

(V04) Web Application Team

Description

The team will create a database-driven website with server-side functionality. The team is provided with the opportunity to design, build, and present a working web application. Teams will be further required to formally present their project to a panel of judges via videoconference, and the presentation will be judged independently of the project's technical merits.

Eligibility

- Any Business Professionals of America student member may enter this event.
- A team will consist of 2-4 members.
- There are no restrictions on the number of entries per chapter or per state.

Event Registration

- Advisors register members for the event using the Membership Registration System, accessible at <https://register.bpa.org>.
- Click on the "Conferences" tab and then select the "2025 National Virtual Events".
- Event registration can be purchased with your original invoice or with a new invoice after member registration.
- The registration deadline is no later than 5:00 p.m. Eastern Time, on December 1, 2024.
- Members participating in competition must be registered for the event prior to the submission deadline to be eligible.

Entry Fee

There will be a \$20 fee for each team (*invoiced during event registration*).

Topic

Companies are looking for ways to keep their employees healthy which can reduce health insurance rates and boost company morale. Develop a Healthy Habit Team Tracker web application to track teams of users' data for team competition. This application will help users build and maintain healthy habits, encourage team building, and promote comradery in the workplace. The app should allow users to set up a team in competition with other teams. Each team can set daily and weekly goals, track their progress, and share and receive motivational reminders. The team can earn digital team badges that will be displayed in the app.

Key Features:

- Habit Tracking: Teams can set daily, weekly, or monthly goals for various habits (e.g., exercise, hydration, mental interaction with hobbies/pets, daily calories, sleep, optional percentage of weight loss).
- Progress Visualization: Charts or graphs to visualize progress over time.
- Reminders and Notifications: Customizable reminders to encourage consistency and complete team goals for the day or week, i.e.: Your team needs 245 more steps to reach your goal, etc.
- Gamification: Earn rewards or badges for reaching milestones.

Technical Requirements:

- Backend: Use a cloud-based service to store user data and habit tracking information.
- Database: Store user profiles, habit data, and progress history.

Required Features

- Administrator account with full permissions
- Register and authenticate team captain user (including team captain password reset and account deletion)
- Register and authenticate users (including password reset and account deletion)
- Use encryption to protect data and passwords
- Create different account types
 - Team Members – Allowed to add and modify personal goals data
 - Team Captains – Allowed to add and modify team goals and settings
 - Contest Administrator – Allowed to add and modify teams and set and modify company goals
- Monitor and display top teams, top individuals
- Provide operation tutorials for each type of user.

Possible Features

- Health facts
- Videos for new healthy habits
- Progress notifications
- Company, Team, and Individual Goal Completion certificates and badges
- Use external authentication (i.e. Google, Facebook or Twitter)

Competencies

- Demonstrate database development in a structured or unstructured environment
 - Contestants can use a cloud-based environment such as Mongo DB or Firebase
 - Contestants can use an SQL database
 - No flat files (text files) can be used to store data
- Demonstrate knowledge of server-side scripting and Internet concepts
- Evaluate and delegate responsibilities needed to perform required tasks
- Demonstrate teamwork skills needed to function in a business setting
- Utilize external Application Programming Interface (API)
- Apply database development skills to create the back end of the web application
- Apply web design skills and standards to complete the front-end of the website
- Implement problem-solving techniques
- Describe the process, methodology, and lifecycle of your web application
- Create an audit trail of how you built your application

Teams who do *not* submit an entry that follows this topic will be *disqualified*.

Specifications

- Final projects must be uploaded to a file sharing site (Dropbox, etc.) and should include:
 - a written description of the application as a PDF file
 - the source code (as a zipped root folder)
 - the database schema
- It is recommended that you set the access level of your project to one of BPA's recommended settings. See the Cloud Storage / File Sharing Guidelines for more information.
- **Submit the URL to the final project files, Works Cited, and signed Release Form(s) in a combined PDF file to <https://upload.bpa.org> no later than 5:00 p.m. Eastern Time, on January 15, 2025.**

Business Professionals of America Workplace Skills Assessment Program

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Release v1.2 October 4, 2024

- Individual confirmation of receipt *cannot* be provided by the National Center.
- No fax or mailed copies will be accepted.
- No exceptions can be made for missed deadlines due to incorrect submission or technical difficulties.
- Multiple submissions *cannot* be accepted.
- Only one (1) team member should complete the submission.
- No changes can be made to the project after the date of submission.
- The website must be available for viewing on the Internet on January 15, 2025. If the ISP is experiencing technical difficulty, the advisor will be contacted, and a reasonable amount of time will be provided to solve the problem. No changes can be made to the website after this date. Technical judging of the website will be conducted prior to NLC.
- The following information must be included on the website: chapter name and number and team member names. This information can be included in any format and location.
- The team members must create a conceptual model for the database identifying relationships between tables in the database. Each team will be expected to articulate the design of the database associated with the web application.
- Each team must create forms and associated considerations needed for the scenario.
- Teams may select the database, web server, and middleware solution they prefer. A careful review of the evaluative criteria presented in the contest guidelines will aid in the selection of development technologies. The source code that powers each team's web application will be scrutinized; therefore, it is imperative that team members can answer questions regarding this aspect of the application.
- The event tests the team's ability to write code and incorporate databases. As such, application frameworks, such as Drupal®, Joomla!®, DotNetNuke® and WordPress® *cannot* be used. Integrated development environments (IDEs) such as Microsoft® Visual Studio/ASP and Dreamweaver® are acceptable. Packages that assist the developer to create components, menus and similar such as JavaScript®, jQuery® and Ajax are acceptable and encouraged. However, downloading third-party code to create a major component of a web application, such as a shopping cart in an e-commerce application, is *not* permissible.
- Code must be the original work of the team.
- Teams will be assigned to sections prior to their preliminary presentation.
- For teams who qualify, the teams' advisors will be contacted to reserve a time for a videoconference presentation before a panel of judges. Email confirmation will be sent to those teams eligible to reserve a presentation time. The dates and times for presentation reservations will be announced via email notification.
- The top teams with the highest cumulative technical and presentation scores will be invited to attend the National Leadership Conference to be recognized for their outstanding efforts and to participate in the National Showcase. See <https://bpa.org/nlc/virtual-competitions-and-nlc-national-showcase/> for more information.
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Upload Requirements

What to Submit at https://upload.bpa.org	Saved File Name(s)	Deadline
URL to project files, Works Cited and Release Form(s) in one combined PDF file.	V04-TeamID.pdf	January 15, 2025, 5:00 p.m. Eastern Time

Method of evaluation

Application

Technical Judges' Rating Sheets

Presentation Judges' Rating Sheets

Length of event

No more than three (3) minutes setup

No more than ten (10) minutes presentation time

No more than five (5) minutes judges' questions

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Judge Number _____

Team Number _____

Technical Scoring Rubric

Required Elements (If any questions below are checked NO, stop scoring and assign a TOTAL score of 0)					
Team followed topic					<input type="checkbox"/> Y <input type="checkbox"/> N
Team followed Copyright and/or Fair Use Guidelines					<input type="checkbox"/> Y <input type="checkbox"/> N
If no to either question, please stop scoring and provide a brief reason for the <i>disqualification</i> :					
Items to Evaluate	Below Average	Average	Good	Excellent	Points Awarded
Team submitted the correct information and in the correct format. <ul style="list-style-type: none">• Works Cited - PDF format• Release Form(s) - PDF format <i>All points or none are awarded by the technical judge.</i>				10	
Page Design					
Visual organization is easily understood	1-5	6-10	11-15	16-20	
Aesthetic use of colors and fonts	1-5	6-10	11-15	16-20	
Images and page file size have been optimized for performance	1-5	6-10	11-15	16-20	
Grammar, spelling, punctuation, and usage	1-5	6-10	11-15	16-20	
Sufficient contrast between text and background color	1-5	6-10	11-15	16-20	
Total Format and Page Design Points (110 points maximum)					
Customer Functionality					
Navigational links consistent and working	1-5	6-10	11-15	16-20	
End-user instructed on the proper formatting for forms and given feedback upon submission	1-5	6-10	11-15	16-20	
Cross-browser and cross platform compatibility	1-5	6-10	11-15	16-20	
Ability to utilize a search feature	1-5	6-10	11-15	16-20	
Total Customer Functionality Points (80 points maximum)					
Database Development					
A database is employed (<i>as opposed to flat file</i>)	1-5	6-10	11-15	16-20	
Conceptual model correctly implemented	1-5	6-10	11-15	16-20	
Minimal data redundancy in tables	1-5	6-10	11-15	16-20	
Sensitive data encrypted in the database	1-5	6-10	11-15	16-20	
Database access is controlled through passwords, access control lists, etc.	1-5	6-10	11-15	16-20	
Use of unique key concepts are employed	1-5	6-10	11-15	16-20	
Total Database Development Points (120 points maximum)					

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Technical Scoring Rubric (continued)

Items to Evaluate	Below Average	Average	Good	Excellent	Points Awarded
Application Design					
A system/application diagram was created and employed	1-5	6-10	11-15	16-20	
Maintains state through sessions with and without cookies	1-5	6-10	11-15	16-20	
Encrypts highly sensitive user information	1-5	6-10	11-15	16-20	
Forms fields are validated before submission	1-5	6-10	11-15	16-20	
Queries and/or stored procedures are utilized	1-5	6-10	11-15	16-20	
Error capture routines are employed where needed	1-5	6-10	11-15	16-20	
Total Application Design Points (120 points maximum)					
Administration					
Appropriate web-based reports are generated for the application	1-5	6-10	11-15	16-20	
Administrator has the ability to add, modify, and delete data through a password-protected web interface	1-5	6-10	11-15	16-20	
Code is documented	1-5	6-10	11-15	16-20	
Total Administration Points (60 points maximum)					
Application functions as indicated (it works)					
Reports generate accurate results	1-5	6-10	11-15	16-20	
Content may be public or private	1-5	6-10	11-15	16-20	
Administration functions work as indicated (add, modify, delete)	1-5	6-10	11-15	16-20	
Security functions as it should	1-5	6-10	11-15	16-20	
Required features: <ul style="list-style-type: none">• Have an administrator account• Register users• Authenticate users• Protect all passwords• Add user content	1-10	11-20	21-30	31-40	
Total Application Points (120 points maximum)					
TOTAL TECHNICAL POINTS (610 points maximum)					

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Team Number _____

Presentation Scoring Rubric

	Below Average	Average	Good	Excellent	Points Awarded
PRESENTATION POINTS					
Ability to explain development/design process	1-5	6-10	11-15	16-20	
Ability to demonstrate how the application works through the use of the user interface	1-5	6-10	11-15	16-20	
Ability to explain the logical design of application and design patterns used	1-5	6-10	11-15	16-20	
Ability to explain the code structures that perform front end and backend functionality	1-5	6-10	11-15	16-20	
Offered clear and direct responses to interview questions	1-5	6-10	11-15	16-20	
Grammar, spelling, punctuation, and usage	1-5	6-10	11-15	16-20	
Presentation quality/style	1-5	6-10	11-15	16-20	
All points or none are awarded per item below.					
Equipment setup lasted no more than three (3) minutes.				5	
Presentation lasted no more than ten (10) minutes				10	
At least two original team members in attendance at time of presentation				10	
TOTAL PRESENTATION POINTS (165 points maximum)					

Props and/or additional items shall not be used as a basis for scoring.

PRESENTATION WILL BE STOPPED AT TEN (10) MINUTES

TOTAL MAXIMUM POINTS = 775