

# IRTAZA SHAHZAD

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## Education

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National University Of Computer and Emerging Sciences

Expected Graduation: June 2027

Bachelor of Science in Computer Science

Lahore

- Dean's List of Honour 2x— **GPA: 3.52**
- Courses: Programming Fundamentals, Object Oriented Programming, Computer Organization and Assembly Language, Data Structures, Database Management Systems, Operating Systems

## Projects

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### Grocery Management System

React | Tailwind CSS | Node.js | Express | MSSQL

- Built a complete e-commerce platform with **user and admin panels**, real-time authentication (signup/login), and secure session handling
- Admins can perform **CRUD operations** on users and product categories; users can browse items, add reviews, mark favourites, and place orders
- Designed **RESTful APIs** and integrated frontend with backend using Express.js and MSSQL database

### Flappy Bird (NASM Game)

NASM Assembly | x86 16-bit Architecture

- Developed a console-based Flappy Bird clone in **NASM Assembly**, running in 16-bit text mode with live scoring and proper game state handling
- Implemented **pause, resume, and quit** features, along with real-time **collision detection** and game over screen
- Optimized game logic using limited registers, improving low-level programming and memory manipulation skills

### Pharmacy Management System

C++ (OOP) | File Handling

- Simulated a pharmacy system using **object-oriented programming**, with separate user and admin interfaces
- Admin panel included full **CRUD operations** for medicine listings; user panel supported shopping cart functionality
- Persisted data using **text files** to simulate a lightweight file-based database

### Bingo Game (Terminal-Based)

C | File Handling | ASCII UI

- Created a customizable **a × a grid Bingo game** with a colorful ASCII-based interface and terminal controls
- Included **pause, resume, and quit** functionality, with high score tracking and game history stored using files
- Used console colors and system commands to simulate an interactive game experience in the terminal

## Coursework Projects

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- Implemented a **custom memory allocator** and simulated **paging** mechanism in OS Lab using C
- Built a basic **UNIX-style shell** with command parsing, process forking, and redirection in C (Operating Systems)
- Designed **ER diagrams**, applied normalization, and wrote complex **SQL joins and triggers** in DBMS project
- Developed a simple **banking management system** using file handling and object-oriented design in C++

## Technical Skills

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**Languages:** C, C++, SQL, HTML5, CSS, JavaScript, Assembly

**Frameworks/Libraries:** ReactJS, NodeJS, ExpressJS

**Databases:** MSSQL

**Developer Tools:** Git, GitHub, Postman, VS Code

**Operating Systems:** Windows, Linux (Ubuntu, WSL)