BSc. (Hons) in Software Engineering
Faculty of Computing

Database Schema Documentation

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MongoDB User Schema Documentation

User Fields

Field	Type	Required	Unique	Max Length	Default	Description
firstName	String	Yes	No	15	-	User's first name. Trimmed to remove extra whitespace.
lastName	String	Yes	No	20	-	User's last name. Trimmed to remove extra whitespace.
email	String	Yes	Yes	254	-	User's email address. Must be unique and trimmed.
password	String	Yes	No	128	-	Hashed password. Stored securely with bcrypt.
cart	Array	No	No	-	[]	User’s shopping cart containing book/item objects.
createdAt	Date	No	No	-	Current Date	Timestamp of when the account was created.

Password Handling

- Passwords are hashed automatically before saving using bcryptjs.
- Hashing occurs only when the password is new or modified.

- Passwords are not stored in plain text.

Code Snippet:

```
userSchema.pre("save", async function (next) {
  if (!this.isModified("password")) return next();
  const salt = await bcrypt.genSalt(10);
  this.password = await bcrypt.hash(this.password, salt);
});
```

Password Comparison Method

- Method: comparePassword(candidatePassword)
- Compares raw input password with hashed stored password.
- Returns a boolean (true if match, false if not).

```
const isMatch = await user.comparePassword('enteredPassword');
```

Cart Field Structure

The cart field is an array that may contain items like:

```
[
  {
    bookId: "1234567890",
    title: "Book Title",
    quantity: 2,
    price: "19.99",
    image: "https://..."
  }
]
```