SIMULATION OF AN ELECTION POLLING BOOTH

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SYSTEM MODELLING AND SIMULATION PROJECT

INTRODUCTION:

Elections are an indication of the functioning of a democracy. In this project ARENA simulation software has been used to simulate the process of an electoral booth.

OVERVIEW

Here we are using arena simulation software to simulate working of a polling booth from entry of voters to their exit.
Simulation helps us to know of intricate details which might have been unknown beforehand.

SCOPE

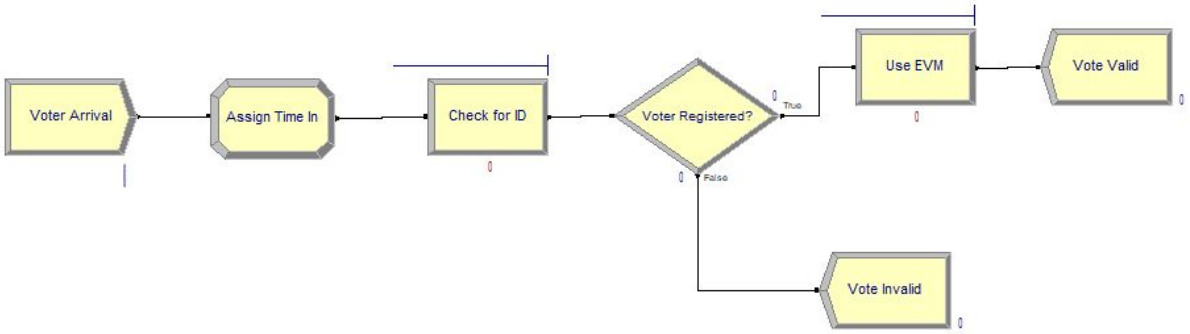
Here we are simulating the working of a polling booth.
Important Processes - Check for id, Check for voter registration, Vote
Important resources - Electoral office 1,evm
Parameter to be considered - #voters,logging in time

OBJECTIVE

T0 minimize voter inconvenience
To improve polling facilities by prior simulation with different parameters

METHODOLOGY

Here the voter enters and the time is ogged in, then id checking takes place and a further check of registration takes place . If its true , they are allowed to use the evm to vote.If not the voter isn't allowed to vote.



ENVIRONMENT

HARDWARE REQUIREMENTS :

Hard drive with 1GB free disk space (or more)
2GB RAM (or more)

Recommended

Intel® dual-core processor (or more), 3GHz or faster
Hard drive with 4GB free disk space (or more)

SOFTWARE REQUIREMENTS:

Arena Simulation Software 14.70.00
Adobe® Acrobat Reader 9.1.0 or later recommended to view documentation

DATA:

For the simulation we generate our on sample data statistics to create the simulation. We use schedule , triangular and exponential distributions to generate different scheduling situations.

CONSTRAINTS:

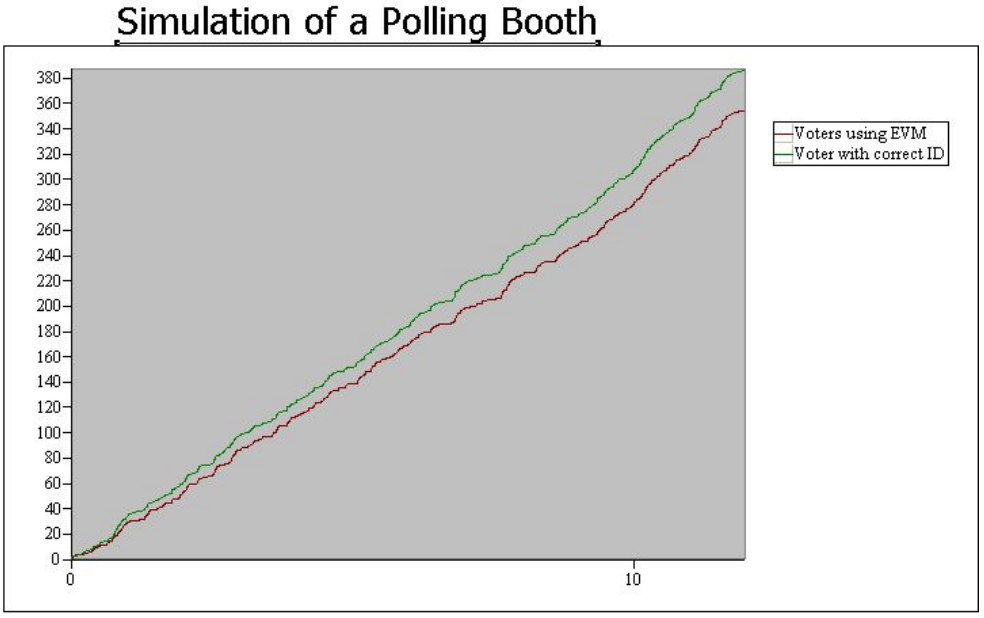
Poor choice of statistical distributions can cause the simulation software to hang or throw runtime errors.
Run time Error when there are more than 100-150 entities in the model.
There should be a bottleneck in the model.

RESULTS:

Results from the report include

Number of voters who voted : 386
Voter waiting time : 0.024 hrs / 90 seconds
Total voter waiting time: 0.034 hrs/ 2 minutes
ID Waiting time : 0.00195 hrs / 7 seconds
EVM Waiting time : 0.00834 / 30 seconds
Instantaneous Utilization (Electoral Officer) : 0.3047
Instantaneous Utilization(EVM) : 0.4975

CONCLUSIONS:



Since the cumulative distributions of voters using EVM and voters clearing ID process do not digress it is fair to say that the polling is being done smoothly without too much delay. Also the maximum users who have been cleared ID and waiting to vote doesn't exceed beyond 30 so voter discomfort doesn't increase.