Program !:

This program asks to create an array list which stores certain subjects taught by the Computer Science department that comes as input from the user and perform certain tasks to this input.

The code can be broken down into the following pseudocode:

1. Start
2. Initialise a scanner to be used for user input
3. Create a list that will be used to store user input
4. Prompt the user to enter 4 subjects taught at the Computer Science department
5. For each subject, prompt the subject name, and add it to the list
6. If user inputs the subject ‘Networking’, remove it from the list
7. Sort the list in reverse alphabetical order
8. Print this sorted list
9. End

Code:

A computer screen shot of a black screen

Description automatically generated

Answer:

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Description automatically generated

Program 2:

This program asks to use a HashMap to store the jersey numbers and names of players of a soccer team (I chose Real Madrid players), and outputs the players names who’s jersey numbers that were given as input by the user.

The code can be broken down into the following pseudocode:

1. Start
2. Create a HashMap that will be used to store the jersey numbers and names of Real Madrid players
3. Add the players and their corresponding jersey numbers into the HashMap
4. Prompt the user to enter a jersey number
5. Read the jersey number as input
6. Check if the jersey number is found in the HashMap
7. If the jersey number is found, then print the different players name’s that correspond to the jersey number
8. If not found, display a message saying there this no player with that jersey number found.
9. End

Code:

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Description automatically generated

Answer(s):





Program 4:

This program asks the user to input two strings, and perform certain operations on them and print these out as output.

The code can be broken down into the following pseudocode:

1. Start
2. Initialise a scanner object that will read user input
3. Prompt the user to input two strings
4. Concatenate the two strings and print it as output
5. Remove all spaces from this concatenated string
6. Calculate the number of characters present in these user inputted strings, and print this total as output
7. Swap the order of the strings and print this new string as output
   1. First create a list of the words In the concatenated string
   2. Then for each word, starting at the end of the list, add the word into a string, followed by a space
8. Initialise an array of 256 zeroes to track the frequency of each characters inputted by the user
   1. For each character, increment its frequency In the array
9. Print as output the characters that appear exactly twice
   1. Iterate over the array
   2. And if it appears twice, print the character
10. End

Code:

A screenshot of a computer program

Description automatically generated

Answer:

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