Taipei travel planning helper

Situation:

After the serious pandemic, domestic tourism is trying hard to recover. In this scenario, we assume ourselves as a travel agency, and we will help the travelers plan their trip to Taipei. This is a simple app which can let users choose four tourist attractions from six places we previously set: Taipei 101, Taipei Nangang Exhibition Center, Taipei Children's Amusement Park, Chiang Kai-shek Memorial Hall, Shilin Night Market. The sequence they input is also the sequence they visit these places. Next, users can input their budget. This code can help you calculate the money and time you would spend on by different transportation. And, the code can also help you analyze if the money you would spend on transportation during the trip is over or within the budget. Finally, the best transportation for you can be determined.

According to the information below, create a java class:

1. Create **Attraction** class

Attraction	
Modifier and type	**Method (or Variable) and description**
Instance variable	
double	lat1 The latitude of site.
double	lon1 The lonitude of site.
Constructor	
Attraction(double lat1, double lon1) Enable to instantiate a Attraction object with a given lat1 and lon1.	
Instance Methods	
-	2 getter for 2 attributes (getlat1(),getlon1()).
double	getDistanceFromLatLonInKm (double lat1,double lon1) Calculate the distance by the lat1 and lon1.

2. Create **Site** class

Site	
Modifier and type	**Method (or Variable) and description**
Instance variable	

String	name The name of it.
Constructor	
Site(String name, double sitex, double sitey) Enable to instantiate a Site object with a given name, sitex and sitey.	
Instance Methods	
-	1 getter for 1 attributes (getName()).

3. Create **Transportation** class

Transportation	
Modifier and type	**Method (or Variable) and description**
Instance variable	
String	name The name of the transportation.
double	costPerKm The cost per kilometer of the transportation.
double	speed The speed of the transportation.
double	cost The total cost of the transportation.
double	time The time cost of the transportation.
Constructor	
Transportation(String name,double costPerUnit,double speed) Enable to instantiate a Taxi object with a given name, costPerUnit and speed.	
Instance Methods	
boolean	**cost(int budget,double distance)** If the budget is higher or equal please return true, otherwise return false.
double	**time(double distance)** Calculate the time of the transportation cost.
double	**calCostTaxi(double distance)** Calculate the cost of the taxi. If the distance is over 1.25, calculate it by: cost = (distance - 1.25)*costPerUnit + 70; If the distance is lower than 1.25, the cost is 70.
double	**calCostScooter(double distance)**

	Calculate the cost of the scooter. If “time(distance)*60 - 6 > 0”, calculate it by: cost = 15 + (time(distance) * 60 - 6) * costPerUnit; If it is not, the cost is 15.
String	**getinfo()** Return the information of the transportation’s name, the cost, the time it cost.

4. Create **Test** class

a. Create six Site objects by the information below.

oneZeroOne:("101",25.034015253745892,121.56467565652719)

exhibition:("南港展覽館", 25.05674767102679,121.61807298218889);

amusementPark:("兒童新樂園",121.61807298218889,121.51503695215715)

CKSmemorialHall:("中正紀念堂",25.034655934625235,121.5215010282203)

Zoo:("木柵動物園",24.99877740610815,121.5811251723995)

nightMarket:("士林夜市",25.088249233297443,121.52428822822138)

b. Create an arraylist to store these sites.

c. Print out the site question. (You can check it at the sample output.)

d. Make the users input the sites and make sure their input is correct.

e. Print out the budget question. (You can check it at the sample output.)

f. Make the users input the budget and make sure their input is a positive number.

g. Create three transportaion objects by the information below.

taxi:("Taxi",5,70)

goShare:("goShare",2.5,50)

car:("car",2,80)

h. Start to calculate the best schedule and the cost must be lower than the budget.

i. Print out the result. (You can check it at the sample output.)

Sample Output

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Please choose four sites from these sites below, your schedule will be the same as your input order:
1)101 2)南港展覽館 3)兒童新樂園 4)中正紀念堂 5)木柵動物園 6)士林夜市
Your choice (input the number of the site):2 4 5 6
Please input your budget(must be a positive number):10000
by all Taxi     → cost: 207 NTD/time: 0.4 hours  在預算內
by all goShare  → cost: 15 NTD/time: 0.6 hours  在預算內
by all car      → cost: 125 NTD/time: 0.4 hours  在預算內
Your schedule: 南港展覽館 中正紀念堂 木柵動物園 士林夜市
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