Problem Chosen	2022 MCM/ICM Summary Sheet	Team Control Number
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Summary

Little introduction on background.

For the first part of the program, our subject is countries since one country has same feature for choosing languages and we only consider the choice of first language and second language for the new-borns, since other subjects have less possiblity of changing their choice of first and second language. For the first language, we set a model with the assumption that the new-born take the native language of the country as their first language. For the second language, we set choose-second-language model, changing perdiction model to assessment model for individual, and we use Monte Carlo Method to change the number of second language speaker to certain languages, and we assign different weight by AHP model to different factors that might affect the choices made by people in different countries. For the second part of the problem, we target at languages and select them by multiple matrices, merging them if possible and locate 6 extra office that can provide most target customoers convenience still with AHP model.

Keywords: 1;

Contents

1 Introduction

cell1 dummy text dummy text dummy text	cell2	cell3
cell1 dummy text dummy text dummy text	cell5	cell6
cell7	cell8	cell9

1.1 Background

This is background.

1.2 The Description Of The Problem

What a dick[2] Link[1]

2 Basic Analysis of the problem

Basic Analysis of the problem

3 List Of Symbols

Symbols

Symbol	Description	Unit
e	an example symbol	m^2

4 General Assumptions

Assumption 1. *This is a assumption.*

5 The Models

;

6 Conclusions

Conclusions

7 Model Evaluation And Improvement

7.1 Strength

7.2 Weakness

7.3 Improvement

References

[1] MS Windows NT kernel description. http://web.archive.org/web/20080207010024/http://www.808multimedia.com/winnt/kernel.htm. Accessed: 2010-09-30.

[2] H Klar Yaggi, Andre B Araujo, and John B McKinlay. Sleep duration as a risk factor for the development of type 2 diabetes. *Diabetes care*, 29(3):657–661, 2006.

Appendices

Appendix A Code for map plotting

```
from mpl_toolkits.basemap import Basemap
import matplotlib.pyplot as plt

m = Basemap(projection='mill',llcrnrlat=-60,urcrnrlat=90,\
                llcrnrlon=-180,urcrnrlon=180,resolution='l')
m.drawcoastlines()
m.drawcountries()
m.drawstates()
m.fillcontinents(color='#04BAE3', lake_color='#FFFFFF')
m.drawmapboundary(fill_color='#FFFFFF')

lat = 30,31,34,33,32
lon = -103,-110,-107,-111,-115


lat2 = 40,33,44,31,30
lon2 = -113,-100,-102,-111,-112

x,y = m(lon,lat)
m.plot(x,y,'ro',markersize=2,alpha=.5)

x,y = m(lon2,lat2)
m.plot(x,y,'go',markersize=2,alpha=.5)

plt.title('Geo Plotting')
plt.show()
# plt.savefig("map1.png")
```