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1. Introduction
   1. Describe problem
      1. Proposed system is a means of pairing volunteers with events. System allows volunteers to sign up for events and lets event coordinators to post information and manage participation for events.
   2. Definitions
      1. stakeholder - An event manager who is able to post details to the system about what types of people are needed to volunteer for an event as well as the information about the event itself.
      2. volunteer - A user who posts information about themselves including name, age, gender, availability, and contact information that will be used to reach the user if a stakeholder needs that user as a volunteer for their event.
      3. system - – The implementation of our matching operations which will notify a volunteer when they have been selected by a stakeholder that needs their help at an event. This system will also perform other database-maintenance functions.
      4. database - – Collection of items containing information. In this instance such information would be general event information such as time/place and volunteer information such as name, age, and availability.
2. Description
   1. Three major components of the system
      * 1. volunteer registration
        2. event management
        3. event-volunteer pairing
      1. Registration
         1. prompts users to provide basic information(name, phone number, email address, mailing address, gender) as well as a field to indicate whether the user is a volunteer or a stakeholder. The volunteer registration will also allow the user to select any number of skills from a list that applies to the user, or input skills not found on the list.
      2. Event management
         1. Stakeholders are able to use this part of the system to post events. The stakeholder will need to include an event description, start and end times, location, and a list of needed volunteer positions.
         2. Other options including: view current events, cancel event, request volunteers, change event information, view confirmed volunteer information, change volunteer position.
      3. Event-Volunteer pairing
         1. System recommends registered volunteers to open volunteer positions based on skills applicable to the volunteer. Sends compatible recommendations when volunteer first registers with the system as well as periodically as long as the volunteer retains an active status with the system.
         2. Sends confirmation to volunteers when they register for event. Confirmation reply is required within 3 days or the registration is deleted. An event reminder is sent the volunteer 3 days before the event is scheduled.
         3. Filters inactive users from list of eligible recipients for event recommendations. A user is considered inactive if he/she has not logged in for 6 months.
   2. User Classes
      1. 2 user classes – volunteer and stakeholder
      2. Volunteers will need permissions to edit any of the personal information input during the registration process, in order to keep contact information current.
      3. Stakeholders will need permissions to edit any personal information, as well as permissions to edit event information. Stakeholders will also need a means to view and handle requests from volunteers to change positions.
   3. Constraints/Assumptions/Dependencies
      1. Possible system constraints
         1. The web server may limit the number of simultaneous connections to the system. This may require the developers to set a connection timeout limit that is low enough to ensure that all connections to the system are being actively used. Users who stop using the system for longer than the timeout limit will be disconnected to allow new connections to be made by users who are ready to start using the system. The web server may place a limit on the amount of memory the system may consume.
         2. The database system may have a limit on the amount of time a connection from the web application system will stay open requiring the developers to not produce any code which requires the database connection to stay open until code execution completion. The database system used must have the capability to allow two volunteers to register for the same event at the same time. This database system must also allow the developers to prevent one stakeholder from writing over changes made by another stakeholder for the same event made since the first stakeholder acquired access to the event information.
         3. The CASE tools used in the implementation of the system may produce software components that are not fully optimized. Unless these software components are modified by the developers, the system may run unacceptably slow when it performs certain tasks. This could cause delays in the system interactions with users. If the delays are found to be unacceptable, the developers may need to manually recreate the software components that are responsible for the delays.
      2. Assumptions
         1. only volunteers and stakeholders will use the system
         2. Any new required classes that are discovered over software development cycle will change existing requirements.
      3. Dependencies
         1. may reuse components of enrollment management system
         2. enrollment management system allows students to register for classes and administrators to manage enrollment in courses that are part of the system.
         3. Would need to modify the system to convert into working volunteer enrollment system.
3. Specific Requirements
   1. User Interface
      1. Login and registration
         1. login page of proposed system will have username and password field and a link to a new user registration page.
         2. new user will input name, gender, mailing address, email address, phone number and indicate whether the user is a volunteer or a stakeholder, as well as a desired password and username. At this point, a menu will be available for volunteers to select from a list all skills that are applicable to them. The user will also be able to input any additional skills that are not found on the skill list.
         3. Once inputs have been filled, the user can choose to save all inputs. At this point, the system will verify all fields have inputs, the username has not yet been used, the password meets minimum complexity requirements, and that all inputs contain valid data.
      2. Volunteer Homepage
         1. if the user successfully logs in as a volunteer, he/she is taken to the volunteer homepage. Homepage contains links to the Volunteer Event Management page and the Edit Information page.
            1. Volunteer Event Management page – allows user to manage participation(view active events, cancel participation) in registered events, as well as view any pending requests for event participation.

if the user selects one of the listed events, the system will display all event information and give the user the option to request a different position for the event.

if the user selects a pending request, the system will give the user the option to accept or decline the request. If the user accepts, the system enrolls the user in the event for the position listed in the request.

* + - * 1. Edit Information page – allows user to update personal information previously saved in the system. Displays all the same fields displayed during the New User Registration page, with preexisting values in each field to allow the user to only edit information that needs to be updated. Once changes are saved, the user will be redirected to the Volunteer Home page.
    1. Stakeholder Home page
       1. If the user successfully logs in as a stakeholder, the user will be redirected to the Stakeholder Home page. The Stakeholder Home page will contain links to the Edit Information page and the Stakeholder Event Management page.
          1. Stakeholder Event Management page – displays the user’s currently scheduled events and any notifications from the system with options to create a new event or cancel an already scheduled event.

if the stakeholder wishes to create a new event, he/she will be redirected to the Create Event page, which will contain fields for the event start and end times, description, available volunteer positions, registered volunteers not yet assigned positions, and event locations. Once the user has filled out all inputs, he/she can save the event, at which time, the system will verify that all inputs have been filled with valid data. If the system detects any errors, the system will display an error message and the fields will be reset. Once the user successfully saves the new event, he/she will be redirected to the Stakeholder Home page.

when the stakeholder selects a scheduled event, the system will display all information previously saved in system, as well as options to edit information, view volunteers, or cancel the event.

when the stakeholder selects a notification, the system will display the full notification as well as the originator(system or person). If the notification is a request from a person to change volunteer position, the user will have the option to accept or deny this request.

* 1. Functional Requirements
     1. Register Volunteer - takes user information and enables user to register for events through the system.
     2. Volunteer for Event – allows user to select which event he/she wants to volunteer for and add his/her information to the list of participating volunteers.
     3. Request Different Volunteer Position – allows a volunteer to request a different position assignment for an event.
     4. Cancel Volunteer Participation – allows a volunteer to cancel his/her participation in an event. Function removes volunteer’s name from list of participating volunteers
     5. Edit Volunteer Information – allows volunteers to change personal and contact information, including relevant skills they possess.
     6. Post Event – allows event coordinators to post new events into the system. Once the event is posted, volunteers will be able to view the event’s information and register for it.
     7. Cancel Event – allows event coordinators to cancel an event. This will remove the event from the system and send a notification to all participating volunteers.
     8. Change Event Information – this allows event coordinators to edit information about the event. When event information is edited successfully, the system will send a notification to all participating volunteers.
     9. Pair Event Volunteer – the system will recommend new events to volunteers by comparing available volunteer positions with the skills the user saved in their Volunteer Information. Once an event is recommended to the volunteer, the event will display in the Volunteer Event Management page.
     10. Confirm Volunteer – when a volunteer registers for an event on their Volunteer Event Management page, the system will send a notification to confirm the volunteer’s participation.
     11. Send Reminder – sends a notification reminding the volunteer of his/her participation in an event. The notification will contain reminders of event location, start and end times, as well as the position the volunteer is expected to fill.
     12. Filter Inactive Volunteers – removes volunteers from list of eligible recipients for new volunteer notifications if the user has not logged on within the last six months. Also removes volunteer from event registry if the volunteer fails to respond to event registration confirmation within three days of event registration.
     13. Assign Volunteers – Allows stakeholders to assign available positions to volunteers who have registered for an event.
     14. Send Volunteer Assignment Notification - Whenever a stakeholder assigns a position to a volunteer, the system sends a notification of the update to the volunteer.
     15. Register Stakeholder – takes user information and allows user to create and manage events in the system.
     16. Delete User Account – allows user to remove all personal information saved in the system. When a user account is deleted, the username associated with that account becomes available to be registered under a new user.
     17. Edit Stakeholder Information – allows user to edit all personal and contact information and save changes in system.
     18. Verify User – verifies username and password are correct upon input into login screen.
  2. Security Requirements
     1. Volunteer information, Stakeholder information, and Event Information will all be saved into the system. All saved information must be protected from unauthorized access and modification.
        1. To achieve this – passwords will be mandatory for all users in the system.
        2. Tests will be run to insure users are prohibited from registering accounts whose passwords do not comply with preset password complexity requirements.
        3. Password input during login and registration screens will not be displayed on screen to insure that anyone viewing the screen other than the user will be unable to determine what was input.
        4. As a standard security practice, they system will not send any notifications that contain the user’s full name, contact information, gender, etc. This will help address privacy concerns our users may have.
        5. Volunteers will only be able to edit their own information. Volunteers will not be able to see a list of volunteers registered for any event.
        6. Stakeholder will be able to view the names of all volunteers registered for the event. This is meant to help identify any volunteers with possible harmful intentions. Stakeholders will be able to view all skill information that volunteers have saved in the system. This measure will help match volunteers to positions when the system is unable to recommend events to a volunteer or match needed positions for a stakeholder.
        7. The volunteers will be able to manually input skills into the system in the event that the listed skills do not adequately describe the volunteer. This will help when a stakeholder may need to manually match a volunteer to a position
        8. All attempts from outside the system to use the system for sending emails or notifications will be blocked. This will prevent the system from being used to send spam, help prevent email-based social engineering attacks, and help prevent interference with the normal functions of the system.