**Scenario:**

You are an IT administrator tasked with setting up and maintaining a project directory for a new software development project. You need to create directories, manage files, set permissions, and perform system monitoring tasks.

**Part 1: Directory and File Management**

1. **Create a directory structure:**
   * Create a main directory called projectX in your home directory.
   * Inside projectX, create the following subdirectories: bin, docs, src, and test.
2. **Create and manage files:**
   * In the docs directory, create a file named README.md and add the following text to it:

**“This is the documentation for Project X.”**

* + In the src directory, create an empty file named main.py.

1. **Copy and move files:**
   * Copy the README.md file from the docs directory to the test directory.
   * Move the main.py file from the src directory to the bin directory.

**Part 2: File Content Manipulation**

1. **Append text to files:**
   * Append the text This is a test file. to the end of the README.md file in the docs directory.
   * Create a new file named config.txt in the src directory with the following content:

**[settings]**

**debug=true**

**port=8080**

1. **Display file contents:**
   * Display the contents of the README.md file in the docs directory.
   * Display the first 5 lines of the config.txt file in the src directory.

**Part 3: Permissions and Ownership**

1. **Set file permissions:**
   * Ensure that only the owner can read, write, and execute files in the bin directory.
   * Make the docs directory and its files readable and writable by everyone.
   * Ensure that the src directory and its files are readable by everyone but writable only by the owner.
2. **Change file ownership (if necessary):**
   * Assume the files should be owned by a user developer and group devteam.
   * Change the ownership of the entire projectX directory recursively.

**Part 4: System Monitoring and Maintenance**

1. **Check disk usage:**
   * Check the disk usage of the projectX directory.
2. **View file information:**
   * Display detailed information about the main.py file in the bin directory.
3. **Search for files:**
   * Find all .txt files in the projectX directory and its subdirectories.

**Part 5: Archiving and Backup**

1. **Create a compressed archive:**
   * Create a compressed archive of the projectX directory named projectX\_backup.tar.gz.
2. **Verify the contents of the archive:**
   * List the contents of the projectX\_backup.tar.gz archive.