Using machine learning to predict the chances of success of commercializing alternative crops in rural Malaysia

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INTRODUCTION

- Identifies rural villages with great potential for success in growing a particular underutilised crop.
- Predicts potential of success of underutilised crops based on its similarity to commercial cash crops.
- Takes into account current economic activities in suitable rural area which may lead to Gross Domestic Product* growth.
- This identification is done without actually planting the crop physically which helps to save time and money.

*Gross Domestic Product measures economic performance of a region.

Find Correlation among:
Village Characteristics
- Population
- Average Income

System Characteristics
- Transportation
- Energy
- Precision Agriculture

Crop Characteristics
- Irrigation
- Fertilization
- Soil

Construct

Target GDP

Provide

Government Policy

Compare

Gross Domestic Product Model (GDP)

Label

> Target : Potentially Successful
< Target : Potentially Unsuccessful

Train

Prediction Model with Classifier

Test

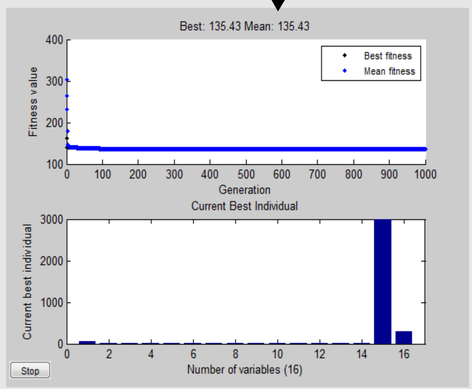
Real Village

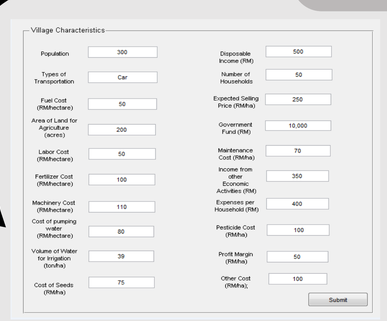
Output

If Class 1 : Potentially Successful Village
If Class 0 : Potentially Unsuccessful Village

```
%x(1)-Age,x(2)-Household Size,x(3)-Household Head Education,
%x(4)-Less than 10 years Education, x(5)-Secondary School Leaving
%x(6)-Intermediate,x(7)-Bachelors and above,x(8)-Age less than 10,
%x(9)-Age 10 to 18,x(10)-Age 18 to 60,x(11)-Age more than 60,
%x(12)-Distance to Road,x(13)-Distance to Primary School,
%x(14)-Distance to Health Post,x(15)-Mountain,x(16)-Terai

C = 10.4 + 0.001*x(1) + 0.104*x(2) + 0.036*x(3)+ 0.044*x(4)...
+ 0.134*x(5) + 0.32*x(6) + 0.312*x(7) - 0.109*x(8) - 0.002*x(9)...
+ 0.033*x(10) + 0.011*x(11) - 0.001*x(12) - 0.06*x(13) - 0.091*x(14)...
- 0.053*x(15) - 0.101*x(16);
GDP = C;
```





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