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IT 206-001 Assignment 7

11/10/2016

1)

EmployeeVacation – implementation class – This class contains the user interface for adding removing, and printing vacation information. This wouldn’t allow repeat names or repeat locations

Vacation – Abstract class – abstract ddc for vacations with information used in all vacation types

BeachHouseVacation – ddc for beach vacation – this inherit from Vacation class

SkiResortVacation – ddc for ski vacation – this inherit from Vacation class

SkiResortPeople – ddc for the people going on a ski vacation

2)DDC

Vacation –Abstract – DDC

|  |  |
| --- | --- |
| Constants |  |
| (+) MAX\_NUM\_VACATION: int | Max number of vacation |
| (+) MAX\_FAMILY\_MEMBERS: int | Max number of family members |
| (+) MIN\_FAMILY\_MEMBERS: int | Min number of family members |
|  |  |
| Variables |  |
| (-) vacationCount: int | Vacation count |
| (-) name: String | Employee name |
| (-) location: String | Vacation location |
| (-) zipcode: String | Vacation zipcode |
| (-) numFamilyMembers: int | Number of family members |
|  |  |
| Constructor |  |
| (+) Vacation(String name, String location, String zipcode, int numFamilyMembers) | Constructor for vacation |
|  |  |
| Accessor |  |
| (+) getVacationCount(): int | Returns vacation count |
| (+) getName(): String | Returns name |
| (+) getLocation(): String | Returns vacation location |
| (+) getZipCode(): String | Returns zipcode |
| (+) getNumFamilyMembers(): int | Returns number of family members |
|  |  |
| Mutator |  |
| (+) setName(name): Boolean | Set name |
| (+) setLocation(location): Boolean | Set location |
| (+) setZipcode(zipcode): Boolean | Set zipcode |
| (+) setNumFamilyMembers(numFamilyMembers): Boolean | Set number of family members |
|  |  |
| Validator |  |
| (+) validateString(input): Boolean | Validates strings |
| (+) validateZipcode(input): Boolean | Validates zipcode |
| (+) validateInt(input): Boolean | Validate integers |
|  |  |
| Special Purpose Method |  |
| (+) calculateCost(): abstract double | Calculates cost |
| (+) decreaseCount(): void | Decrease Vacation count |
| (+) toString(): String | Returns a string of the summary |

BeachHouseVacation – DDC

|  |  |
| --- | --- |
| Constant |  |
| (+) lowBaseCost: double | Lowest base cost |
| (+) midBaseCost: double | Mid base cost |
| (+) highBaseCost: double | High base cost |
| (+) hurricanInsurance15: double | Hurricane insurance cost for the first 5 |
| (+) hurricanInsurance610: double | Hurricane insurance cost for the last 5 |
|  |  |
| Variable |  |
| (-) insurance: Boolean | Insurance status |
|  |  |
| Constructor |  |
| (+) BeachHouseVacation(String name, String location, String zipcode, int numFamilyMembers, boolean hurricanInsurance) | Constructor for beach house vacation |
|  |  |
| Accessor |  |
| (+) getInsurance(): Boolean | Returns insurance |
|  |  |
| Mutator |  |
| (+) setInsurance(): void | Sets insurance |
|  |  |
| Special Purpose Method |  |
| (+) calculateCost(): double | Calculates cost |
| (+) toString(): String | Returns a summary of vacation |

SkiResortVacation – DDC

|  |  |
| --- | --- |
| Constant |  |
| (+) BASE\_PRICE: double | Ski resort base price per star |
| (+) LESSON\_PRICE: double | Ski lesson price |
| (+) MIN\_STARS: int | Min number of stars |
| (+) MAX\_STARS: int | Max number of stars |
|  |  |
| Variables |  |
| (-) numStars: int | Number of stars |
| (-) people: SkiResortPeople[] | List of people going on the vacation with the employee |
|  |  |
| Constructor |  |
| (+) SkiResortVacation(String name, String location, String zipcode, int numFamilyMembers, int numStars, SkiResortPeople[] people) | Ski resort constructor |
|  |  |
| Accessor |  |
| (+) getNumStars(): int | Returns number of stars |
| (+) getSkiResortPeople(): SkiResortPeople[] | Returns people going on the vacation |
|  |  |
| Mutator |  |
| (+) setNumStars(numStars): boolean | Sets number of stars |
|  |  |
| Special Purpose Method |  |
| (+) calculateCost(): double | Calculates cost |
| (+) toString(): String | Returns a summary of vacation |

SkiResortPeople – DDC

|  |  |
| --- | --- |
| Variable |  |
| (-) name: String | name |
| (-) lessons: boolean | Lessons status |
|  |  |
| Constructor |  |
| (+) SkiResortPeople(String name, boolean lessons) | Constructor for people going on ski vacation |
|  |  |
| Accessors |  |
| (+) getName(): String | Returns name |
| (+) getLessons(): boolean | Returns lessons |
|  |  |
| Mutator |  |
| (+) setName(name): boolean | Sets name |
| (+) setLessons(lessons): void | Sets lesson |
|  |  |
| Validator |  |
| (+) validateString(name): boolean | Validate string |
|  |  |
| Special Purpose Method |  |
| (+) toString(): String | Returns summary of peoples going on ski vacation |

3)

Method: main  
Purpose: The user interface with a menu option for the user.  
Input: int-menuOption  
Returns: void  
  
Method: addVacation  
Purpose: Add a vacation to the program  
Input: Vacation[] - vaca, int - count  
Returns: void  
  
Method: printBeachVacationBills  
Purpose: Prints Summary of beach vacation   
Input: Vacation[] - vaca, int - count  
Returns: void  
  
Method: printSkiResortBills  
Purpose: Prints Summary of Ski vacation  
Input: Vacation[] - vaca, int - count  
Returns: void  
  
Method: getZipcode  
Purpose: Prompt user for zip code  
Input: String - message, String - errorMessage  
Returns: String - zipcode  
  
Method: getName  
Purpose: Prompt user for name  
Input: String - message, String - errorMessage, Vacation[] - vaca, int - count  
Returns: String - name  
  
Method: getLocation  
Purpose: Prompt user for location  
Input: String - message, String - errorMessage, Vacation[] - vaca, int - count  
Returns: String - location  
  
Method: getPeople  
Purpose: Prompt user for list of people for ski vacation  
Input: SkiResortPeople[] - people, int - count  
Returns: void  
  
Method: getFamilyMemberName  
Purpose: Prompt user for people’s name for the ski vacation  
Input: String - message, String - errorMessage, SkiResortPeople[] - people, int - count, int - currentCount  
Returns: String - name  
  
Method: getString  
Purpose: Prompt user for a string  
Input: String - message, String - errorMessage  
Returns: String - input  
  
Method: getInt  
Purpose: Prompt user for an integer within a range  
Input: String - message, String - errorMessage, int - min, int - max  
Returns: int - input  
  
Method: getInt  
Purpose: Prompt user for an integer  
Input: String - message  
Returns: int - input  
  
Method: checkRepeatName  
Purpose: Check if name is already used  
Input: String - name, Vacation[] - vaca, int - count  
Returns: boolean  
  
Method: checkRepeatLocation  
Purpose: Check if location is already used  
Input: String - name, Vacation[] - vaca, int - count  
Returns: boolean  
  
Method: checkRepeatFamilyMemberName  
Purpose: Check if family member name has already been entered  
Input: String - name, SkiResortPeople[] - people, int - count  
Returns: boolean  
  
Method: removeVacation  
Purpose: To remove selected vacation from the list of vacations and resorts it  
Input: Vacation[] - vaca, int - count  
Returns: void  
  
Method: printVacationSummary  
Purpose: Print summary of all vacations  
Input: Vacation[] - vaca, int - count  
Returns: void  
  
Method: checkEmpty  
Purpose: Check if any vacations has been entered  
Input: int - count, String - message  
Returns: boolean