

Author: Triet Luong, Buu Hoang

Professor: Andrew Long

Class: MAT 385

### Pascal Triangle

Just like the header, my project is about Pascal Triangle. I will work with my friend Buu Hoang on this project. We will separate our project into 4 main parts: Definition, History, Applications, and a code about its applications. The first two parts will belong to my friend Buu, and the other two are what I have to work with. After that, we will combine it together and make one final result.

At the beginning of the project, we will discuss briefly about the Pascal Triangle. What is Pascal Triangle? The history of the Pascal Triangle. Then we will explain its applications in maths, in real life, etc. I will also show a code for some of its applications. At the end of our project, we will summarize everything we have already talked about Pascal Triangle and also discuss about its importance in our lives.

About the code, it will be using Pascal Triangle to calculate:

- The total amount of subsets and also the amount of subsets that have 1, 2, ..., n elements. If user provide all elements of the set, it will also list all of the subsets base on the number of elements in each subset.
- Pascal Triangle can be used to expand  $(x + y)^n$
- It can also be used to calculate the way how heads and tails can combine when we tossed it n times and it will also listed each of the situation.
- Pascal Triangle can calculate  $C_i^n$  too.

In conclusion, my code will execute 1 of these applications above base on what the user choose to do.