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CPT_S 322 Milestone 2

Team Name: FireMap

Introduction

Although many useful sources of wildfire-related information can be found online, the information tends to be spread out amongst several different websites. The main goal of this project is to aggregate several different online sources of wildfire-specific information into a single Near Real-Time (NRT) online wildfire map application. The geographical scope of the information included in this project will initially be limited to the state of Washington, with the potential of expansion to other nearby states.

This application is to be used as a source of general wildfire information for the following stakeholders:

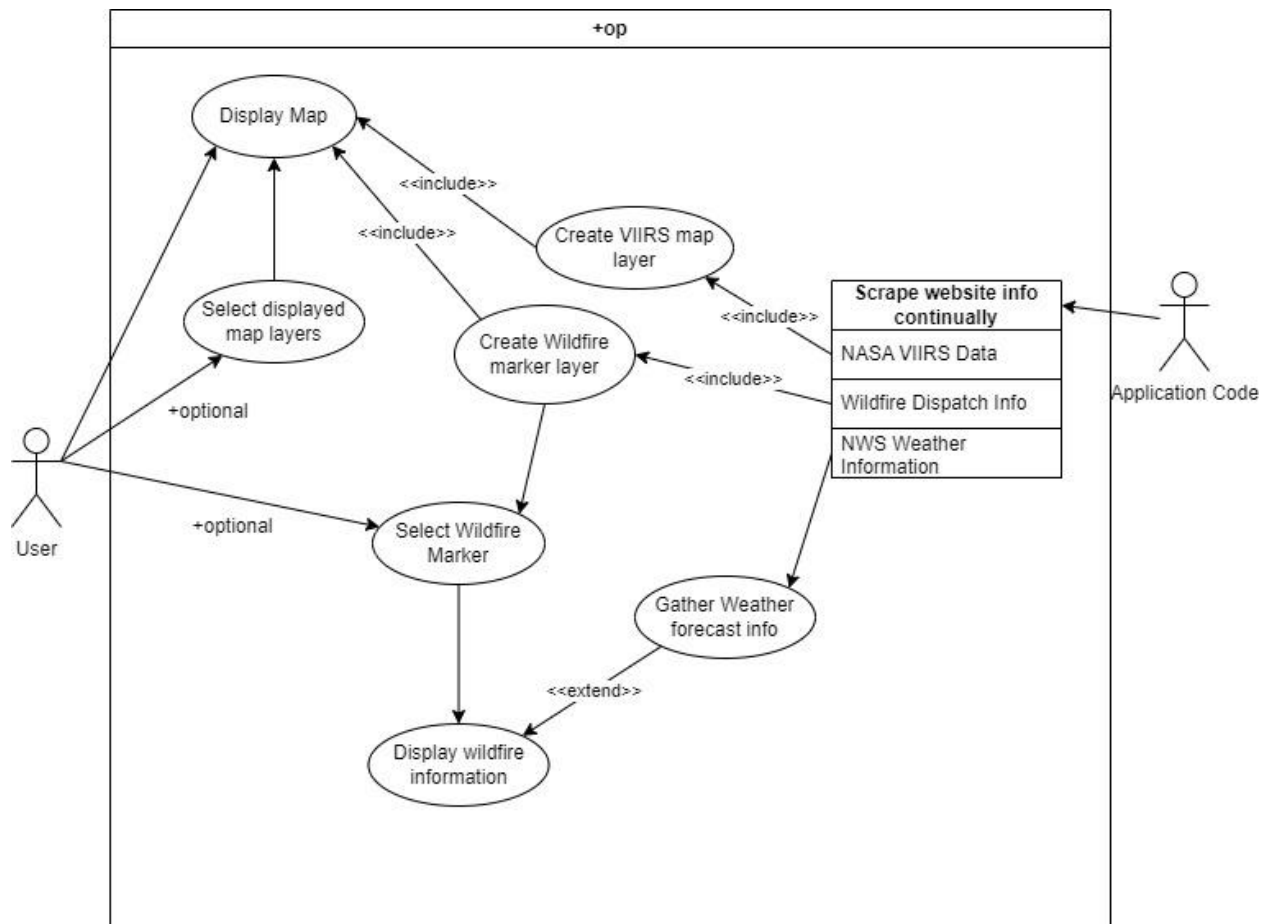
- Wildfire operational resources
- Government wildfire organizations (USFS, WA DNR, BLM, BIA, DFW)
- General Public
- Incident Management Team (IMT) personnel

This application will aggregate the following wildfire-related information as part of an interactive online map:

- NWS Weather Info (Temperature, Relative Humidity, Wind, Lightning, etc.).
- NASA VIIRS Thermal Activity satellite data
- Current wildfire incident data from wildcad.net and data-nifc.opendata.arcgis.com.

This application will be required to continually update information every several minutes from each of these sources.

Use Case Diagram



Display Map

Actors	User, Application Code
Goal	Display aggregated near-real time wildfire data in an interactive map.
Preconditions	<ul style="list-style-type: none"> - NASA VIIRS data received and processed - Wildfire dispatch information received and processed
Scenarios	User accesses the website URL
Exceptions	None

Select displayed map layers

Actors	User
Goal	Allow users to toggle wildfire markers and VIIRS thermal activity layers.
Preconditions	None
Scenarios	User optionally selects map layer menu
Exceptions	Optional feature; is not required.

Select wildfire marker

Actors	User
Goal	To select a specific wildfire for more detailed information
Preconditions	Map must be populated with wildfire icons
Scenarios	User clicks on an available wildfire icon on the map
Exceptions	Optional feature; is not required.

Display wildfire information

Actors	User, Application code
Goal	To display detailed wildfire information, combined with weather information for the area nearest to the wildfire.
Preconditions	<ul style="list-style-type: none">- Wildfire icon must be clicked on by the user.- NWS weather data for the location closest to the wildfire must be obtained
Scenarios	User clicks on an available wildfire icon on the map
Exceptions	Can only be displayed after wildfire icon is clicked

Gather weather forecast info

Actors	Application code
Goal	To obtain and process web scraped weather information for the location nearest to a selected wildfire
Preconditions	A wildfire icon must be clicked on by the user
Scenarios	User clicks on an available wildfire icon on the map
Exceptions	Will only be displayed after a wildfire icon is clicked on

Create wildfire marker layer

Actors	Application code
Goal	Process scraped web information to populate the map with wildfire icons
Preconditions	Wildfire dispatch information must be obtained by the application code
Scenarios	Occurs when the application code refreshes scraped web data
Exceptions	None

Create VIIRS map layer

Actors	Application code
Goal	Populate the map with thermal activity points from scraped NASA VIIRS data.
Preconditions	NASA VIIRS data must be obtained by the application code
Scenarios	Occurs when the application code refreshes scraped web data
Exceptions	None

Scrape website info continually

Actors	Application code
Goal	Obtain the necessary data to populate the map with wildfire information
Preconditions	Scraped websites must be accessible
Scenarios	The application code the end of a predetermined information refreshing interval (Exact amount of time is TBD)
Exceptions	None