2023 U.S. Information Technology Collegiate Conference Application Development Competition

Do not put your name(s) or your school's name on anything that you submit, including comments, file metadata, videos, and images.
Doing so will result in disqualification of your team.

The only identifying information you should use is your team number.

Fly Fishing Brew Festival 2023

Visit the following site: https://txflyfishingfestival.org/

Your team has been tasked with creating a site to gather videos of the festival. However, the festival does not have money for a video server. Therefore, you have been requested to generate links to other websites (such as YouTube) which actually contain the videos.

Pages/Screens Required: User, Front (index), Administration

User Page: The user page will be used to gather information from anyone who wants to submit a video. It will then store this information into a text file using JSON or XML format**.

Information gathered should include: Owner of Video, Contact Information for Owner, Event/Location in which the video was shot, Location of video (URL), and an indication that the owner has verified they hold all copyrights to the video. An additional field, approved, will be left as 'false' until an administrator has approved the video for display.

Note: For testing use URLs to existing videos on the video web server (YouTube) you choose.

In addition, when the owner is entering the information they are required to create a userid and password. The password must be encrypted or hashed before it is saved in the file. Yes, we know this is not totally secure, but we want to be able to see that the userid and password is properly saved.

The user will have the ability to sign back into the application to change any information they have entered. When signing in, the application must compare the password entered with the encrypted/hashed password. When they change information, the approved field will be reset to 'false'.

Front/Index Page: When the application is first started, it must access the JSON or XML text file** to develop links or menu items which provide access to all approved videos (and the related information). The visitor of the application should be able to click a link (or menu item) and it should display information about the video and play the video. Additionally, a link must be provided to submit or update a new video, which accesses the screen previously mentioned.

Administration Page: All unapproved videos will display links on an administration page for the administrator to approve. The administrator should indicate that the video is approved by clicking a approved check box. This will update the approved field for the video, which will cause it to now display. The administration page must include a userid and encrypted or hashed password for access. Please use the following userid and password:

Userid: Admin   **Password**: USITCC23

Note: For testing, provide information and links to existing videos on YouTube or other video sites. Please avoid using copyrighted material.

** All storage of information will be placed into text files, not databases. This is to remove any connection problems you might otherwise experience. You must include the text files that your application requires with your complete code. Applications which store and retrieve XML or JSON data will earn more points than applications which store information as comma delimited.

Requirements:

1. Object-Oriented Programming – Must include proper use of encapsulation, polymorphism, and inheritance. Must provide proper use of access modifiers, with the concept of protecting all data. Must provide getter and setter methods for updating and retrieving information.

2. All variables, functions, classes, and objects must use meaningful names. The program name and file names must also be meaningful.

3. All data must be saved to text files only. Data stored and retrieved as XML or JSON format will receive more points than regular text data. Data files must be stored and accessed from their own folder (Data).

   a Do not use an absolute file path (i.e., do not specify a path like c:\data\data.txt) in your program code. Rather, use a relative path (such as data\data.txt).

   b Please create a constant at the top of your code which is used to access the file(s). This will allow the judges to easily change the location, if needed.

4. Exception handling must be included. Throw exceptions for missing files and possible user entry errors. The main module of the program must handle any exceptions thrown by the code or by the system itself.

5. Strong security must be provided. Examples include: Limited use of textboxes (use drop downs, lists, radio buttons, check boxes when possible). When using textboxes, check for security intrusion (such as the user trying the enter SQL or HTML information). Make sure that the correct type of information is entered in a textbox, such as a URL in a URL box. Can you validate that the URL actually exists?

6. Program Documentation – Must provide internal (comments) document for the application, functions, and classes to include: IPO (Input-Process-Output) information.

7. Testing – Complete testing must be demonstrated via both program code (when possible) and through the video demonstration (#8). This includes (but not limited to), results when the proper information is entered or updated by the user, results when the user enters improper information, display of videos in front page, and use of administrator page.

8. **REQUIRED: Video (less than 5 minutes, optionally sound can be turned off) demonstrating the features of your working application. Submissions without videos will not be judged.** Demonstrate the application either in the simulator, browser or on an actual mobile phone. The video will **not** be judged for quality or originality but will be used to ensure that the judges don't miss any features you have included in your application. Include a demo of all testing requirements (see #7).

   o Please provide a link to your video on YouTube or a similar service. Make sure that the access to the video is public. Do not provide or depend on your server recognizing the user accessing the video. Multiple judges will need access to the video. If this is not possible you can upload your video directly to the LMS - HOWEVER, the file size must be under 200MB.

9. Efficient/Professional: Efficient code will be given more points than other code that accomplishes the requirements but is not efficient. Code must be professional, well organized and designed.

10. Assumptions: As is the case when gathering requirements from users, many program details are not included in the provided description. There are cases where you must make reasonable assumptions about how the application should function. Document these assumptions in a Word, or PDF file and include them with your solution.

11. **Note for Java submissions**: If you are using Java, in addition to installing Java 11, you may need to install Java11FX (now a separate install) from the following site: https://openjfx.io/. The judges will be compiling the Java submissions using Java11 with Java11FX. Any additional tools you use (such as form builders) must use only the libraries contain in these installs. If the program does not compile, it will not be judged.

12. **Note for Visual Studio:** You can use **C#, Visual Basic, or Python** within the Community 2022 version of Visual Studio. The judges will use this version to test your application. If it does not run in this version (with no additional add ins), it will not be judged.

13. **Note for Android Developers:** Android applications will be tested using Android Studio Chipmunk or Android Studio Electric Eel. Please indicate (in the assumption file) which level of studio you used to create your application.

14. **Note for IPhone Developers:** : Go to https://developer.apple.com/download/ and sign in with a registered Apple Developer account. (If you do not have an account, you can register for free here:

> https://developer.apple.com/register/index.action)

Select "Download **XCode 14**". Do not select any recently released or other beta versions of XCode.

15. **Exe Required:** No matter what language you use for developing your application you MUST include an executable file. This allows us to run your program without having any version or IDE problems. If we can not run your program, we can not judge it. In the assumption Word/PDF file, tell us the name and location of your exe file so that we don't have to hunt for it. The file should run independently of your development environment. **Make sure you test it!!**

You are encouraged to submit partially working code (with the video and exe file). Don't assume that another team completely solved the problem. However, your code must run without an errors. Comment out code that does not work or causes errors.

What to turn in:

Create separate subfolders (under a folder with your team name – i.e., APP_##) for each of the following:

Application folder - which includes all code including source code and compiled (executable) code. The file must include everything the Java IDE, Visual Studio IDE, Android Studio IDE, or iPhone IDE generates. Don't just include code you created.

Data folder - which includes all XML or JSON data files (with example data).

Documentation folder - which includes an assumption file which includes the video URL location, the location of your exe file, information about what Android Studio version you used (if needed), and any assumptions.

Then compress all items into one ZIP file (do not use any other compression technique). Non-zip files will NOT be judged!

You MUST submit a video of your working code. Failure to provide the video and an executable (exe) file will cause your application to not be judged. Even if you do not complete all requirements, you still need to include the video and an executable file of what does work.

Code that produces errors when executed will not be judged.
You should comment out code that 'almost works'.

Good luck and get busy!