

**Question 1.**  
We will need a table to keep track of **user clicks**. Below is a rough structure of the table, but it is incomplete in the following ways:

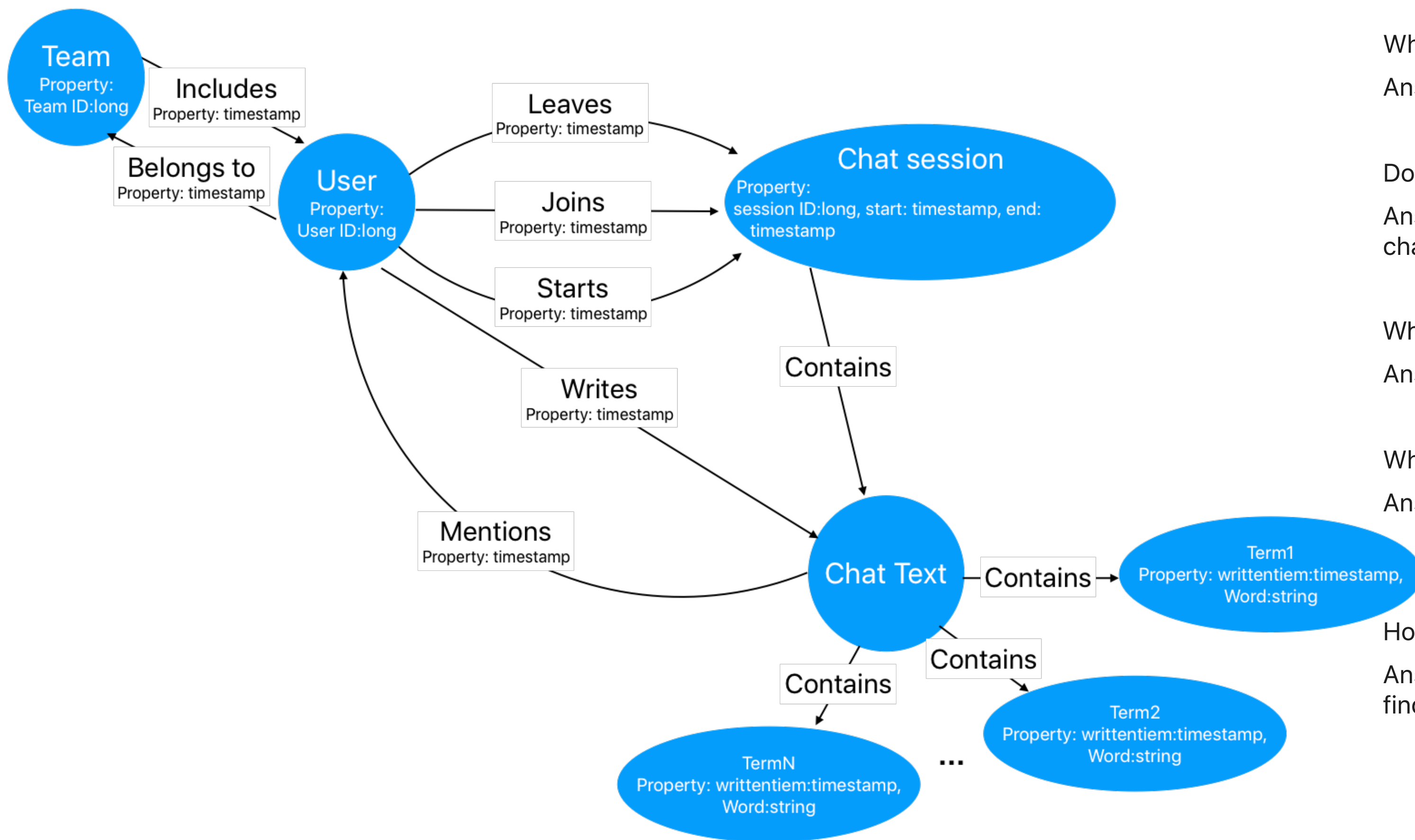
- 1. There are no primary keys,
- 2. More columns may need to be added,
- 3. The data types are not all specified.

Copy the table below, paste it into your response, and complete the missing parts of the schema according to the list above. You may provide a brief explanation as needed.

**Answer**

userID:long	sessionID:long	timestamp:date Time	clickedPoint:coordinate	missionID:long	isHit:bool	<u>clickID:long</u> <b>Primary</b>	Flamingo_type subtype_ID:long
100	4356	10/12/2015::14:15:09	(4,8)	13	Yes		
101	3241	10/23/2015::14:15:19	(20,5)	18	No		
102	4537	11/4/2015::14:15:20	(17,43)	21	No		

**Question 2.1.**  
List all node and edge properties for a graph.



**Question 2.2.**  
Briefly explain how you would use the graph to answer the following five questions?

Which teams are having more conversations?

Answer: Count chat session ID by Team ID and find the team have the most conversion.

Do users chat more (or less) before they leave a team?

Answer: Get **Starts** time statistics and chat session ID of a user and check if he/she has more chat session ID count when he/she leave a team

What are the dominant terms (words) used in a chat session within a specific time period?

Answer: Analyse term nodes and their **writtentime** property

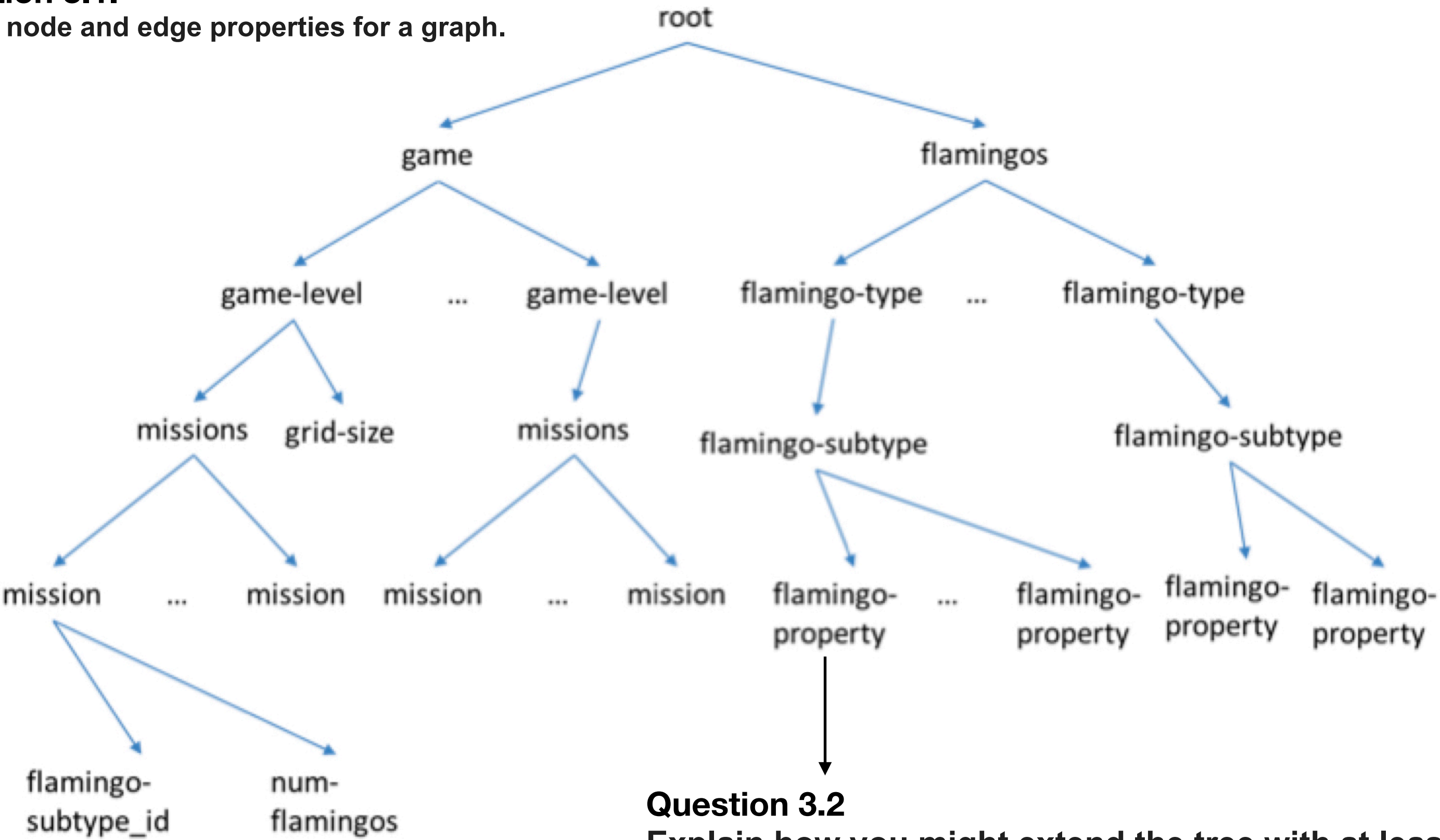
Which users are most active in a specific chat session?

Answer: Count number of term **writes** by user ID

How many chat sessions is a user participating in at the same time?

Answer: Get all chat sessions a user join and analyse chat session start and end properties to find the common time window

**Question 3.1.**  
List all node and edge properties for a graph.



**Question 3.2**  
Explain how you might extend the tree with at least five specific flamingo properties. For example, beak-color whose values might be “bright-red” or “pink”.

Flamingo property	Beck-color:	Speed	Catch dodge percent	Size	Sex
Values range	1.Bright-red 2. pink	0~5	0~100%	0~5	1.M 2.F
Objective	Different types of flamingo	Flamingo running speed	When a user “catch” a flamingo the chance, the bird escape	This property determines the collision volume when a user click on the flamingo	Male bird likes to run and Female likes to hide under trees