

**A) Application & Components Summary Table** (Question 1a)

Provider	Component Type	Description & Inputs/Outputs	Location & TryIt link
Ayush Chaudhary	WSDL Service	CalculateDiscount(price, qty) → decimal	Default.aspx "TryIt"
Ayush Chaudhary	DLL Function	HashPassword(string) → string	Default.aspx "TryIt"
Ayush Chaudhary	User Control	Captcha validation (no params)	Default.aspx "TryIt"
Ayush Chaudhary	Global.asax	Session_Start visitor counter	Default.aspx visitor count

**Test Results**

a) Discount service

location: <http://webstrar106.fulton.asu.edu/page1/TryIt.aspx>

Test input: price=100, Qt.=3

Price:

Quantity:

Calculate Discount

**Result:** \$15.00

b) Hash password

Location: <http://webstrar106.fulton.asu.edu/page1/TryIt.aspx>

### Password Hasher

This component securely hashes passwords using SHA-256.

Password:

Hash Password

**Result:** 389c0aff3d8ad1a0e958...

### c) CAPTCHA Control

Location: <http://webstrar106.fulton.asu.edu/page1/TryIt.aspx>

#### CAPTCHA Control

This user control generates and validates CAPTCHAs for form verification.



Enter the text shown above:

Refresh

Verify CAPTCHA

**Result:** CAPTCHA verification successful!

### d) Visitor counter

#### Application State

This component demonstrates the use of Application state for visitor counting.

**Current Visitor Count: 1**

## B) Local Component Submissions (Question 2)

The local components are integrated into the application as follows:

1. DLL Function (PasswordHasher):
  - Implemented in SecurityLib/PasswordHasher.cs
  - Used for secure password storage in Login.aspx and Staff.aspx

- Can be tested directly via TryIt.aspx with the "Hash Password" function

2. User Control (CaptchaControl):

- Implemented in Controls/CaptchaControl.ascx
- Displays a randomly generated image with text verification
- Integrated into the registration form on Login.aspx
- Can be tested directly on TryIt.aspx with the "Verify CAPTCHA" function

3. Global.asax:

- Implements Session\_Start event to increment visitor counter
- Application["VisitorCount"] displays total number of visitors
- Visible on Default.aspx and TryIt.aspx pages

**C) Web Service Submission (Question 3)**

The discount service provides discount calculation functionality based on:

- Quantity-based discounts (5%, 10%, or 15% depending on quantity)
- Price-based discounts (\$25 or \$50 off for orders over certain thresholds)

You can test this service on the TryIt.aspx

page(<http://webstrar106.fulton.asu.edu/page1/TryIt.aspx>) by entering different price and quantity values.

**D) Integrated Solution Note (Question 4)**

I have included my full web application solution for code-reading. The solution file (OnlineStoreApp.sln) contains all components including:

- ASPX pages with code-behind
- App\_Code folder with service implementations
- DLL components in the SecurityLib folder
- User controls in the Controls folder
- XML data files in App\_Data folder

The application demonstrates a layered architecture with presentation, local components, remote services, and data management layers as required by the assignment.