**Project Name**: Puzzle Toys Online Shop

**Project Member**: Nguyen Minh Tu, Tran Thanh Nhan

**Project Description**:

Solving puzzle games is a great way for both children and adult to improve their problem-solving skills, logic thinking and concentration. The Puzzle Toys Online Shop provides a lot of high-quality puzzle toys, such as rubik, wooden puzzles, metal puzzles.

The shop needs a production management application, which allow moderator and staffs login and do their specific jobs. The shop also wants to provide customers a website where they can search and order productions online.

**Project Requirement**:

Build a web base application performs these task:

1. Manage users account
2. Manage information of the toys: name, type, producer, size, price, quantity, year of manufacture, toy description, toy photos
3. Allow customers to search the toys by name, type, producer, size, price
4. Allow customers to order and view their previous orders
5. Allow users edit their profile, rating and comment on the toys
6. Moderator can get the weekly, monthly, yearly or any period of time of the Income Statement (báo cáo doanh thu)
7. Moderator manages customers account, staffs account, toys, orders.
8. Design database with acceptable performance
9. Website must be secure

**Database sketch design in SQL form:**

1. Users account

Three types of user: Moderator, Staff, Customer.

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| --- |
| **User** |
| * String userID PK * String passwordHash (using MD5 encryption) * String firstName * String lastName * String email * String roleID FK |

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| **Role** |
| * String roleID PK * String roleName |

1. Puzzle toys

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| **Toy** |
| * String toyID PK * String toyName * String typeID FK * String producerID FK * float sizeX * float sizeY * float sizeZ * float price * int quantity * int yearOfManufacture * String description * String photoURL (point to a directory, which contain toy’s photos) |

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| **ToyType** |
| * String typeID PK * String typeName (rubik, wooden puzzle, metal puzzle) |

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| **Producer** |
| * String producerID PK * String producerName |

1. Order

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| **Order** |
| * Int orderID (identity) PK * String userID FK * DateTime dateTime * Float totalPrice |

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| **OrderItem** |
| * int orderID PK FK * String toyID PK FK * Float price (must have toy price here, because the toy’s real price may change in future) * Int quantity |

1. Rating and comment

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| **Rating** (one user only have one rating on each toy) |
| * String toyID PK FK * String userID PK FK * DateTime dateTime * Int rating (1 – 5) |

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| **Comment** (one user may have several comments on each toy) |
| * Int commentID (identity) PK * String toyID FK * String userID FK * DateTime dateTime * String comment |

**Function break down in abstract level:**

1. Search
2. Order
3. View previous orders
4. Edit their own profile (add new (register), update, delete)
5. Edit rating (add, update, delete)
6. Edit comment (add, update, delete)
7. Get income statement
8. Moderator edit staff profile (add, update, delete)
9. Moderator edit customer profile (add, update, delete)
10. Moderator edit order (update, delete)

**Function breakdown in detail level:**