Business Logic and Data Validation  
CVGS Website

Team Name: Project RDJG

|  |
| --- |
| **Business Logic** |
| **1. Postal Code** |
| IF country is Canada validate that the postal code matches A9A9A9  ELSE IF country is USA validate that the postal code matches 99999 or 999999999  ELSE no validation for other countries |
| **2. Phone Number** |
| IF country is Canada or USA validate that the phone number matches (999)999-9999  ELSE no other validation for other countries |
| **3. Order Status** |
| Initiated - from order creation till approved.  Approved - once confirmation of funds is received and address is validated.  IF Digital Download AND Approved allow user to download a digital copy  ELSE Pending - Sent to vendor for fulfillment  Backordered - some items may have been shipped but others are delayed  Shipped - Item is on its way in the mail    Completed - Item has been received(user can come back and redownload a digital copy of a game at any time) |
| **4. Fields Not Contain** |
| IF field does not contain “ or ; |
| **5. Login** |
| IF userName AND password userID match login  IF userName is in employee table login as Admin  IF userName AND password userID do not match loginFalures equals +1 for half an hour  IF loginFalures equals 3 then lockout is true for half an hour  IF lockout equals true do not login |
| **6. Add Friend** |
| IF friend is not matched in Friend table add friend |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Database Table: User, Credit\_Card, Address | Entity Class: User |   1. user\_name cannot be empty or undefined   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   2. user\_name must be 3 to 15 characters long (inclusive)   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if user\_name.Length < 3 or > 15 | | Data Layer |  |   3. User\_name must be unique   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if user\_name already exists | | Data Layer |  |   4. Email must be a valid email address   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | A regular expression will be used to ensure the email used is valid | | Data Layer | NOT NULL |   5. Email must not exceed 254 characters in lengths   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if email.length > 254 | | Data Layer |  |   6. Password cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   7. Password must be between 6 and 64 characters long (inclusive)   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if password.length < 6 or > 64 | | Data Layer |  |   8. First\_name must not exceed 35 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if first\_name.Length > 35 | | Data Layer | NOT NULL |   9. First\_name cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   10. Last\_name must not exceed 35 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if last\_name.Length > 35 | | Data Layer | NOT NULL |   11. Last\_name cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   12. Phone must be 10 digits in length   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if phone.length != 10 | | Data Layer | NOT NULL |   13. Phone cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   14. Gender cannot exceed 1 character   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if gender.length != 1 | | Data Layer | NOT NULL |   15. Gender cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   16. Birthdate must be valid date and < current date   |  |  | | --- | --- | | Presentation Layer | Use calendar controls if available and default date to 15 years ago. | | Business Layer | Throw exception if date selected is today or larger | | Data Layer |  |   17. Birthdate cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize date to Today, empty on insert. | | Business Layer | Initialize to Today, empty on initialization. | | Data Layer | NOT NULL |   18. Favorite\_platform cannot exceed 25 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if favorite\_platform.length > 25 | | Data Layer |  |   19. favorite \_category cannot exceed 25 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if favorite\_category.length > 25 | | Data Layer |  |   20. Notes cannot exceed 255 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if favorite\_category.length > 25 | | Data Layer |  |   21. Credit\_Card\_id cannot be empty or undefined   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer |  | | Data Layer | NOT NULL |   22. Credit\_card\_id must be 10 digits long   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if credit\_card\_id.length != 10 | | Data Layer | NOT NULL |   23. Card\_number must be 16 digits long   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if card\_number.length != 16 | | Data Layer | NOT NULL |   24. Expiry\_date cannot be today or smaller   |  |  | | --- | --- | | Presentation Layer | Use calendar controls if available, set default to Today | | Business Layer | Throw exception if expiry\_day = Today or smaller | | Data Layer | NOT NULL |   25. Expiry\_date cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize date to Today, empty on insert. | | Business Layer | Initialize to Today, empty on initialization. | | Data Layer | NOT NULL |   26. Address\_id cannot be empty or undefined   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer |  | | Data Layer | NOT NULL |   27. Address\_id must be 10 digits   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if Address\_id.length != 10 | | Data Layer | NOT NULL |   28.Street\_address must not be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   29. Street\_address must not exceed 90 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if street\_address.length != 90 | | Data Layer | NOT NULL |   30. City must not be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   31. City must not exceed 35 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if city.length != 35 | | Data Layer | NOT NULL |   32. Province must not be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   33. Province must contain be a valid province or state code   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | A regular expression will be used to ensure the code used is valid | | Data Layer | NOT NULL |   34. Postal\_code must not be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   35. Postal\_code must fit the appropriate form for the chosen province   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | A regular expression will be used to ensure the code used is valid | | Data Layer | NOT NULL |   36.Employee\_id must be 10 digits long   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if employee\_id.length != 10 | | Data Layer |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Database Table:Game | Entity Class: Game |   1. Game\_name cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   2. Game\_name cannot exceed 20 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if game\_name.length > 20 | | Data Layer | NOT NULL, Unique ID |   3. Game\_description cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   4. Game\_description cannot exceed 255 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if game\_description.length >255 | | Data Layer | NOT NULL |   5. Cost cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to Decimal, empty on insert. | | Business Layer | Initialize to decimal, empty on initialization. | | Data Layer | NOT NULL |   6.list\_price cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to Decimal, empty on insert. | | Business Layer | Initialize to decimal, empty on initialization. | | Data Layer | NOT NULL |   7.on\_hand cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL |   8.developer\_id cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL, Foreign Key Constraint |   9.publisher\_id cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL, Foreign Key Constraint |   10.release\_date cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize date to Today, empty on insert. | | Business Layer | Initialize to Today, empty on initialization. | | Data Layer | NOT NULL |   11.genre\_id cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL, Foreign Key Constraint | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Database Table: Developer | Entity Class: Developer |   1.dev\_name cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL, unique ID |   2.dev\_name cannot be greater than 20 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if dev\_name.length > 20 | | Data Layer | NOT NULL, Unique ID |   3.contact\_name cannot be longer than 25 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if contact\_name.length > 20 | | Data Layer |  |   4.contact\_phone cannot be longer than 10 digits   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if contact\_phone.length > 10 | | Data Layer |  |   5.contact\_email must be a valid email address   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | A regular expression will be used to ensure the email used is valid | | Data Layer |  |   5.contact\_email cannot exceed 35 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if contact\_email.length > 35 | | Data Layer |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Database Table: Publisher | Entity Class: Publisher |   1.pub\_name cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL, unique ID |   2.pub\_name cannot be greater than 20 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if pub\_name.length > 20 | | Data Layer | NOT NULL, Unique ID |   3.contact\_name cannot be longer than 25 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if contact\_name.length > 20 | | Data Layer |  |   4.contact\_phone cannot be longer than 10 digits   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if contact\_phone.length > 10 | | Data Layer |  |   5.contact\_email must be a valid email address   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | A regular expression will be used to ensure the email used is valid | | Data Layer |  |   5.contact\_email cannot exceed 35 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if contact\_email.length > 35 | | Data Layer |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Database Table: Event | Entity Class: Event |   1.event\_name cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL, unique ID |   2.event\_name cannot exceed 20 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if event\_name.length > 20 | | Data Layer | NOT NULL |   3.event\_description cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to string, empty on insert. | | Business Layer | Initialize to string, empty on initialization. | | Data Layer | NOT NULL |   4.event\_description cannot exceed 255 characters   |  |  | | --- | --- | | Presentation Layer |  | | Business Layer | Throw exception if event\_description.length > 255 | | Data Layer | NOT NULL |   5.address\_id cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL, Foreign Key Constraint? |   6.start\_date must be a valid date and > Today   |  |  | | --- | --- | | Presentation Layer | Use calendar controls if available and default date to Today. | | Business Layer | Throw exception if date selected is today or smaller | | Data Layer |  |   7.start\_date cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize date to Today, empty on insert. | | Business Layer | Initialize to Today, empty on initialization. | | Data Layer | NOT NULL |   8.end\_date must be a valid date and > Today   |  |  | | --- | --- | | Presentation Layer | Use calendar controls if available and default date to Today | | Business Layer | Throw exception if date selected is today or smaller | | Data Layer |  |   9.end\_date cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize date to Today, empty on insert. | | Business Layer | Initialize to Today, empty on initialization. | | Data Layer | NOT NULL |   10.max\_registrants cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Database Table: Order | Entity Class: Order |   1.customer\_id cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL, Foreign Key Constraint? |   2.order\_date cannot be undefined or empty   |  |  | | --- | --- | | Presentation Layer | Initialize date to Today, empty on insert. | | Business Layer | Initialize to Today, empty on initialization. | | Data Layer | NOT NULL |   3.order\_date must be a valid date and = Today   |  |  | | --- | --- | | Presentation Layer | Use calendar controls if available and default date to Today | | Business Layer | Throw exception if date selected is not today | | Data Layer |  |   4.ship\_date must be a valid date and > today   |  |  | | --- | --- | | Presentation Layer | Use calendar controls if available and default date to Today | | Business Layer | Throw exception if date selected is today or smaller | | Data Layer |  |   5.billing\_address\_id cannot be empty or undefined   |  |  | | --- | --- | | Presentation Layer | Initialize text to integer, empty on insert. | | Business Layer | Initialize to integer, empty on initialization. | | Data Layer | NOT NULL, Foreign Key Constraint | |