

ASSIGNMENT 4

50 points

Write a program that takes survey of at least 12 persons from different age group and identify the favorite movie genres from each age group.

Specification

Age Group

Consider only 4 groups as shown below

Group	Group name	Age
Elementary School Students.	E	5 - 9
Middle School Students	M	10-14
High School Students.	H	15- 18
College Students.	C	19-22

Movie Genres

Consider only 4 categories

Action. :An action story is similar to adventure, and the protagonist usually takes a risky turn, which leads to desperate situations (including explosions, fight scenes, daring escapes, etc.).

Science Fiction: stories in this genre use scientific understanding to explain the universe that it takes place in.

Comedy: Comedy is a story that tells about a series of funny, or comical events, intended to make the audience laugh.

History: Story about a real person or event

For the completion of this program, Write a class named “Students” that has the following data attributes.

- Name : a string that contains the full name of student
- Age : a integer that holds the age information of student
- Movie genre: a List that contains the value either “Like” or “Dislike” for each category.

Also write appropriate getter and setter functions.

The Survey has to let all students enter the information either through standard input or from a file.

Write function named “find_fav_genre” that takes age group name as input and finds the favorite movie genre in that particular age group.

Write function named “calc_percentage_genre” that takes Age group name and specific movie genre as input and returns a list of percentages of students who like the movie genre in that particular age group.

Extra Credit:

For each age group, Display the Percentages of students liking a particular movie genre on graph(Bar Chart)

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For example:

Name of Student	Age	Movie Genre[Action,SciFi, Comedy,History]
William Hart	6	[Like,Like,Dislike,Like]
Lauren Vance	6	[Like,Like,Dislike,Dislike]
Mary Hughes	11	[Dislike,Like,Dislike,Like]
Steven Dyer	12	[Like,Dislike,Dislike,Like]
Warren King	20	[Like,Dislike,Dislike,Like]
Oliver Robertson	21	[Like,Like,Dislike,Dislike]
Una Hughes	9	[Dislike,Like,Dislike,Like]
Jack Peake	15	[Dislike,Dislike,Like,Like]
Joanne King	16	[Like,Dislike,Dislike,Like]
Alan Bell	21	[Like,Dislike,Dislike,Like]
Tim Buckland	14	[Like,Dislike,Dislike,Like]
Edward Poole	8	[Like,Like,Dislike,Dislike]
Hannah. Watson	15	[Like,Dislike,Dislike,Like]
Olivia Short	18	[Like,Dislike,Like,Dislike]
Penelope Morrison	22	[Like,Dislike,Like,Dislike]

Age group: E

Favorite Movie Genre : SciFi

Age group: M

Favorite Movie Genre : History

Age group: H

Favorite Movie Genre : Action

Age group: C

Favorite Movie Genre : Action

Age group : E

%of students who like SciFi = 100

% of students who like Action movies=75

%of students who like Comedy movies=0

% of students who like History=50

Repeat for the other age groups as well.