Jonathan Grabowski – Bioinformatics Lab Report 1

1. The first study about the amount of microplastics found in baby and adult human excrement is reproducible, but not robust. In this paper, the authors give information about how they collected samples, how they extracted samples, and how they analyzed the data. To analyze the data, the researchers used an equation to calculate the estimated amount of microplastics that have been ingested daily by babies and adults which is shown in the paper. This is what makes the study reproducible. However, I do not think this study is robust. I believe that the amount of microplastics in an adult’s excrement would be about the same compared to the microplastics in a baby’s excrement. I would have to look at other research about this comparison to determine if this study were robust. If the other studies had the same conclusion, then I would consider this study to be robust.
2. Study 2 about a data analytics tool is robust but not reproducible. This study is robust because the authors used publicly available databases for their tool. Anyone would have the ability to use the databases they used, so this is not a problem. However, the authors did not post their code on git and their tool can only be used if a certain GUI is used. This makes the study less reproducible because other people do not know what code the authors used for their tool, and it is locked behind a certain GUI.
3. The third study about the evolution of the Hu Line land use in China is robust and reproducible. This study is robust because if the study was completed again, the results would be similar because the land along the Hu Line in China probably has not change much in the past year. In the abstract, the authors state that they studied both sides of the Hu Line in China and briefly state the methods they used to study this area. With this information, other researchers could go and do a similar study that the authors completed, which is why this study is reproducible.
4. Study 4 about a tool that judges machine information is reproducible and robust. This study is reproducible because the makers of the tool have documentation on the tool and the code used to make the tool is available to the public. This study is also robust because the makers of the tool have provided 2 sets of input and outputs to show that their tool works. Since the tool code is widely available, anyone can check to see if these inputs and outputs work.
5. The fifth study is not reproducible or robust. The authors of this study tell the reader how they analyzed the relationship between economists and environmental scientists through scientific literature on a database, but they do not state what database they used. Also, the authors explain that they used a correlation test to determine the relationship between economists and environmental scientists, but it is unclear what other analyses they may have done. Therefore, this study is not reproducible. This study is not robust because other researchers could complete a similar study, however, if a different database is used, the other researchers may not get similar results compared to this study because all databases are different.