

# StarCraft Game Outcome Prediction Tool

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## *User Manual*

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	Player 1	Player 2
Alive Units	12	34
Supply Used	5	12
Gas	30	60
Minerals	20	100
Winner %	20.0	80.0

Predict Winner

Application developed using **Python** with packages **Tkinter**, **SkLearn**, **Tensorflow**, **Pandas** and **Numpy**.

## 1. Downloading Source Code

To download the project source code and the winner prediction tool codes visit and <https://github.com/Abhinav-kk/StarCraft-Game-Outcome-Prediction/tree/main> click the green code button and download the zip file or clone the repository.

## 2. Installing Packages

To install the required packages to run the StarCraft winner prediction tool navigate to Winner Prediction Tool folder and use the following command in terminal

```
pip install -r requirements.txt
```

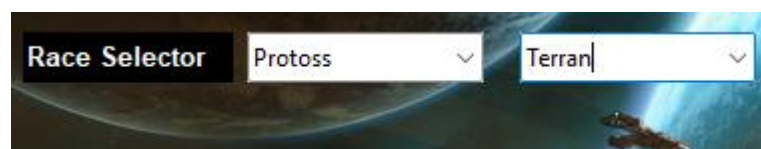
## 3. Running the application

To run the application use the following command

```
python app_main.py
```

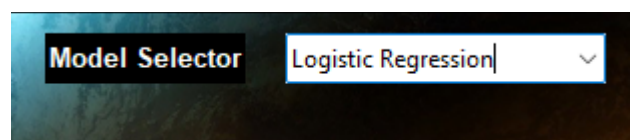
## 4. Selecting Races of Player

To select the races of both players click the drop down menu and select from one of the 3 races; Protoss, Terran or Zerg.



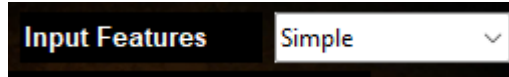
## 5. Selecting Machine Learning Model

To select the machine learning models to use click the drop down menu for model selector and choose from one of the 6 models available.



## 6. Selecting Feature Type

To select the input features, choose one of the 3 options from the input features drop down.

A screenshot of a web interface showing a dropdown menu labeled 'Input Features'. The dropdown is open, and the word 'Simple' is selected and displayed in the input field. A small downward arrow is visible on the right side of the dropdown box.

The following are the different features available for each input type:

### 1. Simple

- Alive Units
- Supply Used
- Gas
- Minerals

### 2. Game State

- Map Name (Dropdown with search)
- Map Width (Dropdown)
- Map Height (Dropdown)
- Effective Actions Per Minute
- Effective Command Count
- Total Units
- Alive Units

### 3. CSV

Single row representing the game state at a frame using the text area input field.

## 7. Inputting Features

After choosing the appropriate feature type and the interface will show entry boxes, drop down boxes or text areas depending on the feature selected. For entry boxes those features use integers and drop-down values using any of the options available.

## 8. Getting Prediction

To get the prediction from the model click Predict Winner button. The winning percentage for each player will be shown in the respective inputs for both player 1 and player 2.