**Whitworth Football Play Diagram Generator**

This project is an automated computer software program that allows Whitworth football to be more time efficient and productive. This piece of software creates diagrams of weekly plays that Whitworth football will use against its opponents. It will eliminate the need of Coaches to individually create each play from scratch each week and allow that time to be spent on something else giving Whitworth football a possible game winning advantage.

**How to use the Whitworth Football Play Diagram Generator**

The Whitworth Football Play Diagram Generator takes in an excel file of plays to generate a pdf file of categorized plays. When the play diagram generator is started, you will be prompted with a file explorer. With this explorer, you will need to select the weekly playsheet of the plays you want generated into a diagram. The playsheet should be generated after that. If it doesn’t generate a playsheet, check the formatting of the excel file. Examples of the format can be seen below.

**Formatting the Excel File of Plays**

The format of the excel file is important so the program knows where to get all of the information. Some important features for the program are the title of a new category and the plays themselves. The category of plays should be in the first column where you want a new category to start. The rest of the row will be disregarded by the program so you can put any other headers and titles in there. The lines below a new category will be formatted with nothing in the first column, route in the second column, nothing in the third column, personnel in the fourth column, nothing in the fifth column and the formation in the sixth column. The columns with the route, personnel, and formation are expected to be filled in for the program to get all of the play information from.

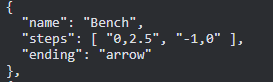
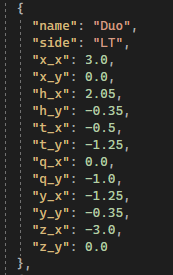
Example of Excel format:



**Formatting the Json File of Play Coordinates**

There are two Json files that store different tables of information in them. There is Routes.Json and Formations.Json. Each one had a different format. Below are two examples of the format of the files.

Examples of formations(left) and routes(right):



**Adding to the Json File**

If need be, you can add more keywords and their corresponding information to the json files directly. If you want to add to the formations table, refer to the example above on the left. Name is what the program will use to find and generate that play into a diagram, side will either be LT or RT depending on the side of the formation, and the rest are coordinates as to where to draw the players in the formation. Each player has an x and y coord to them. The coordinates are centered on the front line of players. If you want to add to the routes table, then refer to the example above on the right. To add a route to the Json file, it needs a name that the program can use like with the formations. The next item is a list of steps for where the arrow is going to be drawn. Each pair represents an x and y coordinate for where the arrow should move off of the player or the previous step. Steps go in order from left to right. Left being the starting point from the player and right being where the arrow will finish. Finally, you can choose an ending to the arrow. There are four options: “none”, “arrow”, “flathead”, and “circle”.