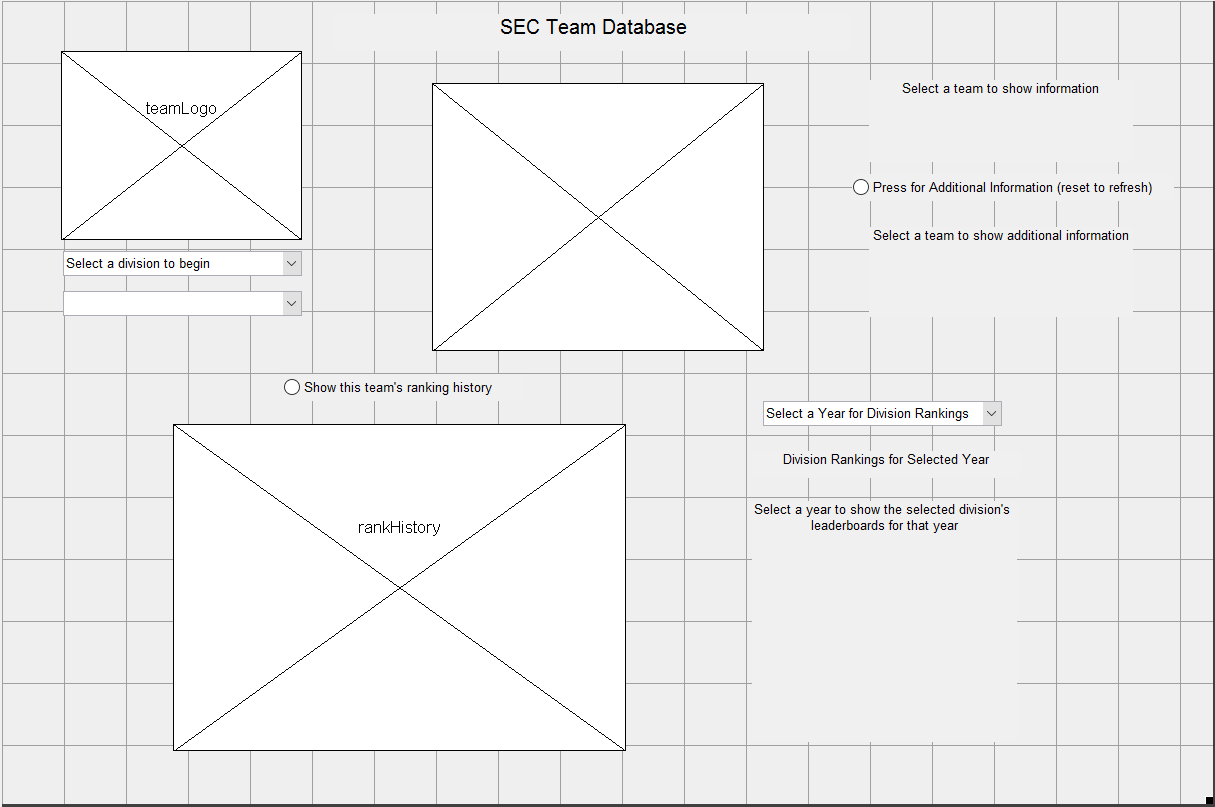
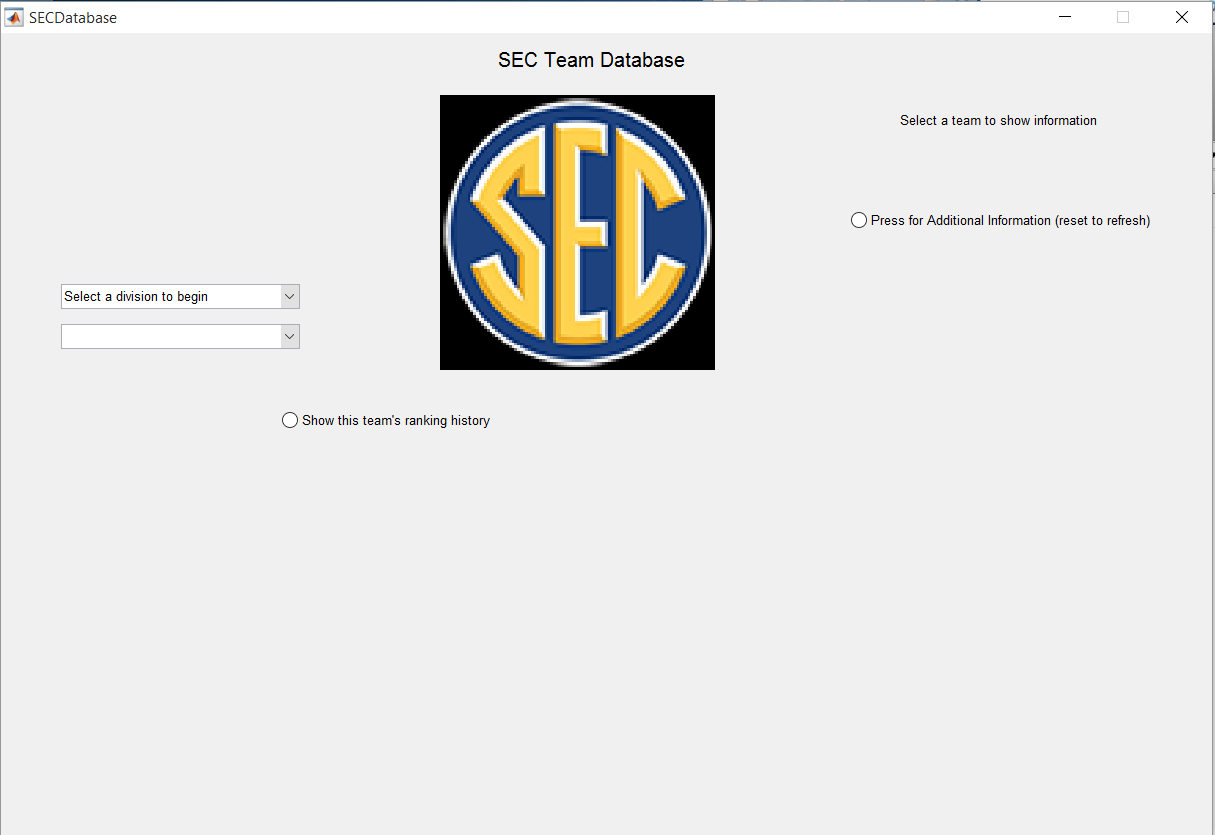
Rofael Aleezada

GUI Project

1. 

Template of final SECDatabase GUI

1. 

The SECDatabase GUI upon first starting the program

1. The full code of SECDatabase.m

function varargout = SECDatabase(varargin)

% SECDATABASE MATLAB code for SECDatabase.fig

% SECDATABASE, by itself, creates a new SECDATABASE or raises the existing

% singleton\*.

%

% H = SECDATABASE returns the handle to a new SECDATABASE or the handle to

% the existing singleton\*.

%

% SECDATABASE('CALLBACK',hObject,eventData,handles,...) calls the local

% function named CALLBACK in SECDATABASE.M with the given input arguments.

%

% SECDATABASE('Property','Value',...) creates a new SECDATABASE or raises the

% existing singleton\*. Starting from the left, property value pairs are

% applied to the GUI before SECDatabase\_OpeningFcn gets called. An

% unrecognized property name or invalid value makes property application

% stop. All inputs are passed to SECDatabase\_OpeningFcn via varargin.

%

% \*See GUI Options on GUIDE's Tools menu. Choose "GUI allows only one

% instance to run (singleton)".

%

% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help SECDatabase

% Last Modified by GUIDE v2.5 28-Nov-2015 17:48:15

% Begin initialization code - DO NOT EDIT

gui\_Singleton = 1;

gui\_State = struct('gui\_Name', mfilename, ...

'gui\_Singleton', gui\_Singleton, ...

'gui\_OpeningFcn', @SECDatabase\_OpeningFcn, ...

'gui\_OutputFcn', @SECDatabase\_OutputFcn, ...

'gui\_LayoutFcn', [] , ...

'gui\_Callback', []);

if nargin && ischar(varargin{1})

gui\_State.gui\_Callback = str2func(varargin{1});

end

if nargout

[varargout{1:nargout}] = gui\_mainfcn(gui\_State, varargin{:});

else

gui\_mainfcn(gui\_State, varargin{:});

end

% End initialization code - DO NOT EDIT

% --- Executes just before SECDatabase is made visible.

function SECDatabase\_OpeningFcn(hObject, eventdata, handles, varargin)

% This function has no output args, see OutputFcn.

% hObject handle to figure

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% varargin command line arguments to SECDatabase (see VARARGIN)

% Choose default command line output for SECDatabase

handles.output = hObject;

% Update handles structure

guidata(hObject, handles);

% Cell Arrays containing teams for each division

secEastList = {'University of Florida','University of Georgia','University of Kentucky','University of Missouri','University of South Carolina','University of Tennessee','Vanderbilt University'};

secWestList = {'University of Alabama','University of Arkansas','Auburn University','Louisiana State University','University of Mississippi','Mississippi State University','Texas A&M University'};

% Cell Arrays containing data that will be used

teamList = {'University of Alabama','University of Arkansas','Auburn University','University of Florida','University of Georgia','University of Kentucky','Louisiana State University','University of Mississippi','Mississippi State University','University of Missouri','University of South Carolina','University of Tennessee','Texas A&M University','Vanderbilt University'};

locationList = {'Tuscaloosa, AL','Fayetteville, AK','Auburn, AL','Gainesville, FL','Athens, GA','Lexington, KY','Baton Rouge, LA','Oxford, MS','Starkville, MS','Columbia, MO','Columbia, SC','Knoxville, TN','College Station, TX','Nashville, TN'};

foundedList = {1831,1871,1856,1853,1785,1865,1860,1848,1878,1839,1801,1794,1876,1873};

enrollmentList = {37100,26301,25912,51474,35197,29385,31527,23096,20138,35425,31980,27410,62185,12686};

nicknameList = {'Crimson Tide','Razorbacks','Tigers','Gators','Bulldogs','Wildcats','Tigers','Rebels','Bulldogs','Tigers','Gamecocks','Volunteers','Aggies','Commodores'};

joinedList = {1932,1991,1932,1932,1932,1932,1932,1932,1932,2012,1991,1932,2012,1932};

logoList = {'alabama.png','arkansas.png','auburn.png','florida.png','georgia.png','kentucky.png','lsu.png','olemiss.png','miss\_state.png','missouri.png','southcarolina.png','tennessee.png','texas\_am.png','vanderbilt.png'};

% Populates a structure containing the data that will be used

for i = 1:14

secData(i) = struct('name',teamList(i),'location',locationList(i),'founded',foundedList(i),'enrollment',enrollmentList(i),'nickname',nicknameList(i),'joined',joinedList(i),'logo',logoList(i));

end

% Cell array of leaderboard info that will be used

handles.secEast2014 = {'University of Missouri','University of Georgia','University of Florida','University of Tennessee','University of South Carolina','University of Kentucky','Vanderbilt University'};

handles.secEast2013 = {'University of Missouri','University of South Carolina','University of Georgia','Vanderbilt University','University of Florida','University of Tennessee','University of Kentucky'};

handles.secEast2012 = {'University of Georgia','University of Florida','University of South Carolina','Vanderbilt University','University of Missouri','University of Tennessee','University of Kentucky'};

handles.secEast2011 = {'University of Georgia','University of South Carolina','University of Florida','Vanderbilt University','University of Kentucky','University of Tennessee',''};

handles.secEast2010 = {'University of South Carolina','University of Florida','University of Georgia','University of Tennessee','University of Kentucky','Vanderbilt University',''};

handles.secEast2009 = {'University of Florida','University of Georgia','University of Tennessee','University of Kentucky','University of South Carolina','Vanderbilt University',''};

handles.secEast2008 = {'University of Florida','University of Georgia','University of South Carolina','Vanderbilt University','University of Tennessee','University of Kentucky',''};

handles.secEast2007 = {'University of Georgia','University of Tennessee','University of Florida','University of Kentucky','University of South Carolina','Vanderbilt University',''};

handles.secEast2006 = {'University of Florida','University of Tennessee','University of Georgia','University of Kentucky','University of South Carolina','Vanderbilt University',''};

handles.secEast2005 = {'University of Georgia','University of Florida','University of South Carolina','University of Tennessee','Vanderbilt University','University of Kentucky',''};

handles.secEast2004 = {'University of Tennessee','University of Georgia','University of Florida','University of South Carolina','University of Kentucky','Vanderbilt University',''};

handles.secWest2014 = {'University of Alabama','Mississippi State University','University of Mississippi','Auburn University','Louisiana State University','Texas A&M University','University of Arkansas'};

handles.secWest2013 = {'Auburn University','University of Alabama','Louisiana State University','Texas A&M University','Mississippi State University','University of Mississippi','University of Arkansas'};

handles.secWest2012 = {'University of Alabama','Louisiana State University','Texas A&M University','Mississippi State University','University of Mississippi','University of Arkansas','Auburn University'};

handles.secWest2011 = {'Louisiana State University','University of Alabama','University of Arkansas','Auburn University','Mississippi State University','University of Mississippi',''};

handles.secWest2010 = {'Auburn University','University of Arkansas','Louisiana State University','University of Alabama','Mississippi State University','University of Mississippi',''};

handles.secWest2009 = {'University of Alabama','Louisiana State University','University of Mississippi','University of Arkansas','Auburn University','Mississippi State University',''};

handles.secWest2008 = {'University of Alabama','University of Mississippi','Louisiana State University','University of Arkansas','Auburn University','Mississippi State University',''};

handles.secWest2007 = {'Louisiana State University','Auburn University','University of Alabama','University of Arkansas','Mississippi State University','University of Mississippi',''};

handles.secWest2006 = {'University of Arkansas','Auburn University','Louisiana State University','University of Alabama','University of Mississippi','Mississippi State University',''};

handles.secWest2005 = {'Auburn University','Louisiana State University','University of Alabama','University of Arkansas','Mississippi State University','University of Mississippi',''};

handles.secWest2004 = {'Auburn University','Louisiana State University','University of Alabama','University of Arkansas','University of Mississippi','Mississippi State University',''};

% Cell array creating leaderboard history for each division

secEastRanks = {handles.secEast2014,handles.secEast2013,handles.secEast2012,handles.secEast2011,handles.secEast2010,handles.secEast2009,handles.secEast2008,handles.secEast2007,handles.secEast2006,handles.secEast2005,handles.secEast2004};

secWestRanks = {handles.secWest2014,handles.secWest2013,handles.secWest2012,handles.secWest2011,handles.secWest2010,handles.secWest2009,handles.secWest2008,handles.secWest2007,handles.secWest2006,handles.secWest2005,handles.secWest2004};

% UIWAIT makes SECDatabase wait for user response (see UIRESUME)

% uiwait(handles.figure1);

% Allows variables to be accessed outside of this function

handles.secEastList = secEastList;

handles.secWestList = secWestList;

handles.secData = secData;

handles.secEastRanks = secEastRanks;

handles.secWestRanks = secWestRanks;

guidata(hObject, handles); % Updates handles with the new variables

% --- Outputs from this function are returned to the command line.

function varargout = SECDatabase\_OutputFcn(hObject, eventdata, handles)

% varargout cell array for returning output args (see VARARGOUT);

% hObject handle to figure

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure

varargout{1} = handles.output;

% --- Executes on selection change in teamSelect.

function teamSelect\_Callback(hObject, eventdata, handles)

% hObject handle to teamSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns teamSelect contents as cell array

% contents{get(hObject,'Value')} returns selected item from teamSelect

% Gets the selected team and allows it to be referenecd in other functions

str = get(hObject, 'String');

handles.selectedTeam = str;

val = get(hObject, 'Value');

handles.selectedTeamValue = val;

% Updates the team logo based on the selected team

axes(handles.teamLogo);

for i = 1:14

if strcmp(str{val},handles.secData(i).name) % Compares selected team name to a name in the structure

imshow(handles.secData(i).logo); % Gets the string containing the file name of the logo based on the selected team name

end

end

% Updates the graph containing information on the rank history

axes(handles.rankHistory);

x = [2014,2013,2012,2011,2010,2009,2008,2007,2006,2005,2004];

ranks = [0,0,0,0,0,0,0,0,0,0,0];

if strcmp(handles.division{handles.divisionval},'Eastern Division') % Differentiates between divisions

divbase = handles.secEastRanks;

else

divbase = handles.secWestRanks;

end

for i = 1:11

for j = 1:7

if strcmp(str{val},divbase{i}(j))

ranks(i) = j; % finds the team's position in each year's leaderboard, returns that as the rank for that year

end

end

end

negranks = -ranks; % Allows the ranks to be shown in inverse order (1 on top)

handles.showData = plot(x,negranks,'\*'); % made a variable so it can be hidden by a button

axis([2004,2014,-7,1]);

set(gca,'YTickLabelMode','Manual'); % Defines the scale and hides the Y values

set(gca,'YTick',[]);

% Shows the team rank next to the point on the graph, made variable to

% hide when button is selected

handles.showText1 = text(2014,negranks(1),strcat('\leftarrow',num2str(ranks(1))));

handles.showText2 = text(2013,negranks(2),strcat('\leftarrow',num2str(ranks(2))));

handles.showText3 = text(2012,negranks(3),strcat('\leftarrow',num2str(ranks(3))));

handles.showText4 = text(2011,negranks(4),strcat('\leftarrow',num2str(ranks(4))));

handles.showText5 = text(2010,negranks(5),strcat('\leftarrow',num2str(ranks(5))));

handles.showText6 = text(2009,negranks(6),strcat('\leftarrow',num2str(ranks(6))));

handles.showText7 = text(2008,negranks(7),strcat('\leftarrow',num2str(ranks(7))));

handles.showText8 = text(2007,negranks(8),strcat('\leftarrow',num2str(ranks(8))));

handles.showText9 = text(2006,negranks(9),strcat('\leftarrow',num2str(ranks(9))));

handles.showText10 = text(2005,negranks(10),strcat('\leftarrow',num2str(ranks(10))));

handles.showText11 = text(2004,negranks(11),strcat('\leftarrow',num2str(ranks(11))));

% Hides all the data (button showing data is off by default)

set(gca,'Visible','Off');

set(handles.showData,'Visible','Off')

set([handles.showText1,handles.showText2,handles.showText3,handles.showText4,handles.showText5,handles.showText6,handles.showText7,handles.showText8,handles.showText9,handles.showText10,handles.showText11],'Visible','Off');

% Populates cell array that contains info that will be shown

for i = 1:14

if strcmp(str{val},handles.secData(i).name)

handles.infoBox(1) = strcat(handles.defaultInfoBox(1),handles.secData(i).name);

handles.infoBox(2) = strcat(handles.defaultInfoBox(2),handles.secData(i).location);

handles.infoBox(3) = strcat(handles.defaultInfoBox(3),handles.secData(i).nickname);

end

end

% Displays cell array data in text box

set(handles.teamInformation,'String',handles.infoBox);

% Resets displayed information when something else is selected

str = get(hObject, 'String');

handles.selectedTeam = str;

val = get(hObject, 'Value');

handles.selectedTeamValue = val;

handles.infoBox = handles.defaultInfoBox;

% Updates handles for new/modified variables

guidata(hObject, handles);

% --- Executes during object creation, after setting all properties.

function teamSelect\_CreateFcn(hObject, eventdata, handles)

% hObject handle to teamSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% Hint: popupmenu controls usually have a white background on Windows.

% See ISPC and COMPUTER.

if ispc && isequal(get(hObject,'BackgroundColor'), get(0,'defaultUicontrolBackgroundColor'))

set(hObject,'BackgroundColor','white');

end

% Defines the cell arrays that will be used to hold the displayed data

handles.defaultInfoBox = {'Name: ', 'Location: ', 'Nickname: '};

handles.infoBox = handles.defaultInfoBox;

handles.defaultAdditionalInfoBox = {'Founded: ', 'Enrollment: ', 'Joined SEC: '};

handles.additionalInfoBox = handles.defaultAdditionalInfoBox;

guidata(hObject, handles);

% --- Executes on button press in showRank.

function showRank\_Callback(hObject, eventdata, handles)

% hObject handle to showRank (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of showRank

% Allows modification of rankHistory axis

axes(handles.rankHistory);

% Determines whether or not button is pressed

handles.rankShowButton = get(hObject,'Value');

% If button is pressed, show info. Else, hide info.

if get(hObject,'Value') == 1

set(handles.rankHistory,'Visible','On');

set(handles.yearLeaderboardSelect,'Visible','On');

set(handles.teamRankCompare,'Visible','On');

set(handles.leaderboardTitle,'Visible','On');

set(gca,'Visible','On');

set(handles.showData,'Visible','On')

set([handles.showText1,handles.showText2,handles.showText3,handles.showText4,handles.showText5,handles.showText6,handles.showText7,handles.showText8,handles.showText9,handles.showText10,handles.showText11],'Visible','On');

else

set(handles.rankHistory,'Visible','Off');

set(handles.yearLeaderboardSelect,'Visible','Off');

set(handles.teamRankCompare,'Visible','Off');

set(handles.leaderboardTitle,'Visible','Off');

set(gca,'Visible','Off');

set(handles.showData,'Visible','Off')

set([handles.showText1,handles.showText2,handles.showText3,handles.showText4,handles.showText5,handles.showText6,handles.showText7,handles.showText8,handles.showText9,handles.showText10,handles.showText11],'Visible','Off');

end

% --- Executes on selection change in yearLeaderboardSelect.

function yearLeaderboardSelect\_Callback(hObject, eventdata, handles)

% hObject handle to yearLeaderboardSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns yearLeaderboardSelect contents as cell array

% contents{get(hObject,'Value')} returns selected item from yearLeaderboardSelect

% Gets the selected string in the dropdown box, the selected division from

% divisionSelect, and defines variables for comparison

str = get(hObject,'String');

val = get(hObject,'Value');

division = handles.division;

divisionval = handles.divisionval;

east = 'Eastern Division';

west = 'Western Division';

% Finds matching year and division to display correct leaderboards

if strcmp(str{val},'2014') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2014)

set(handles.leaderboardTitle,'String','2014 SEC Eastern Rankings')

elseif strcmp(str{val},'2013') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2013)

set(handles.leaderboardTitle,'String','2013 SEC Eastern Rankings')

elseif strcmp(str{val},'2012') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2012)

set(handles.leaderboardTitle,'String','2012 SEC Eastern Rankings')

elseif strcmp(str{val},'2011') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2011)

set(handles.leaderboardTitle,'String','2011 SEC Eastern Rankings')

elseif strcmp(str{val},'2010') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2010)

set(handles.leaderboardTitle,'String','2010 SEC Eastern Rankings')

elseif strcmp(str{val},'2009') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2009)

set(handles.leaderboardTitle,'String','2009 SEC Eastern Rankings')

elseif strcmp(str{val},'2008') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2008)

set(handles.leaderboardTitle,'String','2008 SEC Eastern Rankings')

elseif strcmp(str{val},'2007') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2007)

set(handles.leaderboardTitle,'String','2007 SEC Eastern Rankings')

elseif strcmp(str{val},'2006') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2006)

set(handles.leaderboardTitle,'String','2006 SEC Eastern Rankings')

elseif strcmp(str{val},'2005') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2005)

set(handles.leaderboardTitle,'String','2005 SEC Eastern Rankings')

elseif strcmp(str{val},'2004') && strcmp(division{divisionval},east)

set(handles.teamRankCompare,'String',handles.secEast2004)

set(handles.leaderboardTitle,'String','2004 SEC Eastern Rankings')

elseif strcmp(str{val},'2014') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2014)

set(handles.leaderboardTitle,'String','2014 SEC Western Rankings')

elseif strcmp(str{val},'2013') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2013)

set(handles.leaderboardTitle,'String','2013 SEC Western Rankings')

elseif strcmp(str{val},'2012') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2012)

set(handles.leaderboardTitle,'String','2012 SEC Western Rankings')

elseif strcmp(str{val},'2011') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2011)

set(handles.leaderboardTitle,'String','2011 SEC Western Rankings')

elseif strcmp(str{val},'2010') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2010)

set(handles.leaderboardTitle,'String','2010 SEC Western Rankings')

elseif strcmp(str{val},'2009') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2009)

set(handles.leaderboardTitle,'String','2009 SEC Western Rankings')

elseif strcmp(str{val},'2008') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2008)

set(handles.leaderboardTitle,'String','2008 SEC Western Rankings')

elseif strcmp(str{val},'2007') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2007)

set(handles.leaderboardTitle,'String','2007 SEC Western Rankings')

elseif strcmp(str{val},'2006') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2006)

set(handles.leaderboardTitle,'String','2006 SEC Western Rankings')

elseif strcmp(str{val},'2005') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2005)

set(handles.leaderboardTitle,'String','2005 SEC Western Rankings')

elseif strcmp(str{val},'2004') && strcmp(division{divisionval},west)

set(handles.teamRankCompare,'String',handles.secWest2004)

set(handles.leaderboardTitle,'String','2004 SEC Western Rankings')

end

% --- Executes during object creation, after setting all properties.

function yearLeaderboardSelect\_CreateFcn(hObject, eventdata, handles)

% hObject handle to yearLeaderboardSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% Hint: popupmenu controls usually have a white background on Windows.

% See ISPC and COMPUTER.

if ispc && isequal(get(hObject,'BackgroundColor'), get(0,'defaultUicontrolBackgroundColor'))

set(hObject,'BackgroundColor','white');

end

% --- Executes on button press in showAdditionalInfo.

function showAdditionalInfo\_Callback(hObject, eventdata, handles)

% hObject handle to showAdditionalInfo (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of showAdditionalInfo

% Sets visibiliy additional information box based on selection

if get(hObject,'Value') == 1

set(handles.additionalTeamInformation,'Visible','On');

else

set(handles.additionalTeamInformation,'Visible','Off');

end

% Populates cell array with information based on the selected team

for i = 1:14

if strcmp(handles.selectedTeam{handles.selectedTeamValue},handles.secData(i).name)

handles.additionalInfoBox(1) = strcat(handles.defaultAdditionalInfoBox(1),num2str(handles.secData(i).founded));

handles.additionalInfoBox(2) = strcat(handles.defaultAdditionalInfoBox(2),num2str(handles.secData(i).enrollment));

handles.additionalInfoBox(3) = strcat(handles.defaultAdditionalInfoBox(3),num2str(handles.secData(i).joined));

end

end

% Sets information box to display data

set(handles.additionalTeamInformation,'String',handles.additionalInfoBox);

% --- Executes on selection change in divisionSelect.

function divisionSelect\_Callback(hObject, eventdata, handles)

% hObject handle to divisionSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns divisionSelect contents as cell array

% contents{get(hObject,'Value')} returns selected item from divisionSelect

% Gets the selected division and makes it available in other functions

str = get(hObject, 'String');

val = get(hObject, 'Value');

handles.division = str;

handles.divisionval = val;

% Changes the team selection list based on the selected region

switch str{val}

case 'Select a division to begin'

set(handles.teamSelect,'String','Please select a division');

set(handles.teamSelect,'Value',1);

case 'Eastern Division'

set(handles.teamSelect,'String',handles.secEastList);

newSize = size(handles.secEastList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

case 'Western Division'

set(handles.teamSelect,'String',handles.secWestList);

newSize = size(handles.secWestList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

end

guidata(hObject, handles);

% --- Executes during object creation, after setting all properties.

function divisionSelect\_CreateFcn(hObject, eventdata, handles)

% hObject handle to divisionSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% Hint: popupmenu controls usually have a white background on Windows.

% See ISPC and COMPUTER.

if ispc && isequal(get(hObject,'BackgroundColor'), get(0,'defaultUicontrolBackgroundColor'))

set(hObject,'BackgroundColor','white');

end

% --- Executes during object creation, after setting all properties.

function teamLogo\_CreateFcn(hObject, eventdata, handles)

% hObject handle to teamLogo (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% Hint: place code in OpeningFcn to populate teamLogo

% Hides the axes of the team logo axis until a team is selected

axes(hObject);

axis off;

% --- Executes during object creation, after setting all properties.

function rankHistory\_CreateFcn(hObject, eventdata, handles)

% hObject handle to rankHistory (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% Hint: place code in OpeningFcn to populate rankHistory

% Sets the default conditions of the rankHistory axis

axes(hObject);

axis([2004,2014,-7,0]);

set(gca,'YTickLabelMode','Manual');

set(gca,'YTick',[]);

% --- Executes during object creation, after setting all properties.

function teamInformation\_CreateFcn(hObject, eventdata, handles)

% hObject handle to teamInformation (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% --- Executes during object creation, after setting all properties.

function secLogo\_CreateFcn(hObject, eventdata, handles)

% hObject handle to secLogo (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% Hint: place code in OpeningFcn to populate secLogo

axes(hObject);

secLogo = imread('sec.png');

image(secLogo);

axis off;

axis image;

1. 2. Read in an image of SECLogo and to my GUI

% --- Executes during object creation, after setting all properties.

function secLogo\_CreateFcn(hObject, eventdata, handles)

% hObject handle to secLogo (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles empty - handles not created until after all CreateFcns called

% Hint: place code in OpeningFcn to populate secLogo

axes(hObject);

secLogo = imread('sec.png');

image(secLogo);

axis off;

axis image;

3. Display data of rank over the last 10 years as a graph or chart

axes(handles.rankHistory);

x = [2014,2013,2012,2011,2010,2009,2008,2007,2006,2005,2004];

ranks = [0,0,0,0,0,0,0,0,0,0,0];

if strcmp(handles.division{handles.divisionval},'Eastern Division') % Differentiates between divisions

divbase = handles.secEastRanks;

else

divbase = handles.secWestRanks;

end

for i = 1:11

for j = 1:7

if strcmp(str{val},divbase{i}(j))

ranks(i) = j; % finds the team's position in each year's leaderboard, returns that as the rank for that year

end

end

end

negranks = -ranks; % Allows the ranks to be shown in inverse order (1 on top)

handles.showData = plot(x,negranks,'\*'); % made a variable so it can be hidden by a button

4. Use a logic statement to determine which team list to use based on the selected division

% --- Executes on selection change in divisionSelect.

function divisionSelect\_Callback(hObject, eventdata, handles)

% hObject handle to divisionSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns divisionSelect contents as cell array

% contents{get(hObject,'Value')} returns selected item from divisionSelect

% Gets the selected division and makes it available in other functions

str = get(hObject, 'String');

val = get(hObject, 'Value');

handles.division = str;

handles.divisionval = val;

% Changes the team selection list based on the selected region

switch str{val}

case 'Select a division to begin'

set(handles.teamSelect,'String','Please select a division');

set(handles.teamSelect,'Value',1);

case 'Eastern Division'

set(handles.teamSelect,'String',handles.secEastList);

newSize = size(handles.secEastList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

case 'Western Division'

set(handles.teamSelect,'String',handles.secWestList);

newSize = size(handles.secWestList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

end

guidata(hObject, handles);

5. Use an if statement to change the displayed logo based on the selected team.

axes(handles.teamLogo);

for i = 1:14

if strcmp(str{val},handles.secData(i).name) % Compares selected team name to a name in the structure

imshow(handles.secData(i).logo); % Gets the string containing the file name of the logo based on the selected team name

end

end

6. Use a for loop to populate the structures that will be used to store the data for each team

% Populates a structure containing the data that will be used

for i = 1:14

secData(i) = struct('name',teamList(i),'location',locationList(i),'founded',foundedList(i),'enrollment',enrollmentList(i),'nickname',nicknameList(i),'joined',joinedList(i),'logo',logoList(i));

end

7. Include significant calculations for finding the ranks of a team each year from that year’s leaderboards

axes(handles.rankHistory);

x = [2014,2013,2012,2011,2010,2009,2008,2007,2006,2005,2004];

ranks = [0,0,0,0,0,0,0,0,0,0,0];

if strcmp(handles.division{handles.divisionval},'Eastern Division') % Differentiates between divisions

divbase = handles.secEastRanks;

else

divbase = handles.secWestRanks;

end

for i = 1:11

for j = 1:7

if strcmp(str{val},divbase{i}(j))

ranks(i) = j; % finds the team's position in each year's leaderboard, returns that as the rank for that year

end

end

end

8. Will have input data of selecting a division from the initial drop down box, then selecting a team from the team dropdown box that can be updated periodically and output data of data about the selected team retrievable for each user.

% --- Executes on selection change in divisionSelect.

function divisionSelect\_Callback(hObject, eventdata, handles)

% hObject handle to divisionSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns divisionSelect contents as cell array

% contents{get(hObject,'Value')} returns selected item from divisionSelect

% Gets the selected division and makes it available in other functions

str = get(hObject, 'String');

val = get(hObject, 'Value');

handles.division = str;

handles.divisionval = val;

% Changes the team selection list based on the selected region

switch str{val}

case 'Select a division to begin'

set(handles.teamSelect,'String','Please select a division');

set(handles.teamSelect,'Value',1);

case 'Eastern Division'

set(handles.teamSelect,'String',handles.secEastList);

newSize = size(handles.secEastList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

case 'Western Division'

set(handles.teamSelect,'String',handles.secWestList);

newSize = size(handles.secWestList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

end

guidata(hObject, handles);

% --- Executes on selection change in teamSelect.

function teamSelect\_Callback(hObject, eventdata, handles)

% hObject handle to teamSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns teamSelect contents as cell array

% contents{get(hObject,'Value')} returns selected item from teamSelect

% Gets the selected team and allows it to be referenecd in other functions

str = get(hObject, 'String');

handles.selectedTeam = str;

val = get(hObject, 'Value');

handles.selectedTeamValue = val;

% Updates the team logo based on the selected team

axes(handles.teamLogo);

for i = 1:14

if strcmp(str{val},handles.secData(i).name) % Compares selected team name to a name in the structure

imshow(handles.secData(i).logo); % Gets the string containing the file name of the logo based on the selected team name

end

end

% Updates the graph containing information on the rank history

axes(handles.rankHistory);

x = [2014,2013,2012,2011,2010,2009,2008,2007,2006,2005,2004];

ranks = [0,0,0,0,0,0,0,0,0,0,0];

if strcmp(handles.division{handles.divisionval},'Eastern Division') % Differentiates between divisions

divbase = handles.secEastRanks;

else

divbase = handles.secWestRanks;

end

for i = 1:11

for j = 1:7

if strcmp(str{val},divbase{i}(j))

ranks(i) = j; % finds the team's position in each year's leaderboard, returns that as the rank for that year

end

end

end

negranks = -ranks; % Allows the ranks to be shown in inverse order (1 on top)

handles.showData = plot(x,negranks,'\*'); % made a variable so it can be hidden by a button

axis([2004,2014,-7,1]);

set(gca,'YTickLabelMode','Manual'); % Defines the scale and hides the Y values

set(gca,'YTick',[]);

% Shows the team rank next to the point on the graph, made variable to

% hide when button is selected

handles.showText1 = text(2014,negranks(1),strcat('\leftarrow',num2str(ranks(1))));

handles.showText2 = text(2013,negranks(2),strcat('\leftarrow',num2str(ranks(2))));

handles.showText3 = text(2012,negranks(3),strcat('\leftarrow',num2str(ranks(3))));

handles.showText4 = text(2011,negranks(4),strcat('\leftarrow',num2str(ranks(4))));

handles.showText5 = text(2010,negranks(5),strcat('\leftarrow',num2str(ranks(5))));

handles.showText6 = text(2009,negranks(6),strcat('\leftarrow',num2str(ranks(6))));

handles.showText7 = text(2008,negranks(7),strcat('\leftarrow',num2str(ranks(7))));

handles.showText8 = text(2007,negranks(8),strcat('\leftarrow',num2str(ranks(8))));

handles.showText9 = text(2006,negranks(9),strcat('\leftarrow',num2str(ranks(9))));

handles.showText10 = text(2005,negranks(10),strcat('\leftarrow',num2str(ranks(10))));

handles.showText11 = text(2004,negranks(11),strcat('\leftarrow',num2str(ranks(11))));

% Hides all the data (button showing data is off by default)

set(gca,'Visible','Off');

set(handles.showData,'Visible','Off')

set([handles.showText1,handles.showText2,handles.showText3,handles.showText4,handles.showText5,handles.showText6,handles.showText7,handles.showText8,handles.showText9,handles.showText10,handles.showText11],'Visible','Off');

% Populates cell array that contains info that will be shown

for i = 1:14

if strcmp(str{val},handles.secData(i).name)

handles.infoBox(1) = strcat(handles.defaultInfoBox(1),handles.secData(i).name);

handles.infoBox(2) = strcat(handles.defaultInfoBox(2),handles.secData(i).location);

handles.infoBox(3) = strcat(handles.defaultInfoBox(3),handles.secData(i).nickname);

end

end

% Displays cell array data in text box

set(handles.teamInformation,'String',handles.infoBox);

% Resets displayed information when something else is selected

str = get(hObject, 'String');

handles.selectedTeam = str;

val = get(hObject, 'Value');

handles.selectedTeamValue = val;

handles.infoBox = handles.defaultInfoBox;

% Updates handles for new/modified variables

guidata(hObject, handles);

9. The ability to handle incorrect input by the program asking for a division selection from the initial dropdown box.

% --- Executes on selection change in divisionSelect.

function divisionSelect\_Callback(hObject, eventdata, handles)

% hObject handle to divisionSelect (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns divisionSelect contents as cell array

% contents{get(hObject,'Value')} returns selected item from divisionSelect

% Gets the selected division and makes it available in other functions

str = get(hObject, 'String');

val = get(hObject, 'Value');

handles.division = str;

handles.divisionval = val;

% Changes the team selection list based on the selected region

switch str{val}

case 'Select a division to begin'

set(handles.teamSelect,'String','Please select a division');

set(handles.teamSelect,'Value',1);

case 'Eastern Division'

set(handles.teamSelect,'String',handles.secEastList);

newSize = size(handles.secEastList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

case 'Western Division'

set(handles.teamSelect,'String',handles.secWestList);

newSize = size(handles.secWestList);

newVal = newSize(1,2);

set(handles.teamSelect,'Value',newVal);

end

guidata(hObject, handles);

10. Use a structure to hold and retrieve information for the teams.

% Populates a structure containing the data that will be used

for i = 1:14

secData(i) = struct('name',teamList(i),'location',locationList(i),'founded',foundedList(i),'enrollment',enrollmentList(i),'nickname',nicknameList(i),'joined',joinedList(i),'logo',logoList(i));

end

% Updates the team logo based on the selected team

axes(handles.teamLogo);

for i = 1:14

if strcmp(str{val},handles.secData(i).name) % Compares selected team name to a name in the structure

imshow(handles.secData(i).logo); % Gets the string containing the file name of the logo based on the selected team name

end

end

% Populates cell array that contains info that will be shown

for i = 1:14

if strcmp(str{val},handles.secData(i).name)

handles.infoBox(1) = strcat(handles.defaultInfoBox(1),handles.secData(i).name);

handles.infoBox(2) = strcat(handles.defaultInfoBox(2),handles.secData(i).location);

handles.infoBox(3) = strcat(handles.defaultInfoBox(3),handles.secData(i).nickname);

end

end

for i = 1:14

if strcmp(handles.selectedTeam{handles.selectedTeamValue},handles.secData(i).name)

handles.additionalInfoBox(1) = strcat(handles.defaultAdditionalInfoBox(1),num2str(handles.secData(i).founded));

handles.additionalInfoBox(2) = strcat(handles.defaultAdditionalInfoBox(2),num2str(handles.secData(i).enrollment));

handles.additionalInfoBox(3) = strcat(handles.defaultAdditionalInfoBox(3),num2str(handles.secData(i).joined));

end

end

11. Use a radio button to show additional information for each team.

% --- Executes on button press in showAdditionalInfo.

function showAdditionalInfo\_Callback(hObject, eventdata, handles)

% hObject handle to showAdditionalInfo (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of showAdditionalInfo

% Sets visibiliy additional information box based on selection

if get(hObject,'Value') == 1

set(handles.additionalTeamInformation,'Visible','On');

else

set(handles.additionalTeamInformation,'Visible','Off');

end

% Populates cell array with information based on the selected team

for i = 1:14

if strcmp(handles.selectedTeam{handles.selectedTeamValue},handles.secData(i).name)

handles.additionalInfoBox(1) = strcat(handles.defaultAdditionalInfoBox(1),num2str(handles.secData(i).founded));

handles.additionalInfoBox(2) = strcat(handles.defaultAdditionalInfoBox(2),num2str(handles.secData(i).enrollment));

handles.additionalInfoBox(3) = strcat(handles.defaultAdditionalInfoBox(3),num2str(handles.secData(i).joined));

end

end

% Sets information box to display data

set(handles.additionalTeamInformation,'String',handles.additionalInfoBox);