Sport Prediction System

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

CSVReader< M > 5
CSVWriter< M > 6
EmailService 6
Match 8
    FootballMatch 7
Member 9
Prediction 11
    FootballPrediction 8
PredictionGame 11
Schedule 13
Score 14

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

CSVReader< M > 5
CSVWriter< M > 6
EmailService
    Provides functionality to send emails using SMTP 6
FootballMatch 7
FootballPrediction 8
Match
    Abstract match class to set a frame for sport-specific kinds of matches 8
Member
    Represents a member participating in the Sport Prediction System (SPS) 9
Prediction 11
PredictionGame
    Represents a prediction game in the Sport Prediction System (SPS) 11
Schedule
    Generic class Schedule which represents a tournament 13
Score 14

Chapter 3

Class Documentation

3.1 CSVReader< M > Class Template Reference

Static Public Member Functions

- static string[ ] GetMatchDataFromCsvFile (string PathToMatchDataCsvFile, int line_number)

  Reads the match data from a CSV file.
- static List< Match > **GetScheduleFromCsvFile** (string PathToCsvFile, SportsTypes sport_type)

3.1.1 Member Function Documentation

3.1.1.1 GetMatchDataFromCsvFile()

```
static string [] CSVReader< M >.GetMatchDataFromCsvFile (
            string PathToMatchDataCsvFile,
            int line_number )  [inline], [static]
```

Reads the match data from a CSV file.

Parameters

PathToMatchDataCsvFile	The path to the CSV file containing match data.
MatchID	The unique identifier of the match.

Returns

An array of strings containing the match data.

The documentation for this class was generated from the following file:

- src/ClassLib/CSVReader.cs

3.2 CSVWriter< M > Class Template Reference

Static Public Member Functions

- static void **UpdateSchedule** (string PathToCsvFile, List< Match > schedule)
- static void **DeleteScheduleFile** (string PathToCsvFile)

The documentation for this class was generated from the following file:

- src/ClassLib/CSVWriter.cs

3.3 EmailService Class Reference

Provides functionality to send emails using SMTP.

Public Member Functions

- EmailService ()

  Initializes a new instance of the EmailService class.
- void SendEmail (string Recipient, string Sender, string Subject, string Content)

  Sends an email.

3.3.1 Detailed Description

Provides functionality to send emails using SMTP.

3.3.2 Constructor & Destructor Documentation

3.3.2.1 EmailService()

```
EmailService.EmailService ( )  [inline]
```

Initializes a new instance of the EmailService class.

Parameters

smtpServer	The SMTP server address.
smtpPort	The SMTP server port.
username	The username for SMTP authentication.
password	The password for SMTP authentication.

3.3.3 Member Function Documentation

3.3.3.1 SendEmail()

```
void EmailService.SendEmail (
            string Recipient,
            string Sender,
            string Subject,
            string Content )  [inline]
```

Sends an email.

Parameters

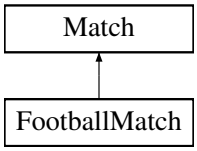
recipient	The recipient's email address.
subject	The subject of the email.
content	The content of the email.

The documentation for this class was generated from the following file:

- src/ClassLib/EmailService.cs

3.4 FootballMatch Class Reference

Inheritance diagram for FootballMatch:



Public Member Functions

- **FootballMatch** (string PathToMatchDataCsvFile, int line_number)
- override string **ToString** ()

Properties

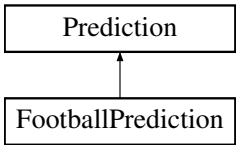
- string? **HomeTeam** [get]
- string? **AwayTeam** [get]
- byte? **ResultHomeTeamPenalties** [get]
- byte? **ResultAwayTeamPenalties** [get]

The documentation for this class was generated from the following file:

- src/ClassLib/FootballMatch.cs

3.5 FootballPrediction Class Reference

Inheritance diagram for FootballPrediction:



Public Member Functions

- **FootballPrediction** (uint MemberID, FootballMatch football_match, DateTime predictionDate, byte prediction_home, byte prediction_away)
- void **ChangePrediction** (byte? NewPredictionHome, byte? NewPredictionAway)
- override string **ToString** ()

Additional Inherited Members

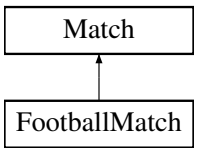
The documentation for this class was generated from the following file:

- src/ClassLib/FootballPrediction.cs

3.6 Match Class Reference

Abstract match class to set a frame for sport-specific kinds of matches.

Inheritance diagram for Match:



Public Member Functions

- Match (string PathToMatchDataCsvFile, int line_number)

  Constructor to initialize a match object.
- override int **GetHashCode** ()

Properties

- uint MatchID [get]

  Unique identifier for the match.
- DateTime MatchDate [get]

  Date and time when the match takes place.
- byte? ResultTeam1 [get]

  Result of team 1 in the match.
- byte? ResultTeam2 [get]

  Result of team 2 in the match.
- string[ ] **MatchArray** [get]

3.6.1 Detailed Description

Abstract match class to set a frame for sport-specific kinds of matches.

This class provides the basic structure for any kind of sports match, including common properties like MatchID, MatchDate, and Results.

3.6.2 Constructor & Destructor Documentation

3.6.2.1 Match()

```
Match.Match (
            string PathToMatchDataCsvFile,
            int line_number )  [inline]
```

Constructor to initialize a match object.

Parameters

PathToMatchDataCsvFile	The path to the CSV file containing match data.

The documentation for this class was generated from the following file:

- src/ClassLib/Match.cs

3.7 Member Class Reference

Represents a member participating in the Sport Prediction System (SPS).

Public Member Functions

- Member (string forename, string surname, string emailaddress)

  Initializes a new instance of the Member class.
- override int **GetHashCode** ()
- void AddParticipatingSchedule (Schedule schedule)

  Adds a schedule to the member's list of participating schedules.
- void RemoveParticipatingSchedule (ScheduleTypes schedule_type)

  Removes a schedule from the member's list of participating schedules.
- void AddPredictionToDo ()

  Adds a prediction to the member's list of predictions to do.
- void RemovePredictionToDo (uint MatchID)

  Removes a prediction from the member's list of predictions to do.
- Prediction SearchPredictionDone (uint PredictionID)

  Searches for a specific prediction in the member's list.
- void **AddPrediction** ()

Protected Attributes

- List< Score > **Scores**

Properties

- uint MemberID `[get]`

  Gets the unique ID of the member.
- string? **forename** `[get, set]`
- string? **surname** `[get, set]`
- string **EmailAddress** `[get, set]`
- string **password** `[get, set]`
- List< Schedule > **ParticipatingSchedules** `[get]`
- List< Match > **PredictionsToDo** `[get]`
- List< Prediction > **PredictionsDone** `[get]`

3.7.1 Detailed Description

Represents a member participating in the Sport Prediction System (SPS).

3.7.2 Member Function Documentation

3.7.2.1 SearchPredictionDone()

```
Prediction Member.SearchPredictionDone (
            uint PredictionID )  [inline]
```

Searches for a specific prediction in the member's list.

Returns

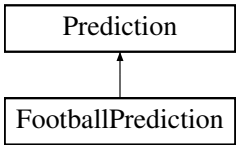
The prediction if found, otherwise null.

The documentation for this class was generated from the following file:

- src/ClassLib/Member.cs

3.8 Prediction Class Reference

Inheritance diagram for Prediction:



Public Member Functions

- **Prediction** (uint member_id, Match predicted_match, DateTime predictionDate)
- bool **ValidatePrediction** ()
- override int **GetHashCode** ()
- override string **ToString** ()

Properties

- uint **PredictionID** `[get]`
- uint **MemberID** `[get]`
- Match **PredictedMatch** `[get]`
- DateTime **PredictionDate** `[get, set]`

The documentation for this class was generated from the following file:

- src/ClassLib/Prediction.cs

3.9 PredictionGame Class Reference

Represents a prediction game in the Sport Prediction System (SPS).

Public Member Functions

- PredictionGame (EmailService emailService)

  Initializes a new instance of the PredictionGame class.
- void Register (Member member)

  Registers a new member to the prediction game.
- void Unsubscribe (int MemberID)

  Unsubscribes a member from the prediction game.
- void SendDailyEmail ()

  Sends a daily email to all members with the matches that need to be predicted.

Properties

- uint PredictionGameID `[get]`

  Gets the unique ID of the prediction game.
- List< ScheduleTypes > **ScheduleTypes** `[get]`

3.9.1 Detailed Description

Represents a prediction game in the Sport Prediction System (SPS).

3.9.2 Constructor & Destructor Documentation

3.9.2.1 PredictionGame()

```
PredictionGame.PredictionGame (
            EmailService emailService )  [inline]
```

Initializes a new instance of the PredictionGame class.

3.9.3 Member Function Documentation

3.9.3.1 Register()

```
void PredictionGame.Register (
            Member member )  [inline]
```

Registers a new member to the prediction game.

3.9.3.2 SendDailyEmail()

```
void PredictionGame.SendDailyEmail ( )  [inline]
```

Sends a daily email to all members with the matches that need to be predicted.

3.9.3.3 Unsubscribe()

```
void PredictionGame.Unsubscribe (
            int MemberID )  [inline]
```

Unsubscribes a member from the prediction game.

3.9.4 Property Documentation

3.9.4.1 PredictionGameID

```
uint PredictionGame.PredictionGameID  [get]
```

Gets the unique ID of the prediction game.

The documentation for this class was generated from the following file:

- src/ClassLib/PredictionGame.cs

3.10 Schedule Class Reference

Generic class Schedule which represents a tournament.

Public Member Functions

- **Schedule** (string PathToCsvFile, SportsTypes sport_type, ScheduleTypes schedule_type)
- List< Match > **GetMatchesFromCsvFile** (string PathToCsvFile, SportsTypes sport_type)
- List< Match > **GetMatchesOnDay** ()

Properties

- ScheduleTypes **ScheduleID** [get]
- List< Match > **Matches** [get]

3.10.1 Detailed Description

Generic class Schedule which represents a tournament.

It contains a list of all the matches which take place during the tournament.

Added to that it also contains a list of all the matches on the specific day of the tournament.

The documentation for this class was generated from the following file:

- src/ClassLib/Schedule.cs

3.11 Score Class Reference

Public Member Functions

- **Score** (ScheduleTypes PredictedSchedule)
- int **CalculateScore** (ScheduleTypes PredictedSchedule, Prediction prediction)

Properties

- uint **ScoreID** `[get]`

The documentation for this class was generated from the following file:

- src/ClassLib/Score.cs