Lab Report-2: Report on Decision Tree R Implementation

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For implementing decision tree using R library function i follow the following steps-

1. Install party package for building decision tree
2. Import the data
3. Split train and test set
4. Build the tree
5. Result
6. Measure accuracy after K - fold cross validation

1. Install party package for building decision tree
For developing a decision tree in R firstly we need to install party package. party stands for recursive partitioning and employs the CART (classification and regression trees) algorithm. Apart from the party library, there are many other decision tree libraries like C50, rpart, Tree, and mapTree. I will use party library for building the decision tree. Using the following command party can be installed in Rstudio.

<div align="center">install.packages("party")</div>

2. Import the data
Social network ads dataset is used for building decision tree. Data is collected from github which is attached to assignment folder.

Data is imported using the following code-

<div align="center">Dataset <- read.csv("ad.csv")</div>

3. Train and test split
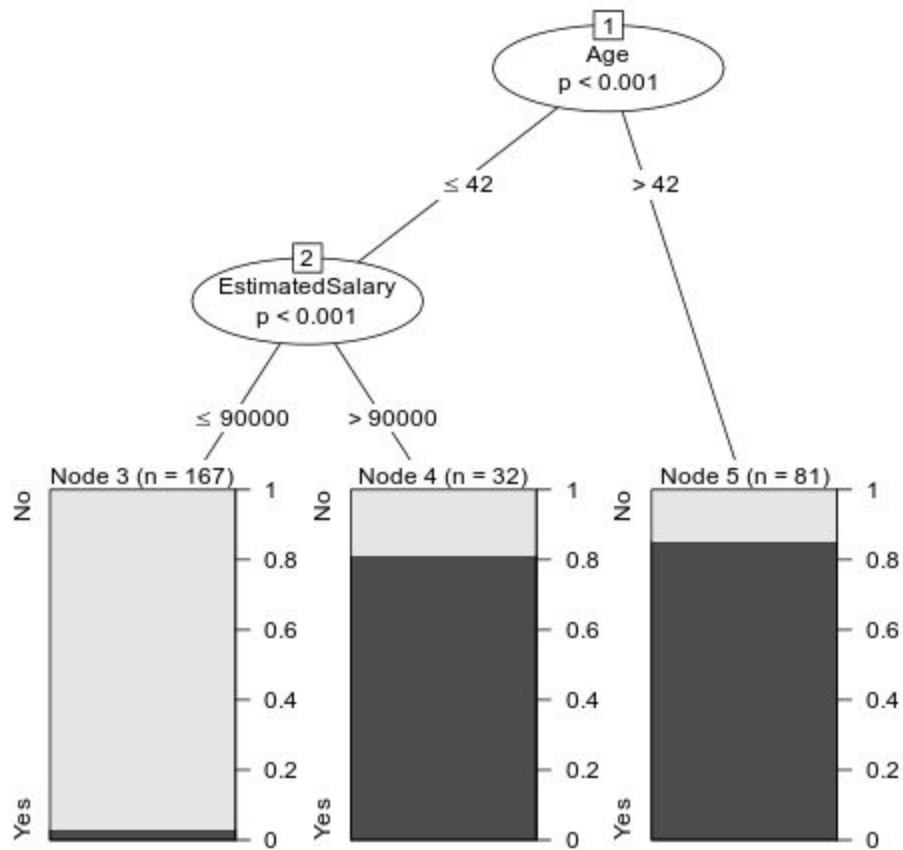Data is split into 70% train data and 30% for performing test data

4. Build the tree
Now, we create a decision tree model by calling the ctree function.

<div align="center">ctree(Purchased ~ User.ID + Gender + Age + EstimatedSalary, data=input.dat)</div>

5. Result

Here is the decision tree of the social network ads dataset.

6. Measure accuracy after k-fold cross validation

Decision tree accuracy is measured after 10-fold cross validation and the accuracy is 0.91.