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AP CSP, Period 1

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Project 206: NBA DataBase Lab 1

Index:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>DataNBA</title>
    <script src="libraries/p5.js"
type="text/javascript"></script>
    <script src="libraries/p5.dom.js"
type="text/javascript"></script>
    <script src="libraries/p5.sound.js"
type="text/javascript"></script>
    <script src="sketch.js" type="text/javascript"></script>
    <script src="players.js" type="text/javascript"></script>
    <script src="stats.js" type="text/javascript"></script>
    <style> body {padding: 0; margin: 0;} canvas
{vertical-align: top;} </style>
  </head>
  <body>
  </body>
</html>
```

Sketch:

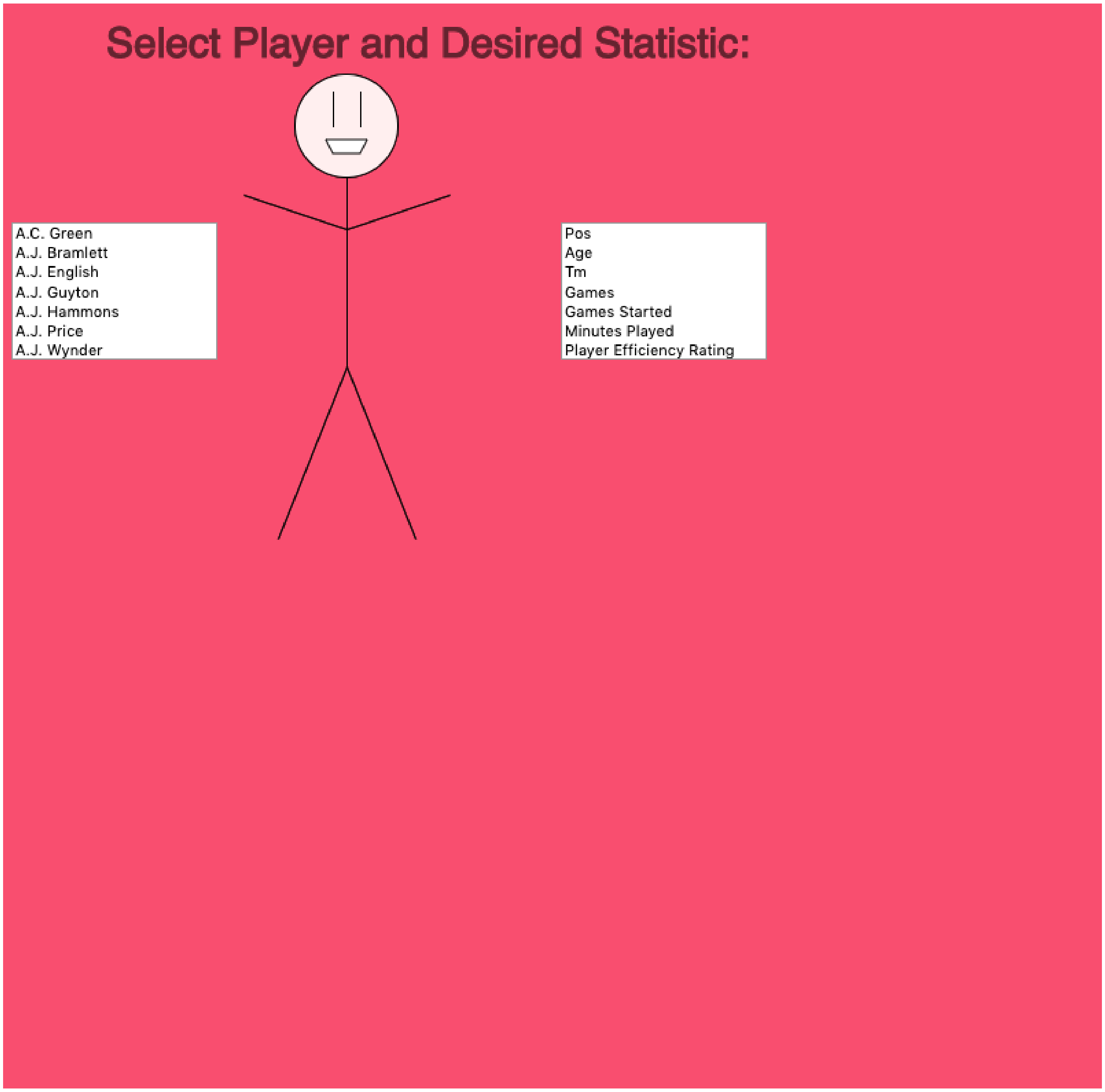
```
//  Ziggy Sheynin
//   Project206 Database Project
//  This is a comment
//  The setup function function is called once when your program
begins
var statsArray = []; //initializes statsArray
function setup() {
  var cnv = createCanvas(800, 800);
  cnv.position((windowWidth-width)/2, 30);
  background(5, 5, 5);
  loadStats();
  createPlayerSelectionList();
  createStatSelectionList();
} //end setup

function draw() {
  fill(5);
  textSize(30);
  text('Select Player and Desired Statistic:', + 75, 50); //writes text on initial screen
  drawStickFigure(); //draws the player
  getSelectedPlayers(); //calls function to create players list box
  getSelectedStat(); //calls function to create stats list box

  for(var i = 0; i < chosenPlayer.length; i++){
    loadPlayerStats(chosenPlayer[i]);
  } //end for for putting players into array

  aggregateStats(chosenStat[0]);
  getYears(); //for graph
  toString(); //turns all variables into the same type
  getSmall(); //for graphing values
  getLarge();
  drawGraph(); //function to make the graph
}

function drawStickFigure(){ //function to create player
  fill(255);
  stroke(5);
  background(230, 100, 120, 100); //background
  line(250, 100, 250, 275); //body
  fill(255, 240, 240); //head color
  ellipse(250, 100, 75, 75); //head
  line(240, 75, 240, 100); //left eye
  line(260, 75, 260, 100); //right eye
  fill(255);
  line(250, 175, 175, 150); //left arm
  line(250, 175, 325, 150); //right arm
  line(250, 275, 200, 400); //left leg
  line(250, 275, 300, 400); //right leg
  quad(235, 110, 240, 120, 260, 120, 265, 110); //mouth

}//end function drawStickFigure\

function createPlayerSelectionList() {
  playerSel = createSelect(true);
  playerSel.position(200, 200); // locate at 270,40 in canvas
coordinates
  playerSel.size(150, 100);
  for(var i = 0; i < players.length; i++){
    playerSel.option(players[i]);
  }
} //from Mr. Schulman
```

```
//end createPlayerSelectionList


function createStatSelectionList(){
  statSel = createSelect(true);
  statSel.position(600, 200);
  statSel.size(150, 100);
  for(var i = 3; i < statNames.length; i++){
    statSel.option(statNames[i]);
  }
}//from Mr. Schulman
//end createStatSelectionList


// abstract the UI control away, put the chosen player(s) in the
array chosenPlayers
function getSelectedPlayers() {
  chosenPlayer = [];
  for (var i = 0; i < playerSel.elt.selectedOptions.length; i++)
{
    chosenPlayer.push(playerSel.elt.selectedOptions[i].value);
  }
} //end getSelectedPlayer
//from Mr. Schulman
```

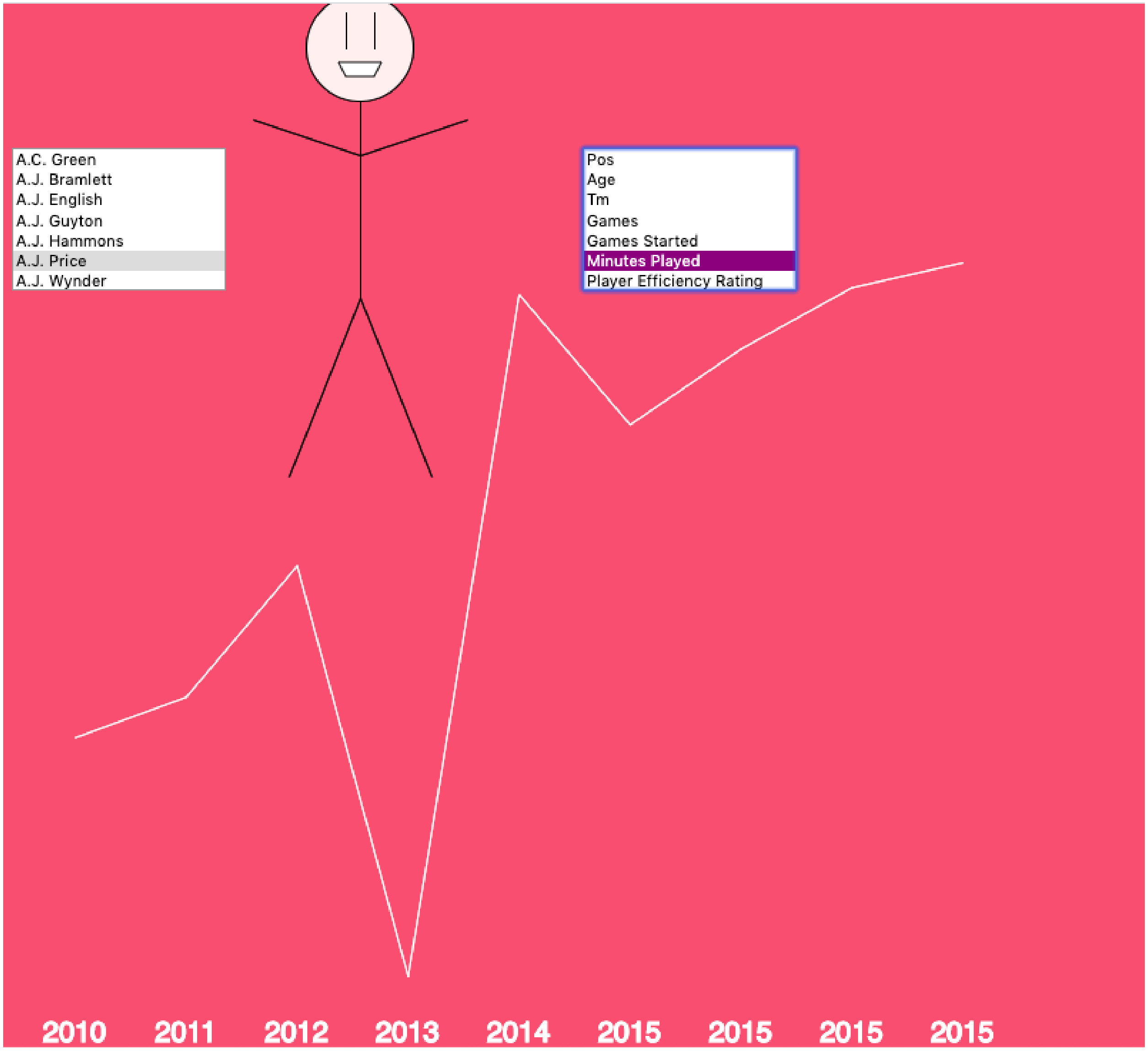
```
function getSelectedStat(){
  chosenStat = [];
  for(var i = 0; i < statSel.elt.selectedOptions.length; i++){
    for(var j = 0; j < statNames.length ; j++){
      if(statSel.elt.selectedOptions[i].value === statNames[j]){
        chosenStat.push(j);
      }
    }
  } //got help on this as well
}//end getSelectedStat


// find the stats for the chosen player in the stats table.
result is an array of table rows, one for each year the player
was in the league
function loadPlayerStats(player) {
  // column 2 has the player's name in the stats table
  statsArray = stats.findRows(player, 2);
  if (statsArray.length === 0) {
    // try adding an '*'
    statsArray = stats.findRows(player+ "*", 2);
  }
} //end loadPlayerStats
//from Mr. Schulman
```

```
// collect stats into arrays for generic approach to graphing
function aggregateStats(stat){ //function to put all stats into
one array
  collectStats = []; //collects the values for each statistic in
the database
  for(var i = 0; i<statsArray.length; i++) {
    collectStats.push(statsArray[i].get(stat));
  }
} //end aggregateStats
////from Mr. Schulman

function getYears(){ //for x-axis of graph
  years = [];
  for(var i = 0; i<statsArray.length; i++) {
    years.push(statsArray[i].get(1));
  }
} //end getYears

function getSmall(){ //helps to create graph that fits on screen
  smallest = collectStats[0];
  for(var i = 0; i < collectStats.length; i++){
    if (smallest > collectStats[i]) {
      smallest = collectStats[i]; //traverses array to find the
smallest value to know how far down to start the graph
    }
  }
} //end getSmall

function getLarge(){//helps to create graph that fits on screen
  largest = collectStats[0];
  for(var i = 0; i < collectStats.length; i++){
    if (largest < collectStats[i]) {
      largest = collectStats[i];//traverses array to find the
largest value to know how far up to end the graph
    }
  }
}//end getLarge

function toString(){ //turns all data into same type
  for(var i = 0; i < collectStats.length; i++){
    collectStats[i] = parseInt(collectStats[i], 10);
  }
}//end toString

function drawGraph(){
  var x1, y1, x2, y2;

  for(var i = 0; i < collectStats.length; i++){

    x1 = i*(width-100)/collectStats.length + 50;

    y1 = map(collectStats[i], smallest, largest, 250, 750);

    x2 = (i+1)*(width-100)/collectStats.length + 50;

    y2 = map(collectStats[i+1], smallest, largest, 250, 750);

    stroke(255, 255, 255);

    line(x1, y1, x2, y2);

    textSize(20);

    textAlign(CENTER, BOTTOM);

    text(years[i], x1, 800);

  }

}//end drawGraph
```

Screenshots:



Select Player and Desired Statistic:


A.C. Green
A.J. Bramlett
A.J. English
A.J. Guyton
A.J. Hammons
A.J. Price
A.J. Wynder
Pos
Age
Tm
Games
Games Started
Minutes Played
Player Efficiency Rating
2010
2011
2012
2013
2014
2015
2015
2015
2015