

***Team members: Yasar Azimi & Nawid Mohmand***

***Project’s name: Calculator***

***Course: ITC 315***

***Professor: Mr. Ali Shinwari***

***2022/10/5***

**User stories for the project:**

1. Students

As a student, I want to be able to add numbers so that I could do my homework.

As a student, I want to be able to subtract numbers so that I could do my homework.

As a student, I want to be able to multiply numbers so that I could do my homework.

As a student, I want to be able to divide numbers so that I could do my homework.

As a student, I want to be able to take square root of numbers so that I could do my homework.

1. Adults (Teacher and other professions)

As a teacher, I want to operate with numbers so that I could get the answers to the questions more easily.

As an accountant, I want to divide or multiply two numbers, so that I would be able to see what the outcome is.

As an accountant, I want to take square root of a number easily.

***Acceptance criteria’s:***

When given two numbers 3 and 5, when I subtract them, the outcome should become 2.

When given two numbers 1 and 8, when I add them, the outcome should become 9.

When given two numbers 9 and 3, when I divide them, the outcome should become 3.

When given two numbers 9 and 3, when I multiply them, the outcome should become 27.

When given two numbers 9 and 2, when I use square root, the outcome should become 81.

When given two numbers 9 and 2, when I take root of them, the outcome should become 3.

**Pair programming experience remarks:**

***Yasar Azimi***

Pair programming for me was not easy, since I’m not used to programming along-side someone. But thanks to Mr. Nawid Mohmand I was able to overcome that since we worked on it together and it was done as a result of hard work from both of us. Due to us being in different places and our work load we created something that could be accepted for the class as well as have all the components we need. The most important thing in this was that I used both the agile programming and plan driven programming in most of the steps of the development. Plan driven because we started on the plan on what we need and how to take care of it while agile because we needed to be able to bring changes to it when there is a problem. We lacked the customer requirements, so that part was not included and only the programmers talked about what was needed for a simple calculator. But for the procedure, agile programming method was implemented and demonstrated well during writing and preparing the codes for our program. I can only say that, pair programming was an experience unlike any other class, where I was challenged to work on my short comings and allow others to work on the code I have written and see my mistakes by receiving help from my partner. I faced another issue when using the Scene builder, where I had to code everything manually because of my laptop, but we were able to overcome these problems and create a calculator.

***Nawid Mohmand:***

The way the pair programming was done by me and my teammate was full of challenges since we lived in two different locations so synchronizing the time so that we can work and have meetings was quite a challenge for us. And because I was forced to leave my home during this time, the challenge was even greater for us but as students we overcame those challenges. Even when we couldn’t have a lot of meeting we made sure that what we needed to say was said in the time we had. The user requirements that we had set up for our projects was met at the end of our project with every functions mentioned in user stories workable. Even when we couldn’t have a lot of meeting we made sure that what we needed to say was said in the time we had. We could have used Git and GitHub for the pair programming if we had more time to obtain a much better understanding of pair programming. Notably, pair programming was an experience unlike any other, and this project was the first in a course where I was allowed to practice my programming skills almost to its fullest potential. We also had the opportunity to practice some of the techniques needed to program the calculator effectively which we can apply again for coding other programs. The user requirements that we had set up for our project was met at the end of our project with every functions mentioned in user stories workable. The development of this calculator may have seemed straightforward, but it was a difficult process that forced me to devote daily effort and time into programming in order to produce a better product.