 Meal and a movie

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You are going to cook your family dinner tonight and then meet your friends at the movies.

You need to determine:

* What time you will serve dinner
* What time movie session you will attend

Useful Information

* You start cooking when you arrive home at 6:00pm. This will be time 0:00.
* You are going to serve the recipe with garlic bread and grated parmesan cheese.
* The possible film times available are: 7:30pm, 7:45pm, 8:00pm, 8:15pm, 9:00pm or 9:30pm.
* It will take you a total of 45 minutes to eat your dinner and wash up afterwards.
* It will take you 15 minutes to walk to the cinema.
* You want to arrive at the movies at least 10 minutes before it starts so that you can buy your ticket and purchase snacks.

Task 1: Find a recipe

Find a Bolognese pasta sauce recipe. Break the recipe into three components:

* Preparation time: How long will it take you to cut up the ingredients?
* Cooking time: How long will you need to spend cooking / stirring the ingredients?
* Simmering time: How long will the sauce need to simmer for without your input?

Task 2: Complete an activity chart

Complete the following activity chart:

| Code | Task | Duration (hours) | Predecessors |
| --- | --- | --- | --- |
| Start | Arrive home | - | Nil |
| A | Sauce preparation |  | Nil |
| B | Sauce cooking |  |  |
| C | Sauce simmering |  |  |
| D | Boil water for pasta |  |  |
| E | Cook pasta |  |  |
| F | Preheat oven |  |  |
| G | Cook garlic bread in the oven |  |  |
| H | Grate parmesan cheese |  |  |
| I | Serve meal |  |  |
| J | Eat meal and wash up |  |  |
| K | Walk to cinema |  |  |
| Finish | Arrive at the cinema | - |  |

Task 2: Construct a network diagram

Consider what you can run parallel. For example the pasta could be simmering, garlic bread cooking and you could be grating cheese all at the same time.

Task 3: Perform critical pathway analysis

Steps:

* Complete forward scanning
* Complete backward scanning
* Identify the critical path

Task 4: What time…

Determine your answers to the original questions:

* What time you will serve dinner?
* What time movie session you will attend?

Task 5: What if?

What would happen to the serving time of dinner and movie session you attend if:

* the preparation time was 15 minutes longer than expected?
* you took 30 minutes to walk to the movies?
* the pasta took an extra 5 minutes to cook?

Pose additional What if? questions to consider.

Meal and a movie – sample solution

Task 1: Find a recipe

Find a Bolognese pasta sauce recipe. Break the recipe into three components:

* Preparation time: How long will it take you to cut up the ingredients? 30 minutes
* Cooking time: How long will you need to spend cooking / stirring the ingredients? 15 hour
* Simmering time: How long will the sauce need to simmer for without your input? 1 hour

Task 2: Complete an activity chart

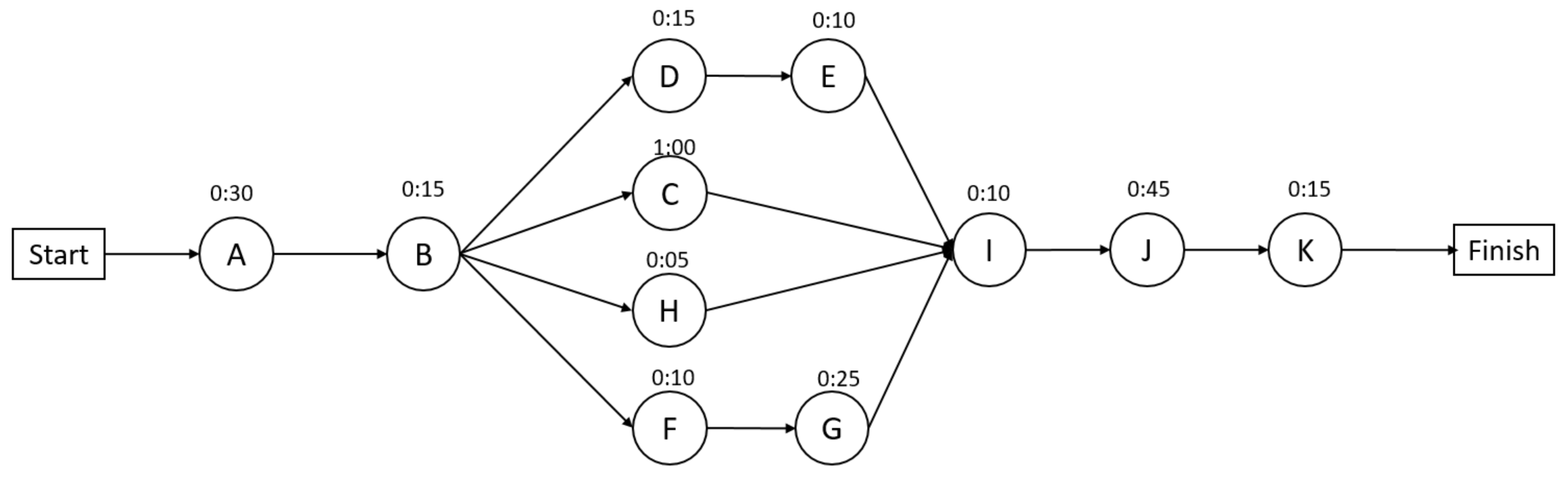
Complete the following activity chart:

| Code | Task | Duration (hours) | Predecessors |
| --- | --- | --- | --- |
| Start | Arrive home | - | Nil |
| A | Sauce preparation | 0:30 | Nil |
| B | Sauce cooking | 0:15 | A |
| C | Sauce simmering | 1:00 | B |
| D | Boil water for pasta | 0:15 | Nil |
| E | Cook pasta | 0:10 | D |
| F | Preheat oven | 0:10 | Nil |
| G | Cook garlic bread in the oven | 0:25 | F |
| H | Grate parmesan cheese | 0:05 | Nil |
| I | Serve meal | 0:10 | H, G, E, C |
| J | Eat meal and wash up | 0:45 | I |
| K | Walk to cinema | 0:15 | J |
| Finish | Arrive at the cinema | - |  |

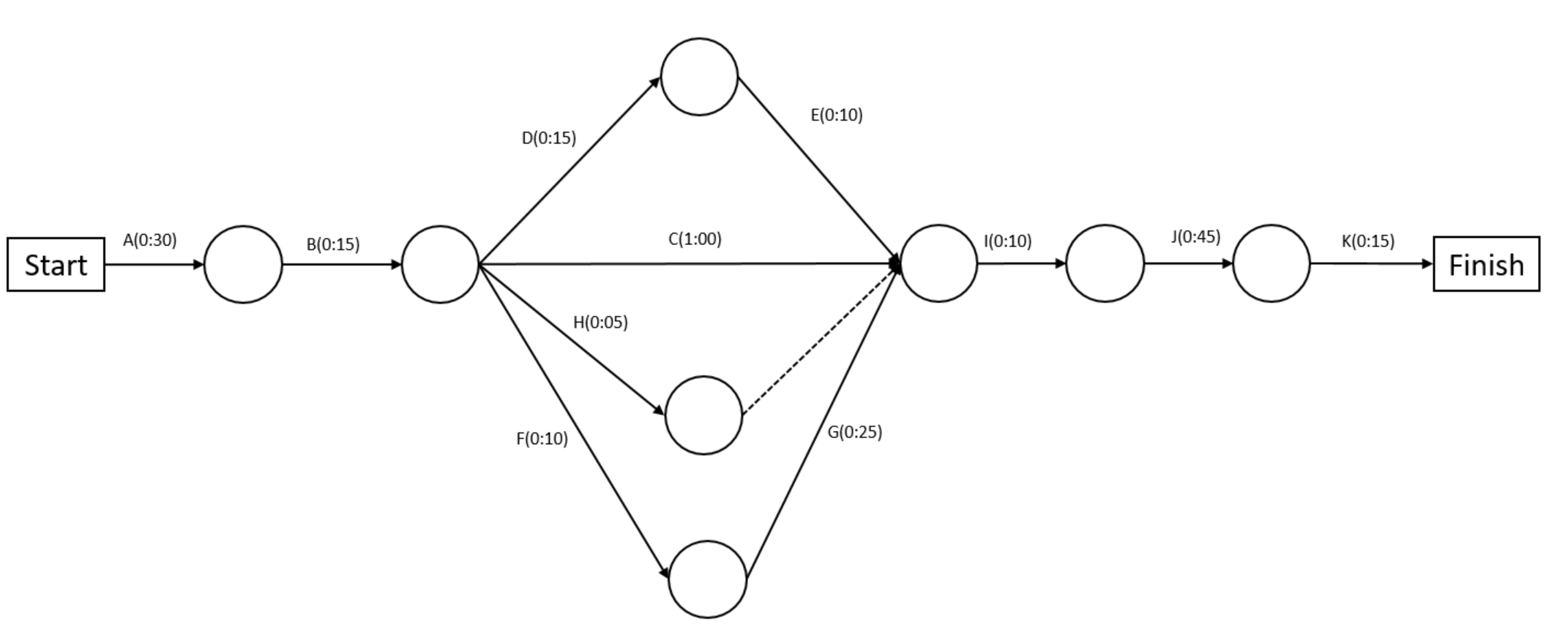
Task 2: Construct a network diagram

Consider what you can run parallel. For example the pasta could be simmering, garlic bread cooking and you could be grating cheese all at the same time.

Sample 1: Activity on node



Sample 2: Activity on arrow

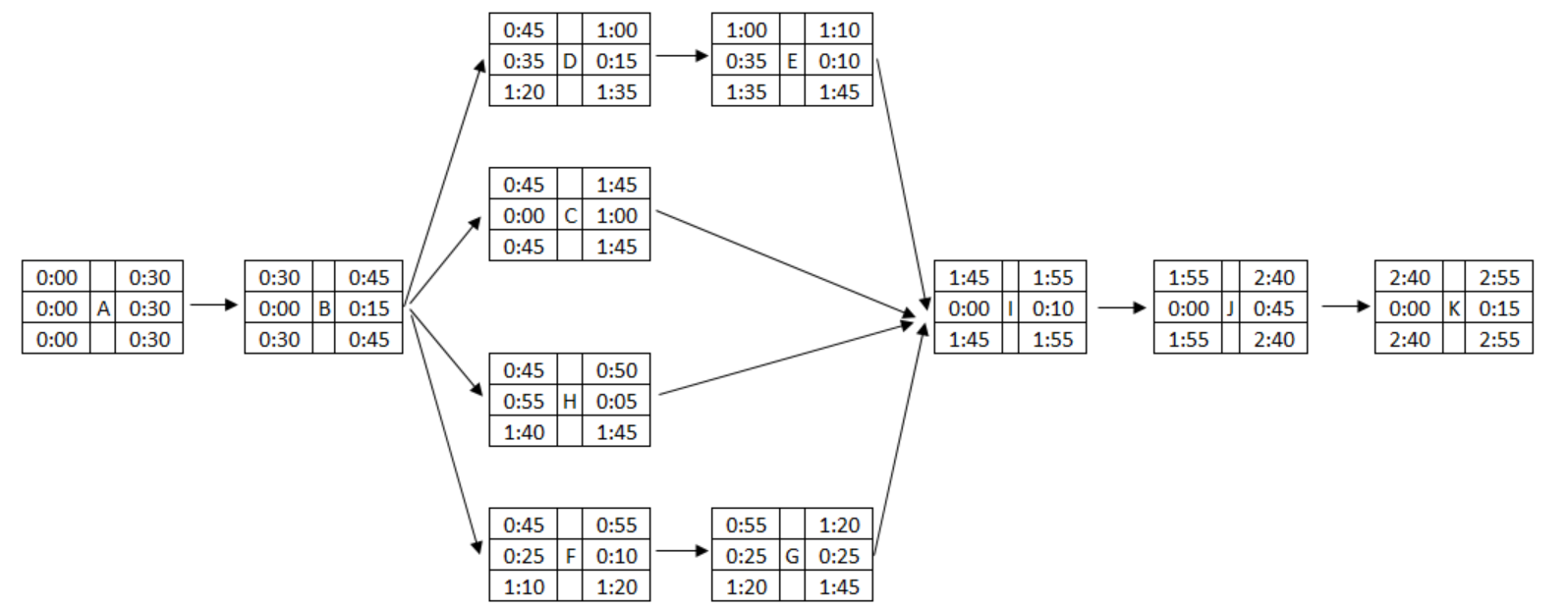


Task 3: Perform critical pathway analysis

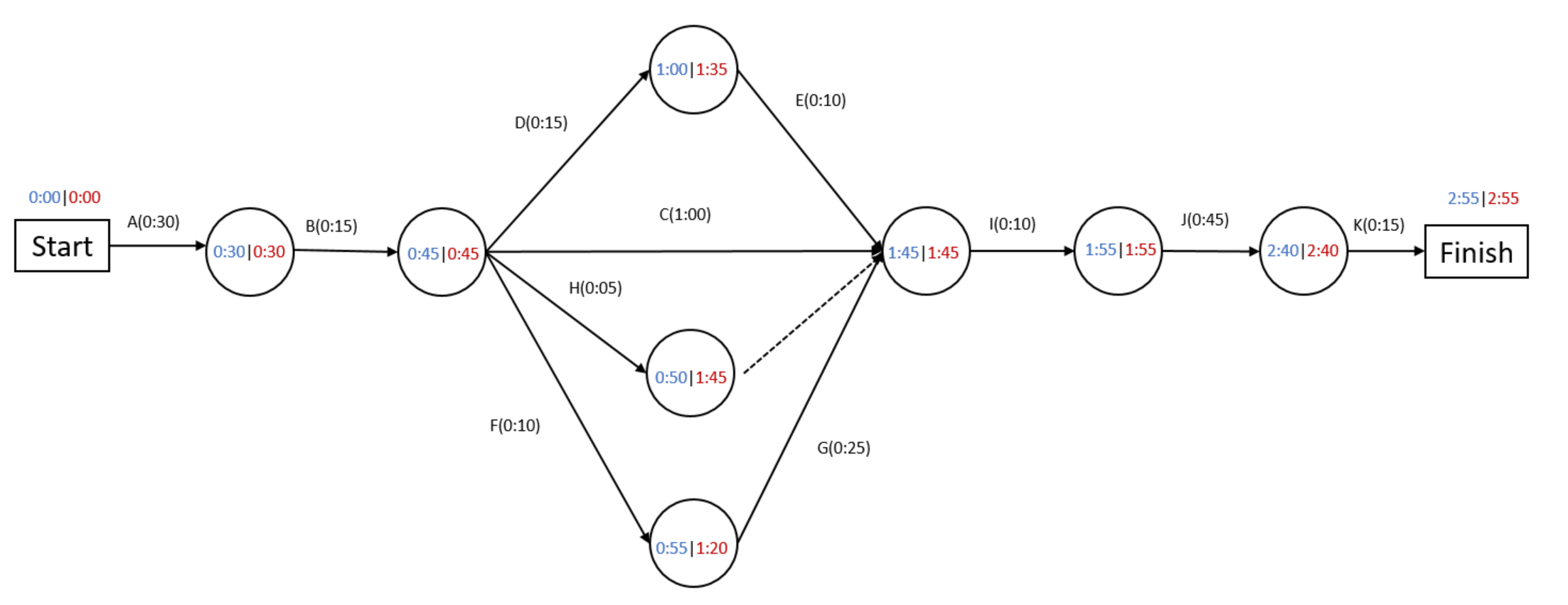
Steps:

* Complete forward scanning
* Complete backward scanning
* Identify the critical path

Sample 1: Activity on node (activity box)



Sample 2: Activity on arrow



Task 4: What time…

Determine your answers to the original questions:

* What time you will serve dinner?

Dinner will be served 1 hour and 55 minutes after I start cooking, i.e. 7:55pm.

* What time movie session you will attend?

The earliest I can arrive at the movies is 2 hours and 40 minutes after I start cooking, i.e. 8:40pm.

I need to arrive at least 10 minutes before the movie starts to buy a ticket and snacks.

The earliest the movie could start is 8:50pm.

I will be able to attend to 9:00pm session.

Task 5: What if?

What would happen to the serving time of dinner and movie session you attend if:

* the preparation time was 15 minutes longer than expected?

It would increase the serving time of dinner to 8:10pm.

It would increase the earliest time the movie could start to 9:05pm. I could attend the 9:30pm session.

* you took 30 minutes to walk to the movies?

It would increase the earliest time the movie could start to 9:05pm. I could attend the 9:30pm session.

* the pasta took an extra 5 minutes to cook?

This will not affect future times unless I started cooking the pasta after 7:30pm.

Pose additional What if? questions to consider.