**In-Class Activity 04**

**Solver/Listener paradigm – Group Working**

This is an in-class group assignment. Fill in the names and email PIDs of the group members in the space provided below so that each group member knows who is in the group. Submit one copy of this to your instructor before you leave class.

|  |  |  |
| --- | --- | --- |
| Group member name | Role | VT Email PID |
|   | Solver |   |
|   | Scribe |   |
|   | Listener |   |

For each problem, pick a solver and a listener a scribe for your group. Identify the role taken by each group member in the table above.

Follow the Solver/Listener paradigm to analyze and attempt to solve the given problem. It is important that you manage the discussions in a disciplined manner so that the scribe can take adequate notes to prepare a transcript of your session.

When you believe you have a solution to the problem, work together to prepare a [written report for submission](http://courses.cs.vt.edu/cs2104/Fall16/assignments/ice.html).

After the class, and by the announced deadline, prepare a written presentation of your session, including the interactions between the solver and the listeners and a detailed explanation of how you arrived at your solution. You may include diagrams and mathematical work if you used those as part of your process.

Your submission for this assignment must be made to [Canvas](https://canvas.vt.edu/). **Only one group member** must submit and ensure that their group partners names and email PIDs are at the top of the first page of the submission.

Legibility counts. Remember that the evaluation of your solution will depend primarily on the completeness and clarity of your explanation.

**Problem 1: Cookie Challenge**

Over Labor Day weekend, the 52nd Annual Cookie Challenge was held by the Tastefully
Sweet Bakery Shop. The Cookie Challenge traditionally signaled the end of summer for
Millersville, but was also greeted with great enthusiasm by the townspeople. Each year, the town’s aspiring bakers brought in their best-ever cookie recipes and on Labor Day, the official Bake-off challenge was held, complete with prizes awarded to the winners.

Dozens of cookies were made from the ten finalist recipes and were open to all for judging. The final four winners were determined by the official judges of the event and a fifth prize was awarded to the favorite cookie chosen by the attending townspeople. This year the favorite cookie was not one of the four contest winners, a phenomenon that seldom occurred.

Determine the full name of each cookie challenge winner as well as the winning place and
type of cookie of each recipe.

1. Marion’s cookie, which wasn’t oatmeal raisin, didn’t win first place. The person whose last name was Green submitted the multigrain cookie recipe.
2. Charlie Stevens didn’t submit a chocolate chip cookie recipe.
3. The favorite cookie wasn’t Eileen’s recipe. The fourth place winner wasn’t the double
chocolate cookie.
4. The oatmeal raisin cookie beat Elliot's cookie by one place. Ms. Stewart's cookie,
which wasn't chocolate chip, was voted the favorite cookie of the event.
5. The person whose last name was Crofter won second place, but not with a double
chocolate cookie. The white chocolate macadamia nut cookie wasn't the first place
winner.
6. The oatmeal raisin cookie, which wasn’t Eileen’s recipe, was made by the person
whose last name was Field. Sally’s cookie, which wasn’t the multigrain, won third
place.

Here is a convenient table for recording your conclusions:

|  |  |  |  |
| --- | --- | --- | --- |
| First Name | Last Name | Winning Place | Cookie Type |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |

**Problem 2: Family Pets**

Five families in Alice’s neighborhood are leaving town for the holidays; which is good news
for Alice since each family has hired her to take care of their pet while they’re gone. Alice
loves animals so she doesn’t mind taking care of them and it gives her a little extra spending money for the holidays. As a result, she always has someone’s pets to car for when holidays come around. This time, she had five different pets to care for, each at a different home located on a different street.

Determine the last name of the families who hired her to take care of their pet, the street each lived on, the type of pet (cat or dog), and the pet’s name.

1. The Parker family lived on Maple Street but their pet wasn’t named Mike. A cat lived
on Forest Street but he wasn’t named Spooky.
2. The two dogs were the one who lived on Lincoln Street and the one whose name was Terry.
3. The Sanford family didn’t have a dog but they lived on Curve Street. The Manning
family had a pet named Brandy.
4. The Johnson family had a cat but he wasn’t called Mike.
5. The Wood family lived on Forest Street but they didn’t have a pet named Spooky.
6. One cat was named Sylvester and he lived on Brook Street.

Here is a convenient table for recording your conclusions:

|  |  |  |  |
| --- | --- | --- | --- |
| Last Name | Street                 | Cat / Dog | Pet's Name |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |

**Problem 3: Job Break**

Right before his fall break from college, Josh signed up at a series of temp agencies. To his surprise and delight, a representative from each agency called him with a job opportunity on the very first day of his break! Each representative offered Josh a different type of job (including secret shopper) in a different nearby city (in one case, Monrovia). Each job has a different shift (Monday-Tuesday, Monday-Tuesday-Wednesday-Thursday, Monday-Wednesday-Friday, Tuesday-Wednesday-Thursday, or Tuesday-Wednesday-Thursday-Friday). With so many offers coming in, Josh has gone from being temporarily idle to permanently busy!

From the information provided, determine the job that the representative from each agency offered Josh, as well as the city in which each job is located and the days that comprise its shift.

1. Two assignments that start on Monday are the one from Apex and the one Bill offered. Bill (who didn't call about the Pasadena job) doesn't work for Red Arrow.
2. The three assignments that include a Thursday shift are the one from Triple Star, the one in San Gabriel, and the movie-extra job.
3. The two four-day assignments are the house-sitting job (which isn't the one in Alhambra) and the one Ken offered.
4. Crystal (who isn't the one who called about the opening for a bingo caller) and Sandra are the representative of Big Time and the one who called about the job in Temple City, in some order.
5. The representatives of Gold Ring and Red Arrow are Sandra and the one who offered the dog-walking job, in some order.
6. The assignment Roger offered (which isn't in Pasadena) includes a Friday shift. The job in Pasadena doesn't include a Tuesday shift.

Here is a convenient table for recording your conclusions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Agency | Representative | Job | City | Shift |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |

**Problem 4: Rugged Cleaning**

When I needed the name of a good rug cleaner, I turned for advice to my friend Helga, who owns a sizable collection of valuable rugs. She told me that over the years she has enjoyed the services of five local rug-cleaning companies (including Steamtronics), but that they were all so efficient she co uldn't pick just one to recommend. An employee of each company cleaned 3 different rugs from Helga's collection of 15 (7 of which—the Aubusson, Belouch, Bokhara, Caucasian, Heriz, Kirman, and Tabriz—are Oriental rugs, while the remaining 8—the Axminster, Brussels, Hopi, moquette, Navaho, Savonnerie, Saxony, and Wilton—are not).

From the information provided, determine the person (identified by first and last names—one surname is Yelden) who works for each company, as well as the 3 rugs he or she cleaned for Helga.

1. Neither Royana (who works for Just Like New Rug Service) nor Brienne cleaned the Brussels rug. Prescott cleaned only one Oriental rug—the Kirman. Felice cleaned the Belouch rug, while Brienne serviced the Axminster.
2. The employee of Immaculate Mats cleaned the moquette and Saxony floor coverings. The one who works for Aladdin Cleaners serviced three Oriental rugs.
3. The one surnamed Cosgrove (who works for Rug Rangers) cleaned at least two Oriental rugs. The one surnamed Escobedo serviced the Hopi rug, but not the Savonnerie. The one surnamed Wessel cleaned the Wilton floor covering.
4. Neither Giles Simkins (who didn't clean the Heriz) nor the one surnamed Wessel serviced the Aubusson. Neither the one who cleaned the Axminster (who doesn't work for Immaculate Mats) nor the one who cleaned the Aubusson is surnamed Cosgrove.

Here is a convenient table for recording your conclusions:

|  |  |  |  |
| --- | --- | --- | --- |
| First Name | Last Name | Company | Rugs |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |