# Joshua Sta.Ana

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## Education

**Rutgers University -** New Brunswick, NJ

*Bachelor of Arts in Computer Science*

Relevant Coursework

- **Software Methodology:** OOP, GUI, Testing and Debugging
- **Internet Technology:** HTTP, E-Mail, Video Streaming
- **Design of Algorithms:** Analysis of Algorithms, Search/Sorting, Graph Problems

## Personal Projects

**"Blue is Bright" - Turn-Based Roleplaying Game (C#/Unity):**

Made for the 1-Bit Game Jam. Made using Unity/C# during a 7 day time period.

- Implemented state machines in order to handle transitions between the different battle system states.
- Created custom shaders to give the game its unique 1-bit visual aesthetic that can dynamically switch colors.

**Coffee Making/Shoot 'Em Up - Unity Game (C#/Unity):**

2D Top-down Game made using Unity/C#.

- Used OOP to organize different coffee types and their ingredients.
- A Singleton design pattern was utilized to handle different aspects such as audio, camera, and input.
- 2D collision detection algorithms for bullet collisions.
- Code optimization for the hundreds of bullet objects running at once.

**Grid-Based Action Game  - Unity Game (C#/Unity):**

2.5D grid based game with grid based lighting.

- Used Flood FIll algorithm for the custom lighting for each individual grid space.
- Enemy AI implemented the A* algorithm for navigating the environment.

**Discord Bot - "Board Bot" (Python):**

A board game Discord bot written in Python using the discord.py and pycord libraries.

- Event listeners were used to respond whenever a command appeared in chat and for the different game inputs.
- Managed data structures's memory to prevent memory leaks for when a user's game goes on for too long.

## School Projects

**University Management Page (HTML/mySQL):**

Created an offline site allowing students and administrators to log in and manage coursework using mySQL

- Practiced making readable code and commenting so my project partner can understand my code
- Used different queries to sort and filter the different sets of students, administrators, and courses to show.

**Café Application (Java/Android Studio):**

Android application allows the user to place/remove orders from a database for customizable donuts and coffees.

- Implemented a GUI that is able to work for multiple different screen sizes.
- Sorting algorithms such as quicksort to display the correct order for different items.

## Technical Skills

**Languages:** Java, JavaScript, C, C#, C++, Python, SQL, HTML

**Tools:** Git, Unity, Godot, Gamemaker Studio 2, Android Studio