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IT 206-001 Assignment 5

10/30/16

1)

DayCare – implementation class – This class prompts the user for options which include adding more children, increasing the limit of children allowed in the program, or finished adding children. This program won’t create an object unless the info for the child is eligible to be in the program

Children – ddc parent – this class defines the children object without tutored

TutoredChildren – ddc child – this class inherit from the children class. This class includes number of subjects and grade level.

2)

Children DDC – parent class

|  |  |
| --- | --- |
| Constants |  |
| (+) MAX\_NUM\_FOOD\_ALLERGIES: int | Max number of food allergies |
| (+) COST\_PER\_DAY: double | Cost per day at the day care |
| (+) EXTENDED\_COST: double | Cost per day for extended care |
| (+) MIN\_AGE: int | Min age allowed for daycare |
| (+) MAX\_AGE: int | Max age allowed for daycare |
| (+) MIN\_DAY: int | Min amount of days allowed |
| (+) MAX\_DAY: int | Max amount of days allowed |
|  |  |
| Variables |  |
| (-) maxNumChildren: int | Max number of children allowed in the daycare |
| (-) childrenCount: int | The number of children entered in the daycare |
| (-) name: String | Name of the children |
| (-) age: int | Age of the children |
| (-) streetAddress: String | The street address of the children |
| (-) phoneNumber: String | The phone number of the children |
| (-) email: String | The email of the children’s parent? |
| (-) foodAllergies: String array | List of allergies |
| (-) foodAllergiesCount: int | The amount of food allergies entered |
| (-) daysPerWeek: int | The days per week the child will be at daycare |
| (-) extendedHours: Boolean | If the children needed extended hour care |
| (-) cost: double | The cost of the children’s daycare |
| (-) tutored: Boolean | If the child is taking tutoring |
|  |  |
| Constructor |  |
| Children(name, age, streetAddress, phoneNumber, email, foodAllergies, foodAllergiesCount, daysPerWeek, extendedHours, cost, tutored) | Constructor for a child without tutoring |
|  |  |
| Accessors |  |
| (+) getChildrenCount(): int | Returns children count |
| (+) getMaxNumChildren(): int | Returns max number of children |
| (+) getName(): String | Return name |
| (+) getAge(): int | Return age |
| (+) getStreetAddress(): String | Return street address |
| (+) getPhoneNumber(): String | Return phone number |
| (+) getEmail(): String | Return email |
| (+) getFoodAllergies(): String array | Return food allergies |
| (+) getFoodAllergiesCount(): int | Return food allergies count |
| (+) getDaysPerWeek(): int | Return days per week |
| (+) getExtendedHours(): Boolean | Return extended hours |
| (+) getCost(): double | Return cost |
| (+) getTutored(): Boolean | Return tutored |
|  |  |
| Mutator |  |
| (+) setName(name): Boolean | Sets name |
| (+) setAge(age): Boolean | Sets age |
| (+) setStreetAddress(streetAddress): Boolean | Sets street address |
| (+) setPhoneNumber(phoneNumber): Boolean | Sets phone number |
| (+) setEmail(email): Boolean | Sets email |
| (+) setDaysPerWeek(daysPerWeek): Boolean | Sets days per week |
| (+) setExtendedHours(extendedHours): void | Sets extended hours |
| (+) setTutored(tutored): void | Sets tutored |
| (+) setMaxNumChildren(num): boolean | Sets max number of children |
|  |  |
| Validator |  |
| (+) validateNonEmptyString(String): Boolean | Validate string isn’t empty |
| (+) validateInt(num): Boolean | Validate positive int |
| (+) validateDaysPerWeek(num): Boolean | Validate days per week |
| (+) validatePhoneNumber(String): Boolean | Validate phone number |
| (+) validateEmail(String): Boolean | Validate email |
|  |  |
| Special purpose method |  |
| (+) validateEligibility(age, foodAllergiesCount): Boolean | Validate if child is eligible for the program |
| (+) validateIncreaseMaxNumChildren(num): Boolean | Validate if increasing max number of children is valid |
| (+) eligibleAge(age): Boolean | Validate if child is of eligible age |
| (+) eligibleAllergyCount(num):boolean | Validate if child’s allergy count is eligible |
| (+) inEligible(age, foodAllergiesCount):String | Generates error String is child is ineligible |
| (+) toString():String | Creates a string of the child’s information |
| (+) toString(foodAllergies, count):String | Creates a list of the child’s food allergies |
| (+) costString():String | Creates a string of the cost for the child |

TutoredChildren DDC – child class

|  |  |
| --- | --- |
| Constants |  |
| (+) GRADE\_LEVEL\_LIST: String array | List of eligible grade levels |
| (+) COST\_PER\_SUBJECT: double | Cost per subject |
|  |  |
| Variables |  |
| (-) numTutoredStudents: int | Number of tutored students |
| (-) gradeLevel: String | Grade level |
| (-) numOfSubjects: int | Number of subjects |
|  |  |
| Constructor |  |
| (+) TutoredChildren(name, age, streetAddress, phoneNumber, email, foodAllergies, foodAllergiesCount, daysPerWeek, extendedHours, cost, tutored, gradeLevel, numOfSubjects) | Constructor for children with child care |
|  |  |
| Accessors |  |
| (+) getNumTutoredStudents(): int | Return number of tutored students |
| (+) getGradeLevel(): String | Return grade level |
| (+) getNumOfSubjects(): int | Return number of subjects |
|  |  |
| Mutator |  |
| (+) setGradeLevel(gradeLevel): boolean | Sets the grade level |
| (+) setNumOfSubjects(numOfSubjects): Boolean | Sets the number of subjects |
|  |  |
| Validator |  |
| (+) validateGradeLevel(gradeLevel):Boolean | Validates grade level |
|  |  |
| Special purpose method |  |
| (+) toString(): String | Generates a string of grade level and number of subjects |

Method: main  
Purpose: Continually prompt the user for menu option until the user indicates to finish and executes the option selected  
Input: none  
Returns: none

Method: getMenuOption  
Purpose: prompts the user for menu option  
Input: void  
Returns: int – menu option

Method: addChildren  
Purpose: creates a children object based on the children’s information  
Input: Array of objects – child, int - childrenCount  
Returns: void

Method: getString  
Purpose: method to ask user to enter a string  
Input: String – message, String – invalidMessage  
Returns: String - userInput

Method: getInt  
Purpose: method to get integer input  
Input: String – message, String – invalidMessage  
Returns: int - userInput

Method: getPhoneNumber  
Purpose: method to get phone number  
Input: String – message, String – invalidMessage  
Returns: String - phoneNumber

Method: getEmail  
Purpose: method to get email  
Input: String – message, String – invalidMessage  
Returns: String - email

Method: getFoodAllergies  
Purpose: method to get food allergies  
Input: String – message, String - invalidMessage  
Returns: String array - foodAllergies

Method: getFoodAllergiesCount  
Purpose: method to count the number of allergies entered  
Input: String array - foodAllergies  
Returns: int - foodAllergiesCount

Method: getDaysPerWeek  
Purpose: method to get the number of days the children is staying at the day care  
Input: String - message, String - invalidMessage  
Returns:

Method: getGradeLevel  
Purpose: method to get the child’s grade level  
Input: String – message, String - invalidMessage  
Returns: String gradeLevel

Method: getCost  
Purpose: calculates the cost for the child  
Input: int – daysPerWeek, Boolean - extendedHours  
Returns: double - cost

Method: getTutoredCost  
Purpose: calculates the additional cost if the child is being tutored  
Input: int – numOfSubject  
Returns: double - tutoringCost

Method: getBooleanConfirm  
Purpose: yes no input dialog box prompt user to click  
Input: String - inputMessage  
Returns: Boolean - userInput

Method: errorMessage  
Purpose: generates an error message output  
Input: String – error message  
Returns: void

Method: getSummary  
Purpose: creates a summary of all children entered  
Input: array of objects – child, int - childrenCount  
Returns: void

Method: getChildrenSummary  
Purpose: creates a summary of the overall entry, average cost, and number of students tutored or not tutored  
Input: array of objects - child, int - childrenCount  
Returns: String - summary

Method: increaseMaxChildren  
Purpose: increases the max number children allowed in the program and creates a new array of objects with the new array size  
Input: array of objects – child, int - count  
Returns: Array of Objects - child