Software Engineering

Week 2 – Chapter 2

Evidence

*Guess the password Flowchart:*

*A diagram of a computer process

Description automatically generated*

*Here I make the computer store a predefined password that the user must guess. If they input a wrong password, the count increases with 1. Once the count reaches 3, the program ends with an output “Your account has been blocked”. If the user guesses the password within 3 tries, the program ends with an output “Password correct”.*

*Check the password code:*

*A computer screen shot of a program

Description automatically generated*

*This is the code after I got feedback to add a print line with an instruction on what to do as well, not just the input. I learned this is a way to have a better interface for the user, so I added "Try again" after the user types in an incorrect password.*

*Find the classroom flowchart:*

*A diagram of a flowchart

Description automatically generated*

*Here I make the computer store a dictionary “thisdict” of subjects and room numbers. After this the user types in their name and then a subject. If that subject is not in the dictionary, the program prints “I don’t know which room that class is in”. If that subject is in the dictionary the program prints a message “Hi, {studentName}, go to room {roomNumber}, for {subjectName}”.*

*Find the classroom code:*

*A computer screen with colorful text

Description automatically generated*

*I got feedback that the name of my dictionary is not good, so I renamed it to roomsDict, instead of thisdict. That’s how I learned to achieve better readability in my program and “clear” code.*

*Find the tallest player Flowchart:*

*A diagram of a flowchart

Description automatically generated*

*Here I make the computer ask for the name of 3 players, which the user inputs. After this they input their heights and the values are stored in a dictionary as pairs. The computer then stored a maxValue = 0 and a player = “ “. I make a loop that iterates through the dictionary values and put a condition that checks if maxValue is lower than a height. If it is, then the maxValue is the respective height in that dictionary. If it is not, then the loop continues. That is how I find the maxValue in a dictionary without using a function.*

*After this I make a loop which iterates through the dictionary pairs again. If the maxValue is found in the dictionary (maxValue == value) it access its respective key and the program print the player’s name and his height (maxValue).*

*Find the tallest player code:*

*A screen shot of a computer program

Description automatically generated*

*I got feedback from the teacher to try and make the program so that I can add more players. This is the code after:*

*A screen shot of a computer program

Description automatically generated*

*I learned how to make my program more flexible.*

*Guess the number game Flowchart (without bonus):*

*A diagram of a number

Description automatically generated*

*This is the flowchart without the bonus challenges. The computer generates a random number, and the user tries to guess it. They input a number, and the count starts from 1. If the number is lower than the random number, the program prints out “Too low” and the count incremented by one and the user is asked to enter a number again. If the number is higher than the random number, the program prints out “Too high” and the count is increased by one and the user is asked to enter a number again. When the N > rN condition is false, which means that N == rN, the program ends with an output “You guessed the number!” with the count, showing how many tries it took the user to guess the random number.*

*Here is the flowchart with the bonus challenges:*

*A diagram of a flowchart

Description automatically generated*

*I added a bonusScore = 0. Then I added a condition checking if the number is higher than 100 or lower than 1. If it is, the program outputs “Invalid input” and asks the user to enter a number again. If it is not, a condition checks if the number is equal to the random number. If it is, a condition checks if the bestScore = 0. If it is, the bestScore = count and the program prints a victory message with the count and the bestScore. Then, the program asks the user if they want to play again (yes/no). If the user types in “yes”, the program loops to the beginning of the game, and if not, the program ends.*

*If the condition (number = randomNumber) is false, it leads to the “Too low”, “Too high” condition and asks the player to type in another number.*

*Guess the number Code (final result):*

*A screen shot of a computer program

Description automatically generated*

*Inform the boss Flowchart:*

*A diagram of a flowchart

Description automatically generated*

*Here the computer asks the user to choose an action S-Sell, I-inform, E-Exit. If the user inputs S, they are asked to enter the name of a flower and price, after which the info is saved in a dictionary and the user is asked to enter a letter again. If the user inputs I, we find the length of the dictionary, we iterate through the dictionary to find the highest price, lowest price and the average value, and then the program prints the info, after which the user is asked to input a letter again. If the user input E, the program ends.*

*Inform the boss Code:*

*A screen shot of a computer program

Description automatically generated*

*At first, I wanted to make it so the user input the name of the flower and its price on one line like “Enter the name and the price of a flower:”*

*{flowerName} {price}*

*And then put them together in the dictionary, but I decided to make it separately.*

*Overall, I learned that I have to use comments in order to make the code more understandable not only for the person reading it, but for me as well. In these assignments I have shown that I learned how to use functions well.*

*Here are the links to the assignments:*

Check the password

Flowchart: [Week 2\Chapter 2\Programming\Check the password\Check the password\_240909\_125841.pdf](Week%202/Chapter%202/Programming/Check%20the%20password/Check%20the%20password_240909_125841.pdf)

Code: [Week 2\Chapter 2\Programming\Check the password\Check the password.py](Week%202/Chapter%202/Programming/Check%20the%20password/Check%20the%20password.py)

Find the classroom

Flowchart: [Week 2\Chapter 2\Programming\Find the classroom\Find the classroom\_240909\_135315.pdf](Week%202/Chapter%202/Programming/Find%20the%20classroom/Find%20the%20classroom_240909_135315.pdf)

Code: [Week 2\Chapter 2\Programming\Find the classroom\Find the classroom.py](Week%202/Chapter%202/Programming/Find%20the%20classroom/Find%20the%20classroom.py)

Find the tallest player:

Flowchart: [Week 2\Chapter 2\Programming\Find the tallest player\Find the tallest player\_240911\_134114.pdf](Week%202/Chapter%202/Programming/Find%20the%20tallest%20player/Find%20the%20tallest%20player_240911_134114.pdf)

Code: [Week 2\Chapter 2\Programming\Find the tallest player\Find the tallest player.py](Week%202/Chapter%202/Programming/Find%20the%20tallest%20player/Find%20the%20tallest%20player.py)

Guess the number game

Flowcharts: [Week 2\Chapter 2\Programming\Guess the number game\Guess the number game (original)\_240911\_232148.pdf](Week%202/Chapter%202/Programming/Guess%20the%20number%20game/Guess%20the%20number%20game%20(original)_240911_232148.pdf)

[Week 2\Chapter 2\Programming\Guess the number game\Guess the number game (with bonus)\_240912\_104235.pdf](Week%202/Chapter%202/Programming/Guess%20the%20number%20game/Guess%20the%20number%20game%20(with%20bonus)_240912_104235.pdf)

Code: [Week 2\Chapter 2\Programming\Guess the number game\Guess the number game.py](Week%202/Chapter%202/Programming/Guess%20the%20number%20game/Guess%20the%20number%20game.py)

Inform the boss

Flowchart: [Week 2\Chapter 2\Programming\Inform the boss\Inform the boss\_240916\_105936.pdf](Week%202/Chapter%202/Programming/Inform%20the%20boss/Inform%20the%20boss_240916_105936.pdf)

Code: [Week 2\Chapter 2\Programming\Inform the boss\Inform the boss.py](Week%202/Chapter%202/Programming/Inform%20the%20boss/Inform%20the%20boss.py)