### Assignment 6

**Due on 2019-09-11, 23:59:59.**

#### Course outline

How to assess the portal? 1 point

1. What is a specified query in a real-life node in a decision tree? 1 point

#### Section 7

Week 9

1. Course review – week 9

#### Section 8

Week 10

1. Introduction to Machine Learning (MTM)

#### Section 9

Week 11

1. Decision Trees – Introduction

#### Section 10

Week 12

1. Decision Trees – Exceptional Models

#### Section 11

Week 13

1. Decision Trees – Further Issues

#### Section 12

Week 14

1. Decision Trees – Impact

#### Section 13

Week 15

1. Decision Trees –g-Decision Trees

#### Section 14

Week 16

1. Decision Trees – Tree Ensembles

#### Week 6 Feedback

1. Assignment 6 – Feedback

#### Section 15

Week 17

1. Data Science – Introduction

#### Section 16

Week 18

1. Data Science – Machine Learning

#### Section 17

Week 19

1. Data Science – Neural Networks

#### Section 18

Week 20

1. Data Science – Vicarious Learning

#### Section 19

Week 21

1. Data Science – Cognitive Science

#### Section 20

Week 22

1. Data Science – Artificial Intelligence

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### Consider the following data set

<table>
<thead>
<tr>
<th>Attribute</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price</strong></td>
<td>3000</td>
<td>4000</td>
<td>1500</td>
<td>5000</td>
<td>7000</td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>100</td>
<td>200</td>
<td>150</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>15</td>
<td>20</td>
<td>10</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td><strong>Distance from center</strong></td>
<td>10</td>
<td>20</td>
<td>15</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td><strong>Number of bedrooms</strong></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Question 1:

What is the value of price when we consider capacity as the attribute to split on (by how many)? 1 point

#### Question 2:

Which is the average of the following: 1 point

- **3000**
- **4000**
- **1500**
- **5000**
- **7000**

#### Question 3:

The variance is given by the following: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 4:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 5:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 6:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 7:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 8:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 9:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 10:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 11:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 12:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 13:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 14:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 15:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 16:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 17:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 18:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]

#### Question 19:

The variance of the following is: 1 point

\[ \text{Variance} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2 \]

#### Question 20:

The mean of the following is: 1 point

\[ \mu = \frac{1}{n} \sum_{i=1}^{n} x_i \]