

4.5 Pages:

4.5.1 Start page (index page):

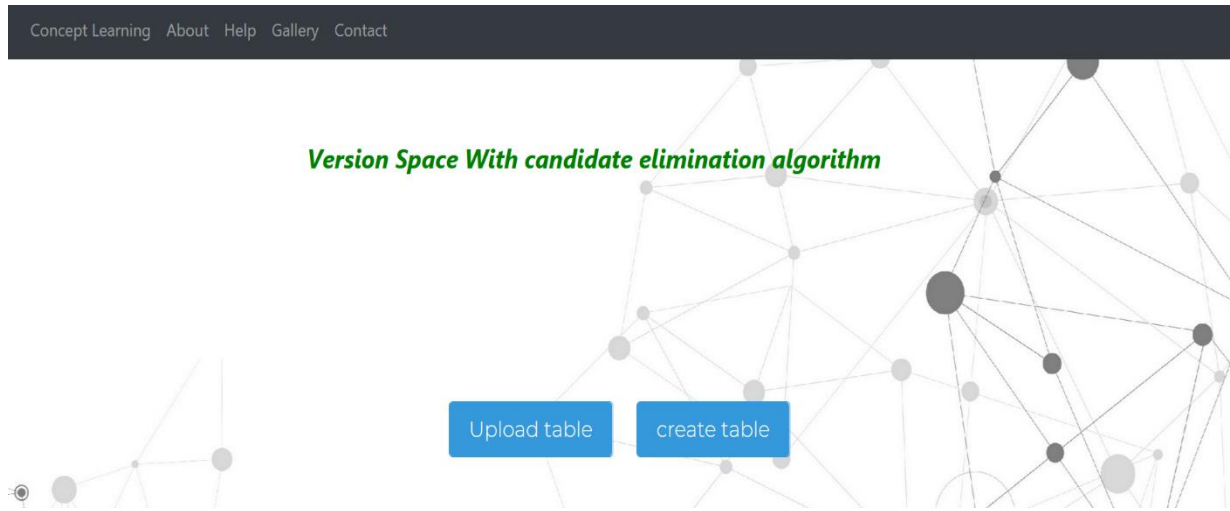
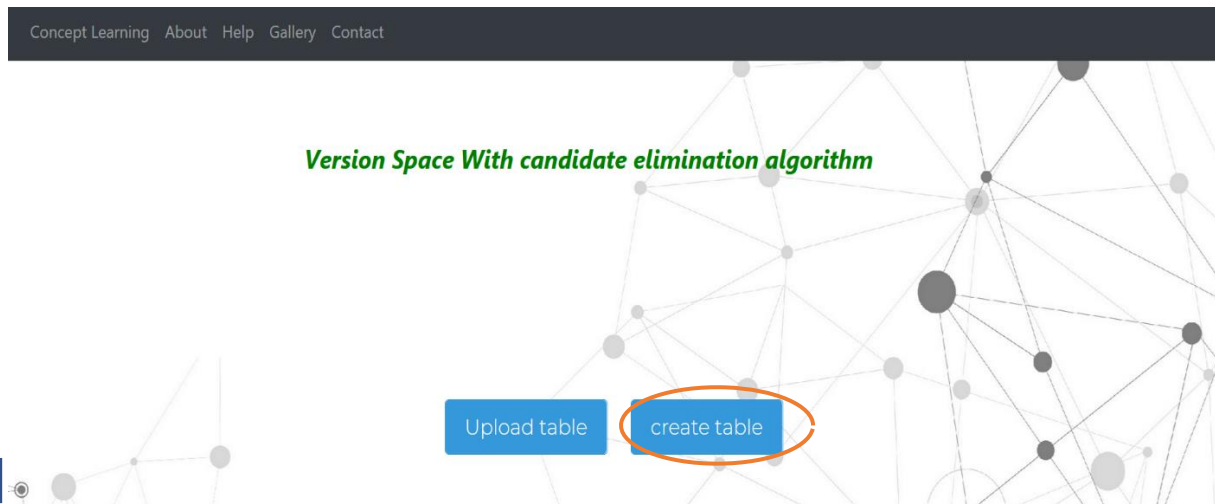


Figure 4.5.1: Start page (Index page).

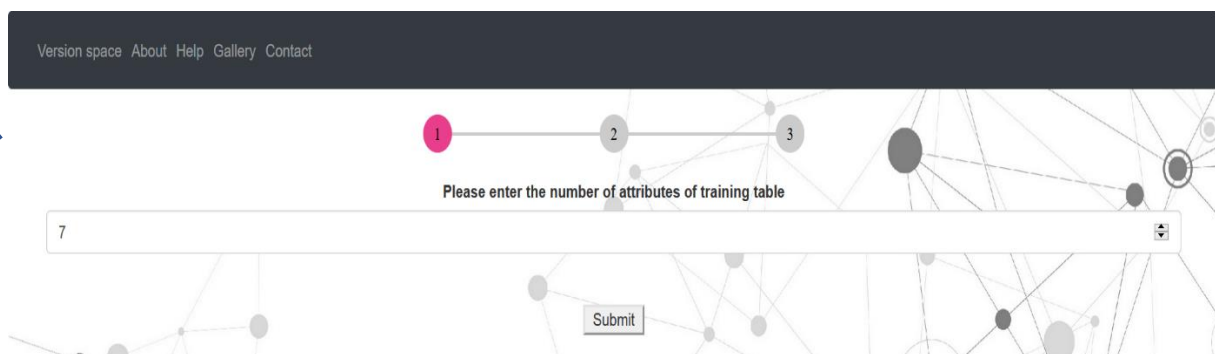
The above picture shows the first page of the website. The user can navigate to the createTable page by clicking on the button (create Table) and navigate to the UploadTable page by clicking on the UploadTable page. The navigation bar lists different buttons (Concept learning, About, Help, Contact). Every button leads to a different page.

4.5.2 CreatTable page:

4.5.2.1 First step:



When the create Table button in the start page is clicked, the user will be navigated to the create Table Page. As explained previously, this page allows the user to create the training data table. The first step is inputting the number of attributes of the training table's header, 7, in the above example. The table header has at least one attribute, and therefore the input field takes just one positive numerical value greater than 0. If the user inputs a string value or a value less than 0, an alert message will be prompted.



4.5.2.2 Second step:

Version space About Help Gallery Contact

1 2 3

Please enter the number of attributes of training table

7

Submit

Once the number of attributes is given and submitted by the user, a form of input fields will be shown, where the user can input the header attributes of the table. The number of input fields matches the number that the user enters on the first page, which is 7.

1 2 3

Attribute 1
Sky

Attribute 2
Temp

Attribute 3
Humid

Attribute 4
Wind

Attribute 5
Water

Attribute 6
Forest

Attribute 7
Ouput

submit the attributs

4.5.2.3 Third Step:

This screenshot shows the third step of a process. It features a background network diagram with nodes and edges. In the center, there is a form with seven attributes, each with a corresponding input field:

- Attribute 1: Sky
- Attribute 2: Temp
- Attribute 3: Humid
- Attribute 4: Wind
- Attribute 5: Water
- Attribute 6: Forest
- Attribute 7: Ouput

At the bottom of the form, there is a blue button labeled "submit the attributs". Above the form, there are three red circles labeled 1, 2, and 3, connected by a horizontal line. A large blue curved arrow on the left side of the image points from this step towards the next step.

When all attributes are given and submitted by the user, the last page will be shown. It consists of three components, on the right side the training data table with its header attributes given by the user, a form of input fields that enables the user to add records to the table, and on the right side a text area, where the border sets S and G can be displayed. Whenever a training example is added to the table, the border sets S and G will be presented in the text area on the right side, so that the user can see what happens by adding an example and how the border sets change.

This screenshot shows the final page of the process. It features a background network diagram with nodes and edges. On the left side, there is a table with the following headers: Sky, Temp, Humid, Wind, Water, Forest, Ouput, and ACT. Below the table, there is a blue button labeled "Add a record". On the right side, there is a form with seven attributes, each with a corresponding input field:

- Sky
- Temp
- Humid
- Wind
- Water
- Forest
- Ouput

Below the form, there is a blue button labeled "Add a record". To the right of the form, there is a large gray text area. Below the text area, there are two blue buttons: "Version space" and "Test an example". Above the form, there are three red circles labeled 1, 2, and 3, connected by a horizontal line. A large blue curved arrow on the left side of the image points from the previous step towards this final page.

4.5.2.4 Features:

4.5.2.4.1 Add to table feature:

Sky	Temp	Humid	Wind	Water	Forest	Output	ACTIONS
sunny	warm	normal	strong	warm	same	Yes	<button>Edit</button> <button>Delete</button>

Version space window content:

```
S1: <sunny,warm,normal,strong,warm,same>  
G1: <??????>
```

Buttons: Version space Test an example Add a record

When a new instance is added to the table, the border sets S and G change accordingly. From the above picture, it can be seen that by adding the first example, S1 and G1 get initialized. Furthermore, every row in the table can be deleted or edited using the “Edit” and “Delete.” buttons.

Sky	Temp	Humid	Wind	Water	Forest	Output	ACTIONS
sunny	warm	normal	strong	warm	same	Yes	<button>Edit</button> <button>Delete</button>
sunny	warm	high	strong	warm	same	Yes	<button>Edit</button> <button>Delete</button>
rainy	cold	high	strong	warm	change	No	<button>Edit</button> <button>Delete</button>
sunny	warm	high	strong	cool	change	Yes	<button>Edit</button> <button>Delete</button>

Version space window content:

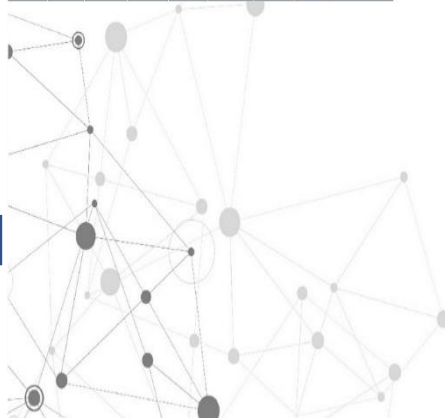
```
S1: <sunny,warm,normal,strong,warm,same>  
G1: <??????>  
  
S2: <sunny,warm,strong,warm,same>  
G2: <?strong,warm,same>  
  
S3: <sunny,warm,strong,warm,same>  
G3: <sunny,?????>, <?warm,?????>, <?????same>  
  
S4: <sunny,warm,strong,??>  
G4: <sunny,?????>, <?warm,?????>
```

Buttons: Version space Test an example Add a record

This picture shows how the page should be looking after adding all training examples to the table. The text area on the right side displays the border sets' changes by adding every new example.

4.5.2.4.2 Delete row Feature:

Sky	Temp	Humid	Wind	Water	Forest	Output	ACTIONS
sunny	warm	normal	strong	warm	same	Yes	Edit Delete
sunny	warm	high	strong	warm	same	Yes	Edit Delete
rainy	cold	high	strong	warm	change	No	Edit Delete
sunny	warm	high	strong	cool	change	Yes	Edit Delete



1

2

3

Sky

sunny

Temp

warm

Humid

high

Wind

strong

Water

cool

Forest

change

Output

Yes

Add a record

S1: <sunny.warm.normal.strong.warm.same>
G1: <?,?,?,?,?>

S2: <sunny.warm.?strong.warm.same>
G2: <?,?,?,?,?>

S3: <sunny.warm.?strong.warm.same>
G3: <sunny.?,?,?,?>, <?.warm.?,?,?>, <?,?,?,?.same>

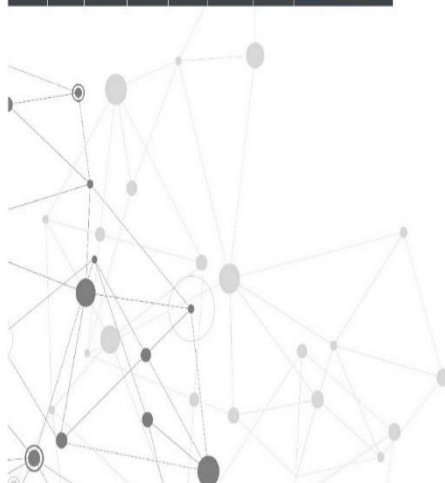
S4: <sunny.warm.?strong.?,?>
G4: <sunny.?,?,?,?>, <?.warm.?,?,?>

Version space

Test an example

When the user deletes a training example, he/she can click on the delete button at the observed example. After deleting the example, the border sets S and G should be altered accordingly as shown in the blow picture.

Sky	Temp	Humid	Wind	Water	Forest	Output	ACTIONS
sunny	warm	normal	strong	warm	same	Yes	Edit Delete
sunny	warm	high	strong	warm	same	Yes	Edit Delete
rainy	cold	high	strong	warm	change	No	Edit Delete



1

2

3

Sky

sunny

Temp

warm

Humid

high

Wind

strong

Water

cool

Forest

change

Output

Yes

Add a record

S1: <sunny.warm.normal.strong.warm.same>
G1: <?,?,?,?,?>

S2: <sunny.warm.?strong.warm.same>
G2: <?,?,?,?,?>

S3: <sunny.warm.?strong.warm.same>
G3: <sunny.?,?,?,?>, <?.warm.?,?,?>, <?,?,?,?.same>

Version space

Test an example

4.5.2.4.3 Display version space feature:

Sky	Temp	Humid	Wind	Water	Forest	Output	ACTIONS
sunny	warm	normal	strong	warm	same	Yes	Edit Delete
sunny	warm	high	strong	warm	same	Yes	Edit Delete
rainy	cold	high	strong	warm	change	No	Edit Delete
sunny	warm	high	strong	cool	change	Yes	Edit Delete

The interface also includes a network diagram with nodes and edges, and a version space window showing hypotheses S and G.

Version space window content:

```

S1: <sunny,warm,normal,strong,warm,same>
G1: <?,?,?,?,?>

S2: <sunny,warm,?,strong,warm,same>
G2: <?,?,?,?,?>

S3: <sunny,warm,?,strong,warm,same>
G3: <sunny,?,?,?,?>, <?,warm,?,?,?>, <?,?,?,?,same>

S4: <sunny,warm,?,strong,?,?>
G4: <sunny,?,?,?,?>, <?,warm,?,?,?>
  
```

Buttons: [Version space](#), [Test an example](#), [Add a record](#)

When the version space button is clicked, the version space will be displayed. The border sets S and G are bordered with bold black color. Between S and G are all hypotheses that cover the training examples.

Version Space

S: < sunny,warm,?,strong,?,? >

< sunny,warm,?,?,?,? >, < sunny,?,?,strong,?,? >, < ?,warm,?,strong,?,? > ,

G:< sunny,?,?,?,?,? >,< ?,warm,?,?,?,? > ,

[Close](#)

4.5.2.4.4 Test an example feature:

Sky	Temp	Humid	Wind	Water	Forest	Output	ACTIONS
sunny	warm	normal	strong	warm	same	Yes	<button>Edit</button> <button>Delete</button>
sunny	warm	high	strong	warm	same	Yes	<button>Edit</button> <button>Delete</button>
rainy	cold	high	strong	warm	change	No	<button>Edit</button> <button>Delete</button>
sunny	warm	high	strong	cool	change	Yes	<button>Edit</button> <button>Delete</button>

The network diagram shows nodes for Sky, Temp, Humid, Wind, Water, Forest, and Output, connected by edges. A 'Version space' window is open, displaying a list of hypotheses (S1, S2, S3, S4) and their corresponding generalizations (G1, G2, G3, G4). The 'Test an example' button is highlighted with an orange circle.

After the version space is generated, the user can test whether a specific example can be covered by the version space or not. When the “Test an example” button is clicked, a form of input fields will be displayed, where the user can enter the values of the test example.

Test an example

Sky: cloudy

Temp: cold

Humid: normal

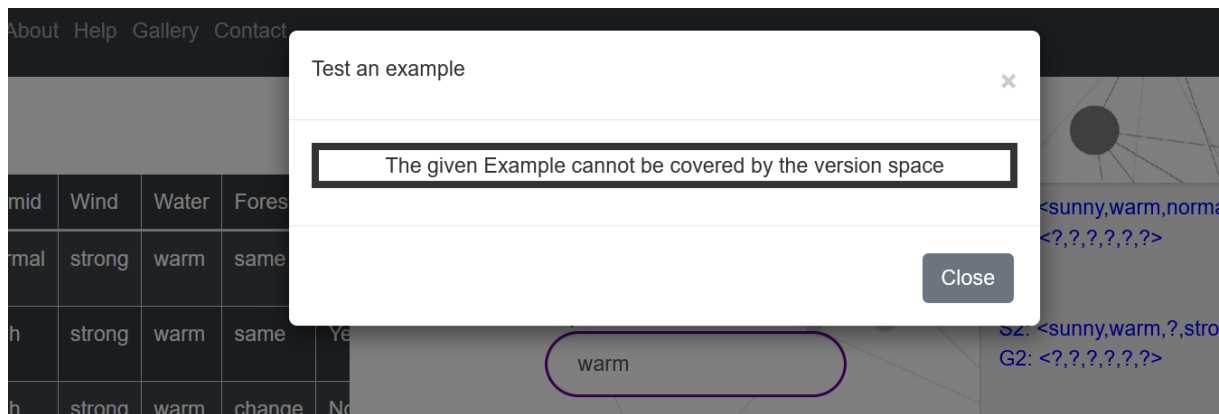
Wind: strong

Water: cool

Forest: change

Test

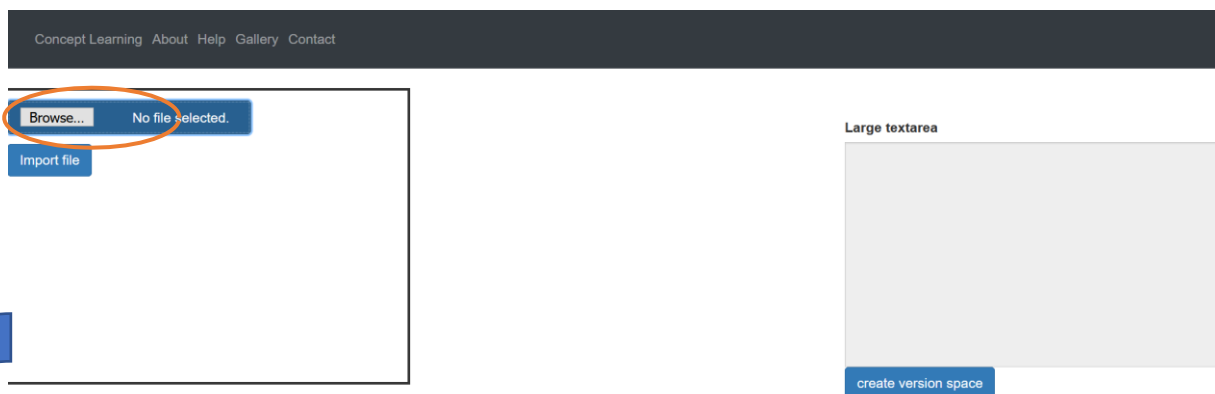
Once all values of the test example are given, then it can be tested, whether the given example is covered by the version space or not. The given example cannot be covered by the user.



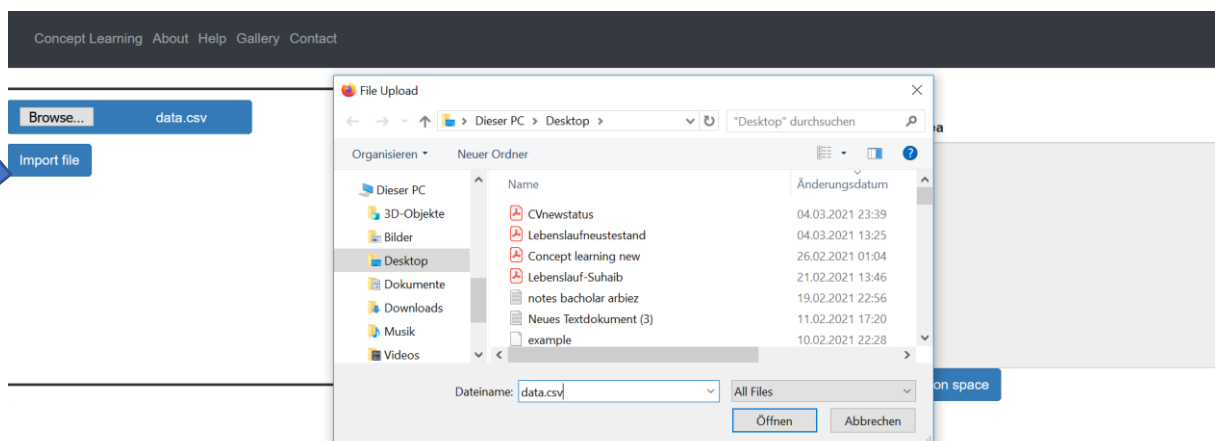
4.5.3 UploadTable page:

This page enables the user to upload a training table from his/ her computer and run the candidate elimination algorithm to generate the version space.

4.5.3.1 First step:



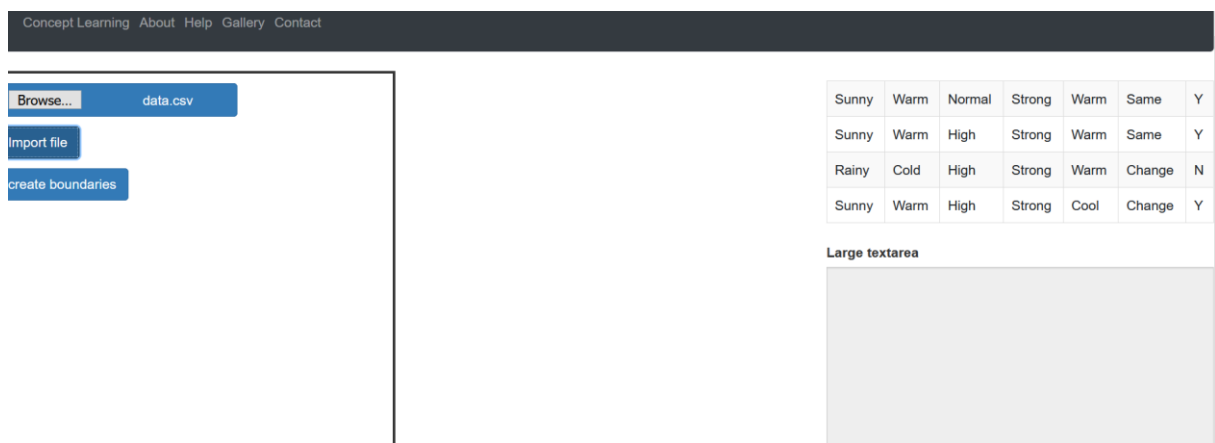
When the user clicks on the “Browse” button, he/she will have the ability to navigate through the computer and chose the file that contains the training data. It is very important that the chosen file is extended with (.csv (comma separated value)), otherwise an exception will be thrown and an alert message will be shown to the user.



4.5.3.2 second step:



Once the user has chosen the file that contains the training table from the computer, he/she can import it into the website by clicking on the “import file” button. The table will be displayed on the right side of the website containing all data.



4.5.3.3 Third step:

Concept Learning About Help Gallery Contact

Browse... data.csv

Import file

create boundaries

Sunny	Warm	Normal	Strong	Warm	Same	Y
Sunny	Warm	High	Strong	Warm	Same	Y
Rainy	Cold	High	Strong	Warm	Change	N
Sunny	Warm	High	Strong	Cool	Change	Y

Large textarea

When the user clicks on the “create boundaries” button, the version space boundaries will be created and displayed in the text area.

Browse... data.csv

Import file

create boundaries

Sunny	Warm	Normal	Strong	Warm	Same	Y
Sunny	Warm	High	Strong	Warm	Same	Y
Rainy	Cold	High	Strong	Warm	Change	N
Sunny	Warm	High	Strong	Cool	Change	Y

Large textarea

S1: <Sunny,Warm,Normal,Strong,Warm,Same>
G1: <?,?,?,?,?,?>

S2: <Sunny,Warm,?,Strong,Warm,Same>
G2: <?,?,?,?,?,?>

S3: <Sunny,Warm,?,Strong,Warm,Same>
G3: <Sunny,?,?,?,?,>; <?,Warm,?,?,?,>;
<?,?,?,?,Same>

4.5.3.4 last step:

Browse... data.csv

Import file

create boundaries

| | | | | | | |
|-------|------|--------|--------|------|--------|---|
| Sunny | Warm | Normal | Strong | Warm | Same | \ |
| Sunny | Warm | High | Strong | Warm | Same | \ |
| Rainy | Cold | High | Strong | Warm | Change | f |
| Sunny | Warm | High | Strong | Cool | Change | \ |

Large textarea

S1: <Sunny,Warm,Normal,Strong,Warm,Same>
G1: <?,?,?,?,?,?>

S2: <Sunny,Warm,?,Strong,Warm,Same>
G2: <?,?,?,?,?,?>

S3: <Sunny,Warm,?,Strong,Warm,Same>
G3: <Sunny,?,?,?,?,?>; <?,Warm,?,?,?,?>;
<?,?,?,?,?,Same>
create version space

When the “create version space” button is clicked, the version space will be displayed with its border sets and the hypotheses that lie between them.

learning About Help Gallery Contact

data.csv

aries

Version Space

S: < Sunny,Warm,?,Strong,?,? >
< Sunny,Warm,?,?,?,? >; < Sunny,?,?,Strong,?,? >; < ?,Warm,?,Strong,?,? >;
G: < Sunny,?,?,?,?,? >; < ?,Warm,?,?,?,? >;

Close

Large textarea

S1: <Sunny,Warm,Normal,Strong,Warm,Same>
G1: <?,?,?,?,?,?>

S2: <Sunny,Warm,?,Strong,Warm,Same>
G2: <?,?,?,?,?,?>