_id, customer_id
- 5. Shipment
 - a. Indexes: package_id, cust_id_from, receiver_id, delivery_status_code, destination_address_id, package_type
 - b. Primary Key: package id
 - c. Foreign Key: cust_id_from, delivery_status, destination_address_id, package_type, receiver_id
- 6. Transportation:
 - a. Indexes: _id, identification_code
 - b. Primary Key: _id
 - c. Foreign Key: None
- 7. PackageType and DeliveryStatus:
 - a. Primary Key & Index on _id
 - b. No foreign key
- 8. Delivery Logs
 - a. Indexes: _id, delivery_status_code, location_id, package_id, transportation_id
 - b. Primary Key: _id
 - c. Foreign Key: delivery_status_code, location_id, package_id, transportation_id

PROCEDURES:

Procedures written for all the necessary queries mentioned in the doc.

SQL QUERIES

CODE FOR DATA GENERATION AND SQL QUERIES INCLUDED IN THE FOLDER.

File package_management_sql.sql can be imported

```
SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET AUTOCOMMIT = 0;
START TRANSACTION;
SET time_zone = "+00:00";
/*!40101    SET @OLD CHARACTER    SET RESULTS=@@CHARACTER    SET RESULTS */;
/*!40101 SET @OLD COLLATION CONNECTION=@@COLLATION CONNECTION */;
DELIMITER $$
CREATE DEFINER=`root`@`localhost` PROCEDURE `CostChargedByService` (IN `shipme
nt_id` INT) NO SQL
SELECT transportation.type, SUM(transportation.cost_per_km) as Total FROM deli
verylogs JOIN transportation ON
deliverylogs.transportation_id = transportation._id && deliverylogs.package_id
= shipment id$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `findCustomersForDamagedTransport`
(IN `truck id` VARCHAR(100), IN `time` DATE) BEGIN
```

```
SELECT users.FirstName FROM deliverylogs JOIN transactions ON deliverylogs.pac
kage_id = transactions.shipment_id JOIN users ON transactions.customer_id = us
ers._id JOIN transportation ON transportation._id = deliverylogs.transportatio
n id
WHERE transportation.identification_code = truck_id && deliverylogs.starting_t
ime < time;</pre>
END$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `findLastSuccessfulDeliveryByVehic
le` (IN `vehicle_id` VARCHAR(100), IN `time` DATE) BEGIN
SELECT shipment.package id, shipment.cust id from, shipment.receiver id, shipm
ent.delivery_status_code, shipment.package_weight, shipment.package_type, ship
ment.timeline, shipment.cost, shipment.prepaid, shipment.ordered_at, shipment.
delivered_at, shipment.destination_address_id FROM deliverylogs JOIN transport
ation ON deliverylogs.transportation_id = transportation._id
JOIN shipment ON shipment.package_id = deliverylogs.package_id
WHERE deliverylogs.starting_time < time && transportation.identification_code
= vehicle id
ORDER BY deliverylogs.starting_time
LIMIT 1;
END$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `findReceiversFromDamagedTransport
 (IN `vehicle id` VARCHAR(100), IN `time` DATE) BEGIN
  SELECT receivers.name FROM deliverylogs JOIN shipment ON deliverylogs.packag
e_id = shipment.package_id JOIN receivers ON receivers._id = shipment.receiver
_id JOIN transportation ON transportation._id = deliverylogs.transportation_id
   WHERE transportation.identification_code = vehicle_id && deliverylogs.star
ting_time < time;</pre>
END$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `getCustomerDetails` (IN `cust_id`
INT) NO SQL
SELECT * FROM users WHERE users._id = cust_id$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `getDelayedShippings` () NO SQL
SELECT * FROM shipment WHERE shipment.delivered at > shipment.timeline$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `getMostSpendingCustomer` () BEGI
 SELECT * FROM users ORDER BY users.total_spent DESC LIMIT 1;
END$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `selectAllTransactions` () BEGIN
 SELECT * FROM transactions;
```

```
END$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `streetWithMostCustomers` () BEGI
SELECT addresses.locality, COUNT(*) as NumberOfOrders FROM shipment JOIN addre
sses ON shipment.destination_address_id = addresses._id
GROUP BY addresses.locality
ORDER BY NumberOfOrders DESC
LIMIT 1;
END$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `TotalCost` (IN `shipment_id` INT)
 NO SQL
SELECT SUM(transportation.cost_per_km) + shipment.cost as Total FROM deliveryl
ogs JOIN transportation ON
deliverylogs.transportation_id = transportation._id
JOIN shipment ON shipment.package id = deliverylogs.package id && deliverylogs
.package_id = shipment_id$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `userWithMostShips` () BEGIN
  SELECT * FROM users JOIN (SELECT shipment.cust_id_from as customerId, COUNT(
*) as OrdersCount FROM shipment GROUP BY shipment.cust_id_from) AS t2 ON t2.cu
stomerID = users._id
   ORDER BY OrdersCount DESC
    LIMIT 1;
END$$
DELIMITER;
CREATE TABLE `addresses` (
  `id`int(11) NOT NULL,
  `address` varchar(100) NOT NULL,
 `locality` varchar(100) DEFAULT NULL,
 `city` varchar(100) DEFAULT NULL,
  `state` varchar(100) NOT NULL,
  `pincode` varchar(100) NOT NULL,
 `country` varchar(100) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
INSERT INTO `addresses` (`_id`, `address`, `locality`, `city`, `state`, `pinco
de`, `country`) VALUES
(4283253, 'ewdnwx', 'ljrp', 'eh', 'hmsd', 'zjdoaw', 'xapppxu'),
(17576064, 'ximasbbm', 'asmpluqhxh', 'ibwc', 'ckxdjgr', 't', 'fqnmfdjovb'),
(27178991, 'kgt', 'w', 'qjbahrr', 'itxwrjelb', 'qdfvezun', 'ezjy'),
(41047963, 'rydherivln', 'hyrjni', 'su', 'qlwmky', 'wy', 'x'),
(54206424, 'qvyr', 'df', 'zglv', 'gh', 'lazhvyxah', 'iayupxmr'),
(81809252, 'x1', 'jbxnkyein', 'evdhbrwm', 'xpaw', 'xrxd', 'oumkypcsxw'),
(83383463, 'ysxeuii', 'mkgmkajrwt', 'ru', 'ejbz', 'y', 'lezteoaz'),
(106536146, 'hkcsp', 'hb', 'qbtn', 'mxucskfnx', 'jdcpfctas', 'sceepvmlfo'),
(111583292, 'tk', 'rplwsu', 'dj', 'gfzu', 'babyvioe', 'bweusklap'),
(112851492, 'ykmnbv', 'zkia', 'dr', 'darqwr', 'pygq', 'dsfwu'),
(122365043, 'hxqgcornzt', 'zmjcbsz', 'dl', 'n', 'nc', 'dduose'),
(125465998, 'cb', 'ca', 'oyucptkgxc', 'jxgx', 'cilhv', 'sgolujfyhu'),
(130257444, 'hhvvlxsikn', 'fhd', 'ompyz', 'czjzwvx', 'mpxq', 'bmswrud'),
(134490741, 'qbsyx', 'phqnu', 'o', 'jamaop', 'tquqpi', 'ipkjyuoii'),
(151560283, 'dweptd', 'rj', 'zx', 'cvqz', 'pletg', 'fwzi'),
(157861123, 'gnqjbnaj', 'xvlsb', 'u', 'xjfkzomm', 'ianwbgsunv', 'gdrgpq'),
(184432525, 'rofm', 'zjzytp', 'dxhqqoz', 'tomj', 'pqszyijh', 'ltjvhs'),
(256109128, 'ecgxweub', 'fq', 'qtplrj', 'a', 'cgxlneovdm', 'kdnohqtyx'),
(288955290, 'eakointcd', 'i', 'ut', 'vrxkmznhv', 'gaipfmxmjb', 'jglcrccw'),
(300154550, 'jrshi', 'opbhj', 'flpz', 'lktxprbpb', 'q', 'dhfkd'),
(311272708, 'ua', 'lcehzfze', 'vbsdpb', 'hcgi', 'actgaqwerx', 'gjy'),
(329618851, 'wsqkvzh', 'uvev', 'ah', 'srkpbi', 'ybxebhu', 'xitwes'),
(394796207, 'yqcaqcgm', 'fqthivnuys', 'e', 'lefrcfy', 'yf', 'razipcju'),
(442375010, 'lvh', 'ip', 'mltkvyogso', 'nxwu', 'l', 'yfbwqbie'),
(455697060, 'vhgylcr', 'f', 'ebij', 'nqbuwbhzu', 'tvgc', 'hyyiktbjgo'),
(462398425, 'yrqnk', 'jtxlfxcxko', 'busgwptw', 'e', 'jev', 'ctjo'),
(481920440, 'dirrhkyky', 'ewnktlbd', 'qbuev', 'ivbvtmv', 'xxmpyirc', 'pkawxmv'
(485085653, 'u', 'b', 'yzyr', 'va', 'bvzxwkt', 'e'),
(486851294, 'ltwwzvsfks', 'ixvc', 'asafbbe', 'vsrqoqq', 'dnuz', 'pqdb'),
(553479625, 'vedyhht', 'focbphfci', 'awyfblza', 'apqenlkqjr', 'cu', 'uslki'),
(579832275, 'jfzc', 'ojgvkik', 'cpofvgak', 'x', 'nft', 'bhkgujwi'),
(584128507, 'ybop', 'uvcchkqkwd', 'yqspf', 'ezpinea', 'ocavwkt', 'fmbklzidw'),
(603236085, 'xvj', 'refjbdh', 'zocnbakrs', 'jmfulhjpu', 'zooedp', 'vvbsieyk'),
(605892808, 'bvibgwlnye', 'qswvosp', 'hwztptbwld', 'wfnpw', 'ysqfoduoj', 'utpj
idlbk'),
(617716389, 'wqf', 'n', 'pcryjdblu', 'mrads', 'viz', 'xgr'),
(621715005, 'xyqd', 'hfokyc', 'opdje', 'vvsgjgjf', 'h', 'vlycqjte'),
(636893613, 'eshbprd', 'ouc', 'ou', 'wrdruib', 'vj', 'alnmlovj'),
```

```
(657352374, 'qt', 'y', 'da', 'ycbplcnyvg', 'wvnvrrp', 'xjqcyyet'),
(725767308, 'tfpqzl', 'dkhuiws', 'gbwpx', 'grfzwwqxh', 'rpp', 'xkfghippia'),
(759667798, 'wbbiden', 'hzjjhppwp', 'iscfaxsua', 'mphvd', 'jur', 'p'),
(769422522, 'oouj', 'fyrwhhmer', 'srsvii', 'rtligudhf', 'y', 'h'),
(776166036, 'mxsrokxe', 'cygovnomc', 'rpfry', 'uhf', 'ohhztghqdk', 'ba'),
(781952360, 'lfsiqtkgcd', 'bbqdzy', 'zncw', 'bpejfxvoc', 'obyxgmjgqi', 'uet'),
(800936533, 'uyxfew', 'vniipkhl', 'ky', 'miohi', 'ejex', 'fk'),
(806257988, 'rlrpjbz', 'eakqclxf', 'djlrugociu', 'buwwweth', 'm', 'z'),
(815727713, 'xbvckl', 'oa', 'nxsfzc', 'uldebsbcn', 'd', 'ellxxnqj'),
(826926193, 'kfzl', 'cvxyg', 'zy', 'bezzbwuldv', 'qeozrsevh', 'lbpjy'),
(838789897, 'idtlurim', 'uarofcmc', 'yufjwvxl', 'umgxwlrjii', 'a', 'yajewq'),
(864905367, 'sa', 'xznmsshp', 'qkntdvv', 'eioblg', 'vbizi', 'rznqiuso'),
(881066508, 'pjtbiuqxav', 'gxuyu', 'k', 'cn', 'xfgyind', 'aqynxjdty'),
(895336158, 'jkj', 'cha', 'znbzlawcac', 'ddre', 'juwuhrssd', 'zttwvdzu'),
(902142984, 'tlpnxa', 'hbpgecxe', 'pa', 'npguk', 'xgzov', 'rbpmldqwm'),
(913743198, 'oarw', 'zml', 'qy', 'a', 'nuanqgw', 'fplcq'),
(915811483, 'bzf', 'x', 'jjl', 'v', 'twty', 'sdssapuipi'),
(924047537, 'evohznq', 'tagyy', 'sgfydjxzyf', 'itf', 'ucbs', 'udglmlyqh'),
(949810747, 'n', 'blnmb', 'rjbkpfd', 'a', 'mfjfejrolo', 'bzdsxmjvp'),
(958060951, 'rmkak', 'rtcbhmlz', 'pdqj', 't', 'nyoauc', 'pe'),
(979169670, 'jflhuozd', 'bttrhde', 'oklbizdcd', 'mxlrku', 'v', 'xqhruka'),
(981520797, 'udajhjdn', 'jywpnd', 'lxtp', 'mhvglnaq', 'ecwn', 'mtjmi'),
(986548170, 'tubhooizdw', 'l', 'rtwgoh', 'z', 'dvthqjb', 'mz');
CREATE TABLE `deliverylogs` (
 `_id` int(11) NOT NULL,
  `package_id` int(11) NOT NULL,
 `location_id` int(11) NOT NULL,
  `transportation_id` int(11) NOT NULL,
 `delivery_status_code` int(11) NOT NULL,
  `starting time` date NOT NULL,
 `cost incurred` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
INSERT INTO `deliverylogs` (`_id`, `package_id`, `location_id`, `transportatio
n_id`, `delivery_status_code`, `starting_time`, `cost_incurred`) VALUES
(4153207, 465971538, 329618851, 599316053, 4, '2001-12-14', 7333),
(8752956, 297544937, 256109128, 985586659, 1, '2009-11-15', 4018),
(10603174, 701183974, 979169670, 322202144, 2, '2006-11-20', 2460),
(12600980, 272789790, 329618851, 438636944, 1, '2015-11-16', 1544),
(16842369, 328812149, 781952360, 739531507, 4, '2008-11-19', 1183),
(17929622, 477718598, 979169670, 960769787, 7, '2001-12-17', 7224),
(26124700, 207952880, 481920440, 271380851, 2, '2008-11-18', 5949),
(27136401, 54375537, 481920440, 306985782, 5, '2003-11-12', 58),
(27897309, 898015751, 924047537, 816553974, 1, '2000-12-20', 8916),
(33166805, 723318867, 151560283, 353826774, 1, '2016-12-29', 9280),
(37407953, 617829791, 605892808, 885259245, 5, '2018-11-13', 7610),
(53591761, 59835207, 157861123, 618342333, 3, '2021-11-10', 3306),
(54088852, 48219400, 902142984, 24523341, 3, '2008-11-12', 3708),
(57983446, 842852922, 41047963, 417391206, 4, '2007-11-20', 7040),
(59444209, 985039288, 300154550, 497306961, 5, '2002-11-10', 6337),
(67036321, 944770745, 130257444, 299589060, 1, '2016-11-10', 5504),
(70620830, 769726817, 949810747, 59212959, 6, '2016-12-27', 1931),
(74470726, 617829791, 864905367, 196633415, 2, '2011-12-17', 5886),
(114410780, 676908580, 864905367, 806556042, 2, '2003-12-17', 3355),
(124336586, 501627374, 924047537, 859923271, 5, '2000-12-25', 8204),
(137876347, 231405147, 83383463, 572528213, 1, '2019-11-21', 9127),
(172637504, 154363680, 781952360, 385781148, 1, '2005-11-26', 1230),
(177605767, 514502114, 579832275, 115251666, 1, '2018-11-23', 9449),
(181094645, 27366579, 769422522, 901942940, 2, '2020-11-27', 1748),
(186415023, 479110315, 981520797, 417134819, 3, '2000-11-12', 6286),
(211050246, 217472378, 41047963, 901942940, 1, '2019-12-15', 457),
(215572788, 154363680, 122365043, 326998240, 5, '2006-11-20', 1179),
(220959031, 460103597, 579832275, 299589060, 5, '2011-11-21', 3566),
(235426365, 322152515, 134490741, 24523341, 4, '2000-11-24', 8581),
(241068471, 438151438, 151560283, 58238579, 4, '2013-11-21', 4177),
(287713841, 373368637, 657352374, 802187563, 6, '2019-11-25', 9222),
(289579176, 125694608, 769422522, 7541345, 5, '2006-11-19', 6202),
(296213776, 676908580, 806257988, 580068292, 7, '2006-12-21', 1893),
(300960275, 830286259, 462398425, 779397391, 7, '2010-11-20', 9512),
(315888815, 735099229, 902142984, 417391206, 6, '2000-11-24', 4907),
(331817483, 231405147, 485085653, 782480473, 7, '2010-12-13', 9279),
(333434080, 405976872, 584128507, 54787005, 2, '2010-11-10', 6753),
(342726389, 148725773, 130257444, 3366574, 7, '2008-11-20', 5058),
(388848535, 831342221, 759667798, 385781148, 7, '2018-12-15', 5398),
(395114302, 123806234, 621715005, 692196075, 6, '2014-12-15', 9383),
(414677551, 903953541, 134490741, 806556042, 7, '2010-11-14', 2849),
(429477171, 282649236, 311272708, 700825808, 3, '2010-12-26', 1144),
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```

```
(433921769, 708265573, 781952360, 618342333, 4, '2017-11-24', 6195),
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(463807012, 107006605, 311272708, 160960299, 5, '2000-12-20', 3549),
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(564505021, 571240742, 4283253, 698303621, 2, '2009-12-13', 1212),
(581127167, 682187984, 657352374, 225250365, 2, '2005-11-27', 2076),
(586748084, 515912816, 881066508, 328693025, 6, '2016-12-18', 5171),
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(631353146, 962876610, 981520797, 740355158, 1, '2013-11-20', 385),
(636951567, 599483582, 157861123, 264591872, 1, '2008-12-14', 954),
(649748993, 319251514, 394796207, 985586659, 7, '2010-12-27', 9251),
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(690536721, 723857313, 111583292, 417391206, 1, '2008-12-21', 3450),
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(707762675, 564742792, 759667798, 341099786, 6, '2016-12-18', 473),
(730696761, 123806234, 41047963, 917728993, 3, '2014-11-29', 6554),
(744231306, 45673275, 486851294, 897677558, 2, '2006-11-29', 5330),
(749153404, 517180132, 981520797, 732855027, 4, '2006-11-12', 9527),
(760987615, 490409437, 776166036, 897677558, 6, '2013-11-18', 2069),
(765649222, 513118086, 981520797, 432734920, 6, '2016-11-18', 6938),
(785836892, 723857313, 134490741, 58238579, 5, '2000-12-25', 8393),
(794616010, 850000254, 256109128, 920239201, 2, '2003-11-16', 7552),
(795291420, 292978380, 864905367, 985586659, 4, '2005-12-29', 4354),
(810696399, 513118086, 881066508, 739531507, 4, '2016-11-29', 8546),
(823550361, 405976872, 800936533, 769125081, 1, '2010-12-22', 2821),
(830347378, 319251514, 288955290, 739531507, 4, '2005-12-25', 9200),
(846313670, 964734612, 17576064, 816553974, 6, '2002-11-20', 9494),
(848888653, 154363680, 122365043, 331864301, 5, '2000-12-21', 9508),
(859928453, 59835207, 621715005, 119932283, 1, '2009-12-23', 46),
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(958641477, 309375955, 815727713, 739531507, 5, '2003-11-20', 124),
(987832100, 985039288, 481920440, 618342333, 5, '2016-12-15', 6683);
CREATE TABLE `deliverystatus` (
 `_id` int(11) NOT NULL,
  `status` varchar(100) NOT NULL,
  `details` varchar(100) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `deliverystatus` (`_id`, `status`, `details`) VALUES
(1, 'ordered', 'akjlkkjdlakdj'),
(2, 'on the way', 'akjlkkjdlakdj'),
(3, 'returned', 'akjlkkjdlakdj'),
(4, 'delivered', 'akjlkkjdlakdj'),
(5, 'cancelled', 'akjlkkjdlakdj'),
(6, 'delivery error', 'akjlkkjdlakdj'),
(7, 'no payment return', 'akjlkkjdlakdj');
CREATE TABLE `packagetype` (
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` id` int(11) NOT NULL,
  `type` varchar(100) NOT NULL,
 `details` varchar(100) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `packagetype` (`_id`, `type`, `details`) VALUES
(1, 'heavy', 'ahldflhaiudfh'),
(2, 'massive', 'ahldflhaiudfh'),
(3, 'small', 'ahldflhaiudfh'),
(4, 'breakable', 'ahldflhaiudfh'),
(5, 'high', 'ahldflhaiudfh'),
(6, 'large', 'ahldflhaiudfh'),
(7, 'great', 'ahldflhaiudfh'),
(8, 'glass', 'ahldflhaiudfh'),
(9, 'expensive', 'ahldflhaiudfh');
CREATE TABLE `receivers` (
 `_id` int(11) NOT NULL,
  `address_id` int(11) NOT NULL,
 `name` varchar(100) NOT NULL,
  `phone_number` varchar(100) NOT NULL,
 `registered` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `receivers` (`_id`, `address_id`, `name`, `phone_number`, `registe
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(11017504, 111583292, 'Roger', '3211925124', 1),
(15628373, 958060951, 'Adam', '3313410742', 0),
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(399796322, 605892808, 'George', '1287368062', 0),
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(949094961, 394796207, 'Walter', '9439172128', 0),
(959410879, 111583292, 'Hal', '9538616190', 0);
CREATE TABLE `shipment` (
  `package_id` int(11) NOT NULL,
  `cust id from` int(11) NOT NULL,
  `receiver_id` int(11) NOT NULL,
  `delivery_status_code` int(11) NOT NULL,
  `package_weight` int(11) NOT NULL,
  `package_type` int(11) NOT NULL,
  `timeline` date NOT NULL,
  `cost` int(11) NOT NULL,
  `prepaid` int(11) NOT NULL,
  `ordered_at` date NOT NULL,
  `delivered_at` date DEFAULT NULL,
  `destination_address_id` int(11) NOT_NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `shipment` (`package_id`, `cust_id_from`, `receiver_id`, `delivery
_status_code`, `package_weight`, `package_type`, `timeline`, `cost`, `prepaid`
, `ordered_at`, `delivered_at`, `destination_address_id`) VALUES
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 `shipment_id` int(11) NOT NULL
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('965885663', 156264194, 723857313),
('967445505', 339175089, 571240742),
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('981989342', 818347098, 490409437);
CREATE TABLE `transportation` (
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  `type` varchar(100) NOT NULL,
  `cost_per_km` int(11) NOT NULL,
  `identification_code` int(11) NOT NULL,
  `model_no` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `transportation` (`_id`, `type`, `cost_per_km`, `identification_co
de`, `model_no`) VALUES
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(24523341, 't_75', 6, 273192818, 422165673),
(40627809, 't_89', 11, 946853504, 821776057),
(41924839, 't_53', 16, 742550968, 680703989),
(44411822, 't_73', 3, 987805612, 60526944),
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CREATE TABLE `users` (
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 `FirstName` varchar(100) NOT NULL,
 `LastName` varchar(100) NOT NULL,
 `Address_id` int(11) NOT NULL,
 `Debts` int(11) DEFAULT NULL,
```

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`Phone` varchar(100) NOT NULL,
  `Email` varchar(100) NOT NULL,
  `Registered_at` date DEFAULT NULL,
  `Credit_card_number` varchar(100) NOT NULL,
  `total_spent` int(11) DEFAULT NULL,
 `registered` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `users` (`_id`, `FirstName`, `LastName`, `Address_id`, `Debts`, `P
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(765560338, 'Ty', 'Ory', 81809252, 51, '1871464980', 'onenbjoesg', '2015-11-
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(799019045, 'George', 'Moody', 256109128, 335, '5327338281', 'chtjvynvfw', '20
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(818347098, 'Thomas', 'Norquist', 311272708, 100, '2795078336', 'lskifszmqp',
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(851015190, 'Matthew', 'Tisler', 725767308, 983, '2785885980', 'pffglvvuwt', '
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(853148441, 'Monte', 'Vogal', 924047537, 318, '5214536066', 'zmhgkjmcnm', '201
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(877501798, 'Mark', 'Ortiz', 151560283, 830, '3121664351', 'lsysatlxzh', '2003
-11-23', '9793640073', <mark>25339131, 1),</mark>
(900264407, 'Otto', 'Frick', 311272708, 293, '4879554100', 'vnedhfshvm', '2011
-12-16', '3480171018', 599814932, 0),
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(964042428, 'George', 'Zeaser', 17576064, 89, '0206937254', 'qdmohnjjze', '200
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ALTER TABLE `addresses`
 ADD PRIMARY KEY (`_id`);
ALTER TABLE `deliverylogs`
 ADD PRIMARY KEY (`_id`),
 ADD KEY `deliveryStatus_fk` (`delivery_status_code`),
 ADD KEY `location_fk` (`location_id`),
 ADD KEY `package_fk` (`package_id`),
 ADD KEY `transport_fk` (`transportation_id`);
ALTER TABLE `deliverystatus`
 ADD PRIMARY KEY (`_id`);
ALTER TABLE `packagetype`
 ADD PRIMARY KEY (`_id`);
ALTER TABLE `receivers`
 ADD PRIMARY KEY (`_id`),
 ADD KEY `address_fk` (`address_id`);
```

```
ALTER TABLE `shipment`
  ADD PRIMARY KEY (`package_id`),
  ADD KEY `cust_id_index` (`cust_id_from`),
 ADD KEY `receiver_id_index` (`receiver_id`),
 ADD KEY `destination_address_id` (`destination_address_id`),
 ADD KEY `deliveryStatus_dfk` (`delivery_status_code`),
 ADD KEY `packageType_fk` (`package_type`);
ALTER TABLE `transactions`
 ADD PRIMARY KEY (`_id`),
 ADD KEY `user_fk` (`customer_id`),
 ADD KEY `shipment_fk` (`shipment_id`);
ALTER TABLE `transportation`
 ADD PRIMARY KEY (`_id`),
 ADD KEY `identification_code` (`identification_code`);
ALTER TABLE `users`
 ADD PRIMARY KEY (`_id`),
 ADD KEY `Address_id` (`Address_id`),
 ADD KEY `FirstName` (`FirstName`, `LastName`, `Email`, `Credit_card_number`);
ALTER TABLE `deliverylogs`
 ADD CONSTRAINT `deliveryStatus_fk` FOREIGN KEY (`delivery_status_code`) REFE
RENCES `deliverystatus` (`_id`),
 ADD CONSTRAINT `location_fk` FOREIGN KEY (`location_id`) REFERENCES `address
es` (`_id`),
 ADD CONSTRAINT `package_fk` FOREIGN KEY (`package_id`) REFERENCES `shipment`
(`package id`),
```

```
ADD CONSTRAINT `transport_fk` FOREIGN KEY (`transportation_id`) REFERENCES `
transportation` (`_id`);
ALTER TABLE `receivers`
 ADD CONSTRAINT `address fk` FOREIGN KEY (`address id`) REFERENCES `addresses
 (`_id`);
ALTER TABLE `shipment`
 ADD CONSTRAINT `customer_fk` FOREIGN KEY (`cust_id_from`) REFERENCES `users`
(`_id`),
ADD CONSTRAINT `deliveryStatus dfk` FOREIGN KEY (`delivery status code`) REF
ERENCES `deliverystatus` (`_id`),
 ADD CONSTRAINT `destination_fk` FOREIGN KEY (`destination_address_id`) REFER
ENCES `addresses` (` id`),
 ADD CONSTRAINT `packageType_fk` FOREIGN KEY (`package_type`) REFERENCES `pac
kagetype` (`_id`),
 ADD CONSTRAINT `receiver_fk` FOREIGN KEY (`receiver_id`) REFERENCES `receive
rs` (`_id`);
ALTER TABLE `transactions`
 ADD CONSTRAINT `shipment_fk` FOREIGN KEY (`shipment_id`) REFERENCES `shipmen
t` (`package_id`),
 ADD CONSTRAINT `user_fk` FOREIGN KEY (`customer_id`) REFERENCES `users` (`_i
d`);
ALTER TABLE `users`
 ADD CONSTRAINT `users_ibfk_1` FOREIGN KEY (`Address_id`) REFERENCES `address
es` (`_id`);
COMMIT;
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
*!40101 SET COLLATION CONNECTION=@OLD COLLATION CONNECTION */;
```

Ritwiz Sinha