1) Functional Requirements

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| **Name:** | R. #1. Load data |
| **Summary:** | The program must be able to load the data from the csv file that was chosen for this project. It is located inside the project´s folder in the following path (../../data/Dataset.csv).  The data in the dataset are: “AGE”,”JOB”,”MARITAL”,”EDUCATION”, “DEBT”, “BALANCE”, “HOUSING”, “LOAN”, “DEPOSIT”  This data will be manipulated by the program during its execution. |
| In: | csv file |
|  |  |
| Out: | The data is loaded in the program. |
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| **Name:** | R. #2. Display data |
| **Summary:** | The program must be able to display on the screen the loaded data from the csv in a table using a DataGridView component. The label of the columns represent the attributes and each row represents a record of the table.  The data are: “AGE”,”JOB”,”MARITAL”,”EDUCATION”, “DEBT”, “BALANCE”, “HOUSING”, “LOAN”, “DEPOSIT” |
| In: | The loaded data from the csv file. |
|  |  |
| Out: | A table with the data of the loaded file. |
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| **Name:** | R. #3. Filter data |
| **Summary:** | The program must be able to filter the data of the table that is displayed on the screen based on a desired attribute (column of the table). The attributes from which the user can choose to filter the table are “AGE”,”JOB”,”MARITAL”,”EDUCATION”, “DEBT”, “BALANCE”, “HOUSING”, “LOAN”, “DEPOSIT”. This option will be displayed using a ComboBox component. |
| In: | the desired attribute. |
|  |  |
| Out: | a filtered table will be displayed on the screen in real time. |
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| **Name:** | R. #4. Show charts |
| **Summary:** | The program must be display 5 charts that represent some variables of the dataset.  The program must display a bar chart for AGE, JOB and MARITAL. Th program must display a Circular chart for DEBT and HOUSING. |
| In: | <None> |
|  |  |
| Out: | 5 charts that represent the behavior of a variable. |
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| **Name:** | R. #5. Classify variable |
| **Summary:** | The program must be able to classify a variable using a decision tree.  For this particular case the program will classify the clients of the bank which are represented by each of the records from the data table that contains the loaded information. The classes of this problem are yes/no. “Yes” if the client will acquire the subscription to the term deposit and “No” if not. |
| In: | a record of the table. |
|  |  |
| Out: | the class of the variable |
|  |  |

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| **Name:** | R. #6. Train a tree |
| **Summary:** | The program must be able to train a tree to using when we should take the predition of some register |
| In: | Dataset |
|  |  |
| Out: | Tree train successful |
|  |  |

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| **Name:** | R. #7. Select the tree |
| **Summary:** | The program must be able to select the tree that we would like to use to give prediction about register |
| In: | <None> |
|  |  |
| Out: | Own tree |
|  | Library tree |

Non Functional requirements:

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| --- | --- |
| **Name:** | NFR. #1. Dataset |
| **Summary:** | The program must only read the selected dataset in order to run properly. |
| In: |  |
|  |  |
| Out: |  |
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| **Name:** | NFR. #2. Programming language |
| **Summary:** | The program must be written in the C# language. |
| In: |  |
|  |  |
| Out: |  |
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| **Name:** | NFR. #3. Framework |
| **Summary:** | The program must be developed using the .NET framework. |
| In: |  |
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| Out: |  |
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| **Name:** | NFR. #4. Tree implementation |
| **Summary:** | The decision tree must be implemented by us, not by using an external library. |
| In: |  |
|  |  |
| Out: |  |
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| **Name:** | NFR. #5. Own implementation of tree |
| **Summary:** | The decision tree must be implemented by us, not by using an external library. |
| In: |  |
|  |  |
| Out: |  |
|  |  |