* Choice of package (dplyr): I have used dplyr again as it provides the very useful function of summarise(), in which I make use of it again in this code.
* Reading the data: I utilize the read.csv() function yet again in which I read the sales\_ug.csv into the sales\_data data frame and the product\_hierarchy.csv into the product\_hierarchy data frame. This will allow me to manipulate the data further later.
* Merging the data: To merge the data I made use of the merge(sales, product\_hierarchy, by = "product\_id") function , this allows me to combine the data frames into one, on the common product of product\_id as we are trying to find the most popular product type.
* Calculating total sales: I take the merged data from previous code as it has all the information needed. I then use the group\_by(heirarchy1\_id) function as it groups the data depending on Hierarchy 1 id as I am trying to find the most popular product type from hierarchy 1 as the question has asked. I use the summarise() function again as it allows to combine the multiple ids into one during calculations. The I use the function of Subtypes = n\_distinct(hierarchy2\_id) as the question asks for the number of subtypes for each hierarchy 1 id and n\_distinct counts the amount of unique hierarchy 2 ids from each hierarchy 1. Again, this function is used to count the amount of product ids as I want to find how many products are within each hierarchy as the question asks for this. I then calculate the revenue of each hierarchy through the function of revenue = sum(revenue) this will add the revenue of each hierarchy 1 id, allowing me to find the total revenue for each id. Then I have utilized the arrange(desc(sales\_quantity)) function to arrange the output in a descending order as the question has asked to rank them from the most popular to least and the descending order of sales quantity required. All of this is then placed into the product\_type\_summary data frame
* Printing the data: Yet again I make use of the print function and print the product\_type\_summary calculated from the previous code, This will allow me to analyze the results from the calculations