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Introduction to Matlab

13 November 2024

Introduction to Matlab Midterm

Repository Link:

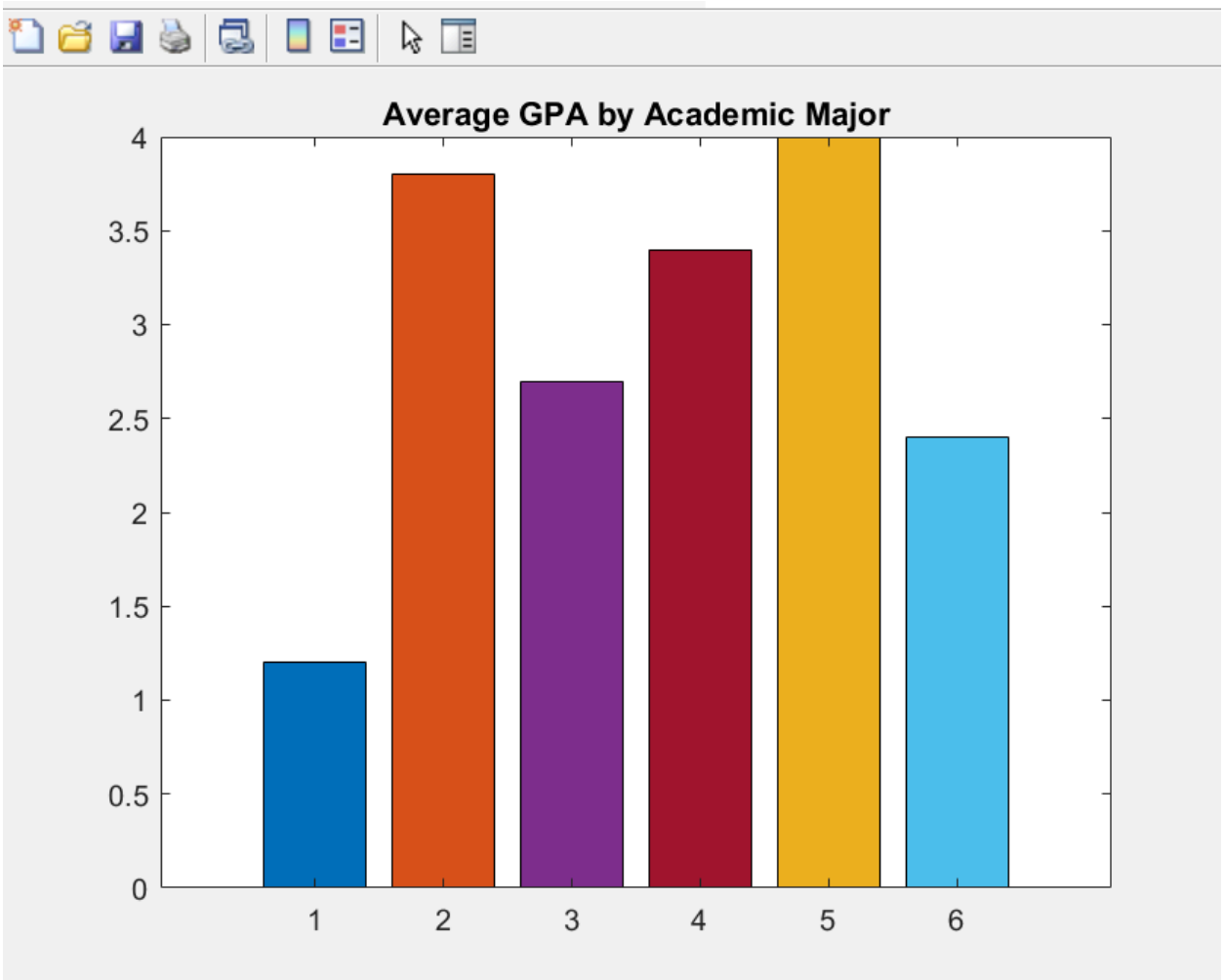
Implementation Description:

To create the student database I first created the Student.m file. After this I created the class classdef. Within this class I created the properties that are unique to each individual student. These properties include the students name, id, age, major, and gpa. In the methods section of the code I used the currentobj. to set one of the properties equal to itself. For example when currentobj.Student_id = Student-id is used it allows for a value to be specific to an individual student. For example in this scenario the sports medicine major is specific to student 2. The program then displays the students general information all together so it displays the name, id, major, age, and gpa together. All of the first student's information is displayed together followed by all of the second student's information. After this I added a function that is used to find a student's information using their student id. When an id number is typed into main.m the student with that ids information will be shown. Main.m is used because it does not require any inputs in the file. The last thing implemented into the methods section of the student.m file is a way to update the students gpa. In the StudentData.m file I created the StudentData class. After this I created the SD = SD.initSD(6) which sets the database to 6. The 6 represents the number of students that can be included in the database. I created the students and all of their information. I finally saved all of the information into the database.

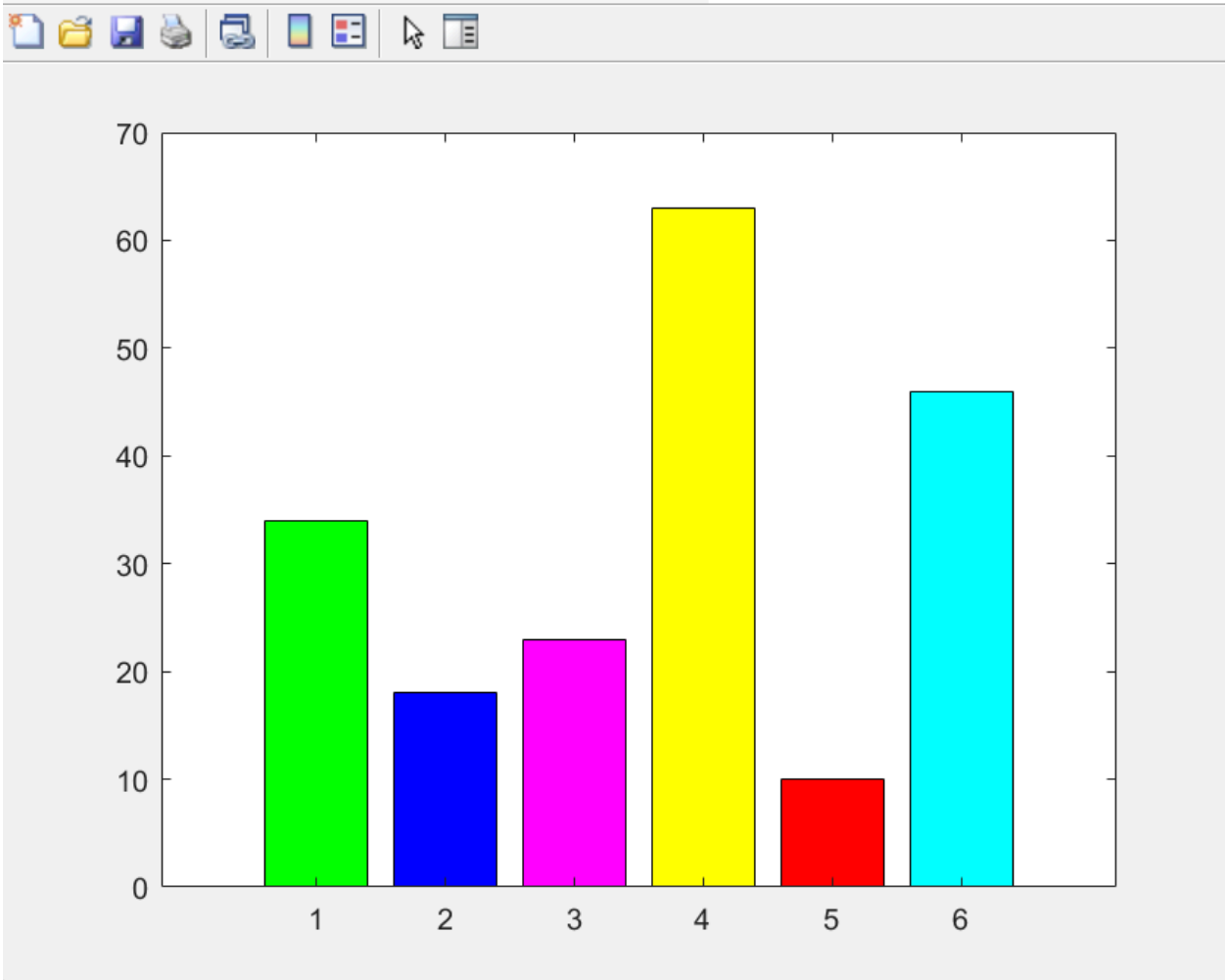
Instructions to run the code:

The first step to running the database is to create student information and type it into the database. This allows for students to be created. This is the main way the code is developed and this allows the code to be run. If you would like to search for a different student using their student id simply change the value in SD.findStudent("4");.

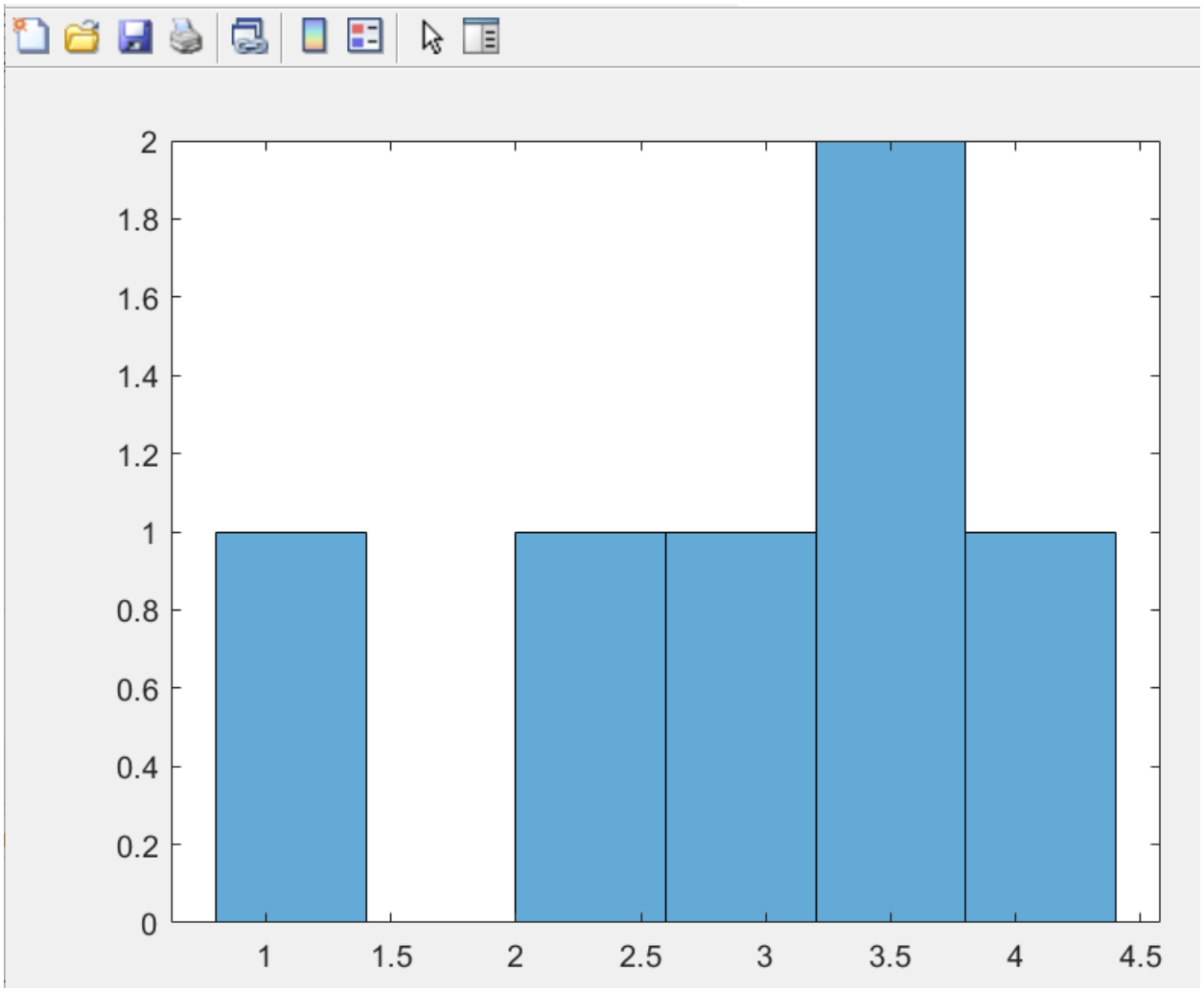
Screenshots of Visualizations:



Students Major and gpa



Students Id number and age.



Histogram of Students GPA.

SD.student(1, 1)

Property	Value
Student_id	"1"
Student_n...	"Derrick"
Student_age	"34"
Student_g...	1.2000
Student_M...	"Art History"

Implemented Features include:

2 Bar Graphs

A Histogram

Colors in Graphs

Student Search by Id

Adjusting Student Gpa in Database

Add New Students

Save Database to .mat file

constructor method

Displaying of information

Custom colors and all other required implementations.