

We Solve It - Group Project Analysis

Jonah Simpson and Preet Chhina

a) A summary of the problem that your team proposed to solve

Jonah and Preet have chosen to address the problem of flooding. Specifically, we will be addressing personal preparation for flooding as well as personal solutions during flooding. Flooding occurs in many areas and is an interesting topic due to Columbus being directly against the river. This provides a practical use of our program and a couple of real-world opportunities to test the program.

b) How you decompose the problem

We would split the problem of flooding between preparation and an ongoing flood. Dealing with preparation would take a different approach than an ongoing flood. Preparation would focus more on previous floods and previous precipitation information while an ongoing flood would focus on the location of the user and the experience the user has of dealing with a flood. Both are important problems which the code will provide solutions for.

c) How you abstracted real-world data into variables and functions

We will be taking real-world precipitation and flooding data to compare our user inputs to determine how high of a risk users are, this will allow us to direct users in different directions on the preparation/ steps they need to take in case of flooding. Specifically using rain levels in inches, compared to what high level flooding rain levels look like to create a comparative function. We are also using real-world preparation tips as variables to give them as outputs to our users to help with flooding issues.

d) How do you find patterns that you used to create code structures

We will start with the question of which of the two problems the user is dealing with. We will use if statements to go through the code and get to the solution. We plan to use if statements to calculate the pattern and the steps from going from one point to the next. There will be a pattern of questions the user answers to try to find a solution for themselves.

e) The algorithm you designed for your program solution

The first step is to ask the user if they are looking to prepare for a flood or are currently in a flood. Depending on the answer the code will branch off into either flood prep or an ongoing flood. Within each of these branches, there will be another input for data from the user to decide how serious either the prep is, or the current flood is. This input data will be used in a series of if statements that will compare this data with real-world data and output suggestions based on the comparison. Within flood prep there will be an asking of input a series of past precipitation averages, this will be used to create the variable which is compared to our standards of high/low-risk flooding. Within current flooding, the user will be asked how long it has been raining, an approximation of how hard the rain is, and if they know if they are in a high-risk area for flooding.