

(V04) Web Application Team (ML | S | PS)

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 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>.
- The event can be added to your invoice using step 4, "Virtual Event Registration." Enter the name of each student into the "notes" field.
- Event registration can be purchased with your original invoice or with a new invoice after member registration.
- Registration deadline is no later than 11:59 p.m. Eastern Time, on November 15, 2021.
- Members participating in competition must be registered for the event prior to submission deadline to be eligible.

Entry Fee

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

Topic

Touch of Class Events is an up-and-coming company in the area of event planning. They have hired your group to develop a web application to serve as their online reservation system for the new event center. Your team's primary objectives are to create an application to register and pick seat(s) from a visual diagram.

Required Features:

- Pick table or seat(s)
- Selectable Event Options
- Tickets and Reservations
- Itinerary Report
- Login/Registration
- Administration
 - Login Page
 - Reports
 - Modify Data

Possible Features:

- Door prizes/auctions
- Customer Reviews
- Online Wallet
- Link to multiple social media channels
- Customer account page
- Weather Forecast
- Email confirmations
- Additional add-on packages
- Rate the Ride

Competencies

- Demonstrate database development and structured query language (SQL) skills
- Demonstrate application security features
- 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
- Apply database development skills in order to create the back-end of the web application
- Apply Web design skills and standards in order 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 page 23 for settings recommendations.
- **Submit the URL to the final project files, Works Cited, and signed [Release Form\(s\)](#) in a combined PDF file to: <https://virtual.bpa.org/submit>, no later than 11:59 p.m. Eastern Time, on January 15, 2022.**
- Members will receive an automated response confirmation at the time of submission.
- 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 members 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, 2021. 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 in the website: chapter name and number, team member names this information can be included in any format and location.
- The team members must create the 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 are capable of answering questions regarding this aspect of the application.
- The event tests the team's ability to write code and incorporate database. As such, application frameworks, such as Drupal®, Joomla!®, DotNetNuke® and WordPress® *cannot* be used. IDE's such as Microsoft® Visual Studio/ASP and Dreamweaver® are acceptable. Packages that assist the

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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 original work of 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. E-mail confirmation will be sent to those teams eligible to reserve a presentation time. The dates and times for presentation reservations will be announced via e-mail 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.
- The top teams may participate in the Virtual Event Forum for all participants and advisors.
- It is the policy of Business Professionals of America to comply with state and federal copyright law. Federal law pertaining to copyright, as contained within the United States Code, is available at <https://www.copyright.gov/title17/title17.pdf>. The *Style & Reference Manual* contains guidelines for Copyright and Fair Use. Participant(s) will be *disqualified* for violations of the guidelines.
- National Business Professionals of America grants permission for the use of the copyrighted logo and tagline.

Method of evaluation

Application

Technical Judges' Rating Sheet

Presentation Judges' Rating Sheet

Length of event

No more than three (3) minutes set-up

No more than ten (10) minutes presentation time

No more than five (5) minutes judges' questions

Please note: Those teams who wish to receive judges' comments must submit an e-mail address at the time of submission.

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Judge Number _____

Team Number _____

Technical Scoring Rubric

Team Violated the Copyright and/or Fair Use Guidelines	<input type="checkbox"/> Yes (<i>Disqualification</i>)	<input type="checkbox"/> No
If yes, please stop scoring and provide a brief reason for the <i>disqualification</i> below:		

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 Page Design Points (100 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 & 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 relational 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	
SQL 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	
Itinerary report returns accurate results	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">• Selectable event options• Pick table or seats• Tickets and Reservations• Login and Registration	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	
TOTAL PRESENTATION POINTS (140 points maximum)					

SPECIFICATION POINTS: All points or none per item are awarded per item.		Points Awarded
Equipment set-up lasted no more than three (3) minutes	5	
Presentation lasted no more than ten (10) minutes	10	
TOTAL PRESENTATION SPECIFICATION POINTS (15 points)		

TOTAL MAXIMUM POINTS = 765