Assignment 1

Subject: Artificial Intelligence

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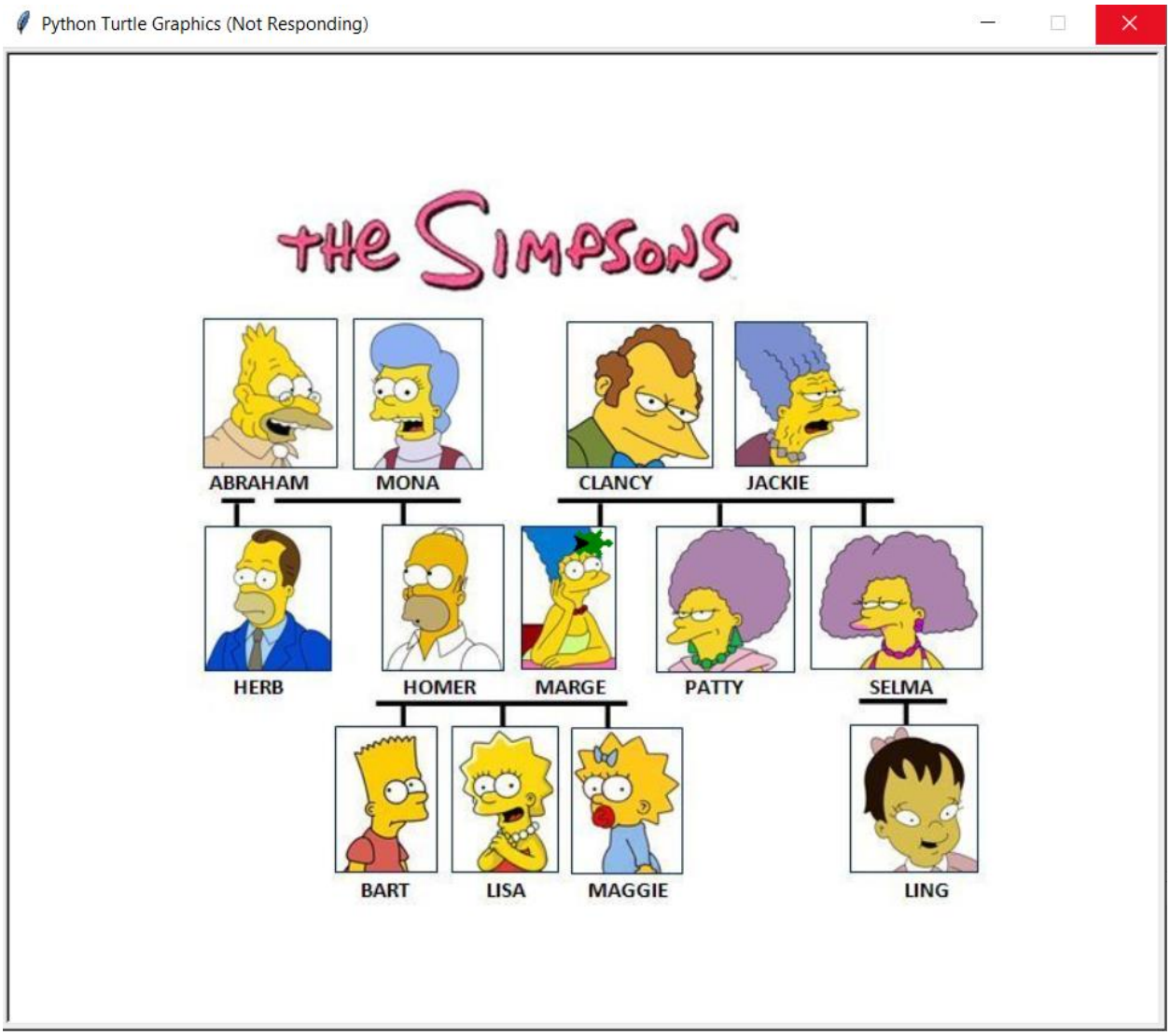
Code Explanation and screenshot:

1. The code is written in python language. The code is written in a jupyter notebook.
2. As mentioned in the problem we must create a family relationship using symbolic AI.
3. We have used pythalog library for the displaying the relations. The knowledgebase method to define the facts and the predicates.
4. The output of the programs gives you 'YES' and 'NO' for the expressions to the queries.
5. If the query asked is correct the output is 'YES', if not it gives 'NO'.

```
In [7]: new_kb.query(pl.Expr("male(abe)"))
Out[7]: ['Yes']

In [8]: new_kb.query(pl.Expr("female(mona)"))
Out[8]: ['Yes']

In [9]: new_kb.query(pl.Expr("mother(marge,lisa)"))
Out[9]: ['Yes']

In [10]: new_kb.query(pl.Expr("father(marge,lisa)"))
Out[10]: ['No']

In [14]: new_kb.query(pl.Expr("sister(lisa,maggie)"))
Out[14]: ['Yes']

In [20]: new_kb.query(pl.Expr("grandfather(abe,bart)"))
Out[20]: ['Yes']
```

```
In [14]: new_kb.query(pl.Expr("sister(lisa,maggie)"))
Out[14]: ['Yes']

In [20]: new_kb.query(pl.Expr("grandfather(abe,bart)"))
Out[20]: ['Yes']

In [24]: new_kb.query(pl.Expr("grandfather(herb,bart)"))
Out[24]: ['No']

In [25]: new_kb.query(pl.Expr("brother(bart,maggie)"))
Out[25]: ['Yes']

In [23]: new_kb.query(pl.Expr("aunt(mona,maggie)"))
Out[23]: ['No']

In [27]: new_kb.query(pl.Expr("aunt(marge,ling)"))
Out[27]: ['Yes']
```

6. Next we have created a turtle screen showing the family.



7. Then we created a pointer to move from the head of the family to the branch using the keyboard.