Name: Joseph Andrey Dacera
Course and Year: BSCS – 4
Subject: CSci 141 Intelligent Systems

Exercise No. 3: Fuzzy Expert System

Input Variables

- Height of Flood (in meters)
- Rainfall (in millimeters per hour)

Output Variables

- Flood Alert Classification

Fuzzy Sets

Input Variable: Height of Flood

Linguistic Terms	Universe of Discourse
Low	[0 .75 1.5]
Moderate	[1 1.75 2.5]
High	[2 3 4]

Input Variable: Rainfall

Linguistic Terms	Universe of Discourse
Light	[0 7.5 18]
Moderate	[15 22.5 30]
Heavy	[27 37.5 65]

Output Variable: Classification

Linguistic Terms	Universe of Discourse
Yellow	[0 13 25]
Orange	[20 40 60]
Red	[50 75 100]

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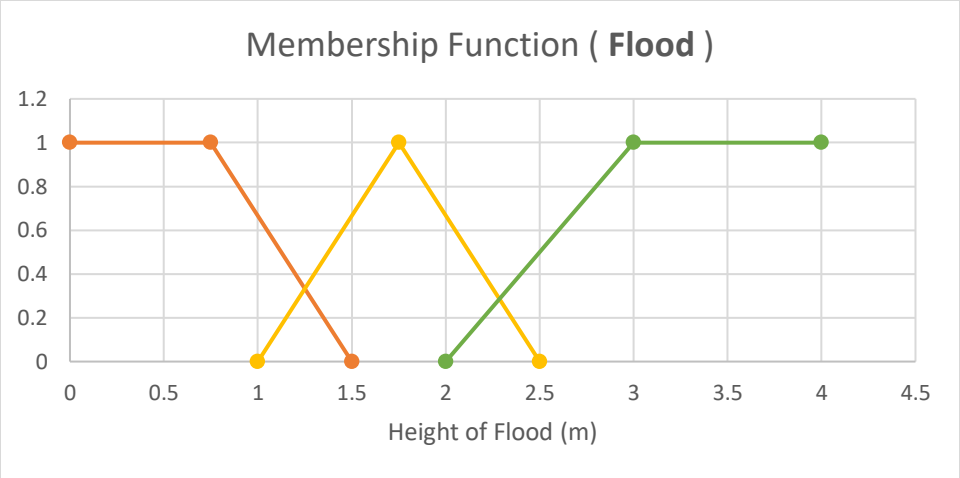
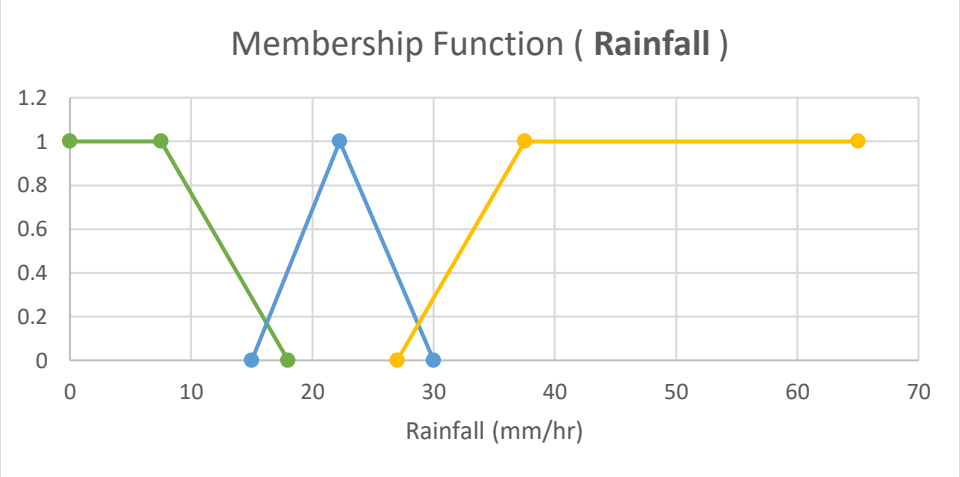
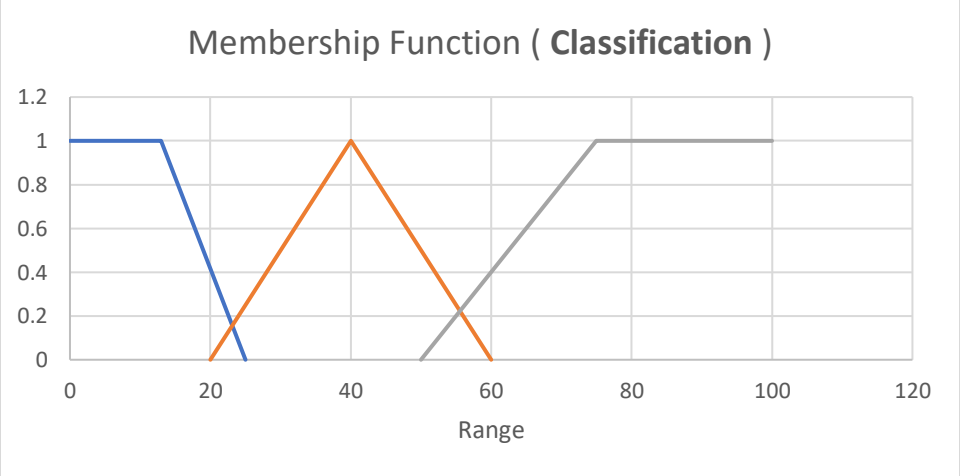
Membership Function

Input Variables





Output Variable



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Fuzzy Rules

		Rainfall		
		Light	**Moderate**	**Heavy**
Flood	**Low**	Yellow	Yellow	Orange
	Moderate	Orange	Orange	Red
	High	Red	Red	Red

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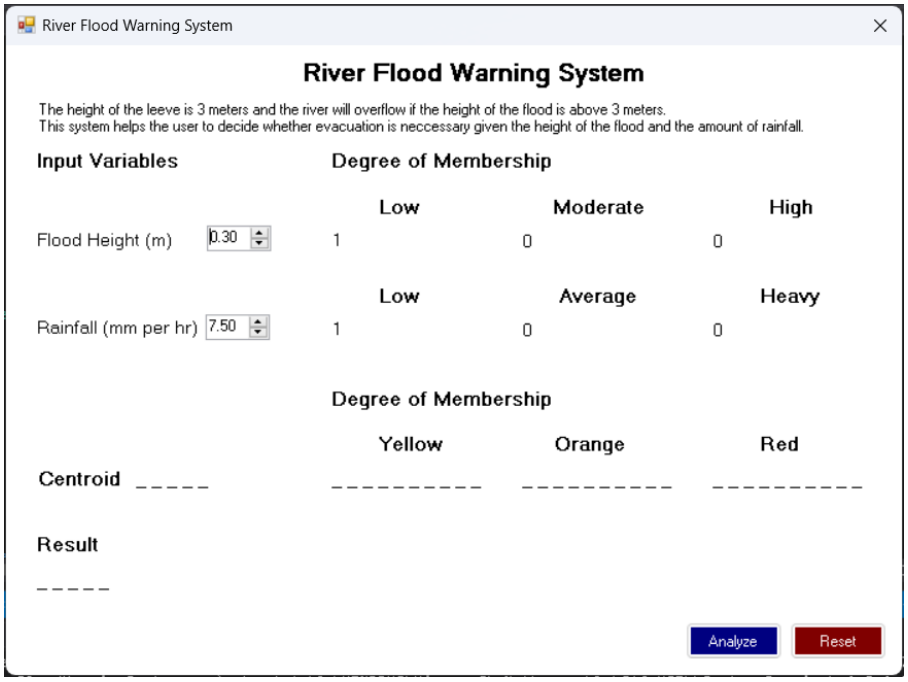
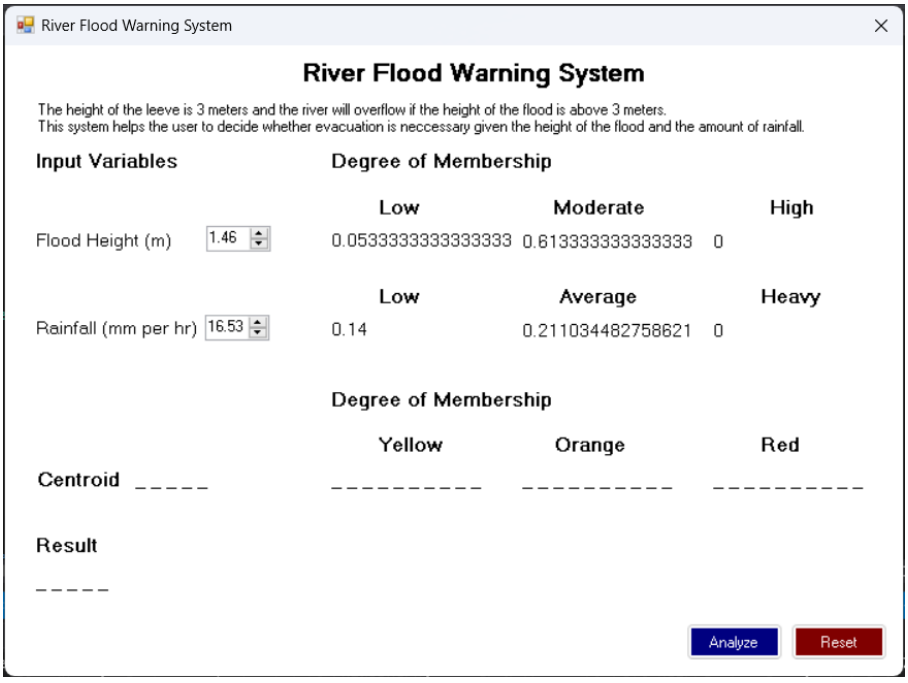
Application Screenshots

Once the system run/opened, the initial value of the flood height is set to .30 meters and the value of the rainfall is set to 7.50 millimeters per hour. Also, the Degree of Membership is calculated and initially set.



If the user change/update the values of the flood height and rainfall, the degree of membership is automatically calculated and displayed.



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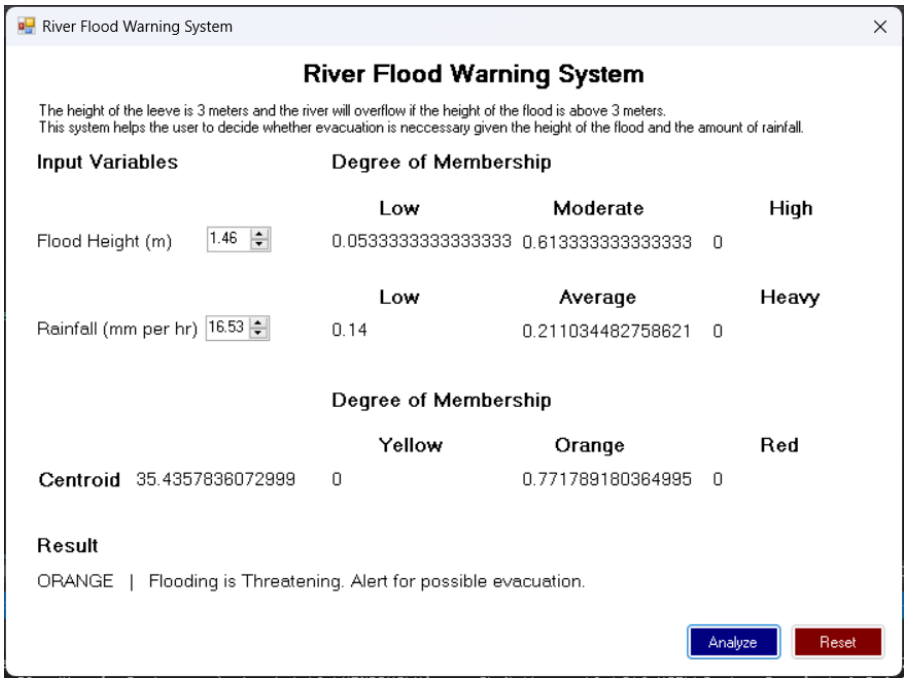
If the user clicked the Analyze button, the system will calculate and display the centroid and degree of membership and will also display the result in which can help the user decide what action to take.



If the user clicked the Reset button, all the data that is inputted and generated will return/reset to its initial values.