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:

EmailService 5
Match 7
    FootballMatch 6
Member< T, M > 8
Prediction 9
    FootballPrediction 7
PredictionGame< T, M > 10
Schedule< M > 12
Score 12

Chapter 2

Class Index

2.1 Class List

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

EmailService
: Provides functionality to send emails using SMTP . . . 5

FootballMatch . . . 6

FootballPrediction . . . 7

Match
: Abstract match class to set a frame for sport-specific kinds of matches . . . 7

Member< T, M >
: Represents a member participating in the Sport Prediction System (SPS) . . . 8

Prediction . . . 9

PredictionGame< T, M >
: Represents a prediction game in the Sport Prediction System (SPS) . . . 10

Schedule< M >
: Generic class Schedule which represents a tournament . . . 12

Score . . . 12

Chapter 3

Class Documentation

3.1 EmailService Class Reference

Provides functionality to send emails using SMTP.

Public Member Functions

- EmailService (string smtpServer, int smtpPort, string username, string password)

  Initializes a new instance of the EmailService class.
- void SendEmail (string recipient, string subject, string content)

  Sends an email.

3.1.1 Detailed Description

Provides functionality to send emails using SMTP.

3.1.2 Constructor & Destructor Documentation

3.1.2.1 EmailService()

```
EmailService.EmailService (
            string smtpServer,
            int smtpPort,
            string username,
            string password )  [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.

3.1.3 Member Function Documentation

3.1.3.1 SendEmail()

```
void EmailService.SendEmail (
            string recipient,
            string subject,
            string content )  [inline]
```

Sends an email.

Parameters

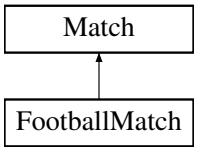
recipient	The recipient's email address.
subject	The subject of the email.
content	The content of the email.

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

- src/ClassLib/EmailService.cs

3.2 FootballMatch Class Reference

Inheritance diagram for FootballMatch:



Public Member Functions

- **FootballMatch** (string PathToMatchDataCsvFile)

Properties

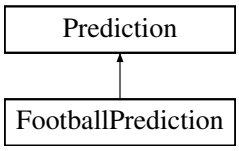
- string? **HomeTeam** `[get]`
- string? **AwayTeam** `[get]`

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

- src/ClassLib/FootballMatch.cs

3.3 FootballPrediction Class Reference

Inheritance diagram for FootballPrediction:



Public Member Functions

- **FootballPrediction** (uint MemberID, int MatchID, byte PredictionHome, byte PredictionAway)
- void **ChangePrediction** (uint? NewPredictionHome, uint? NewPredictionAway, uint PredictionID)

Additional Inherited Members

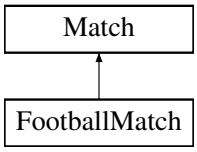
The documentation for this class was generated from the following file:

- src/ClassLib/FootballPrediction.cs

3.4 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)

  Constructor to initialize a match object.

Properties

- uint MatchID `[get]`

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

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

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

  Result of team 2 in the match.

3.4.1 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.

3.4.2 Constructor & Destructor Documentation

3.4.2.1 Match()

```
Match.Match (
            string PathToMatchDataCsvFile )  [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

3.5 Member< T, M > Class Template Reference

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

Public Member Functions

- Member (string forname, string surname, string EmailAddress)

Initializes a new instance of the Member class.

- void AddSchedule (uint ScheduleID)

  Adds a schedule to the member's list of participating schedules.
- void RemoveSchedule (uint ScheduleID)

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

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

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

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

  Returns

  The prediction if found, otherwise null.
- void AddScore (ScheduleTypes PredictedSchedule)

  Adds a score to the member's list of scores.
- void UpdateScore (ScheduleTypes PredictedSchedule, Prediction prediction)

  Updates a score in the member's list of scores.

Properties

- uint MemberID `[get]`

  Gets the unique ID of the member.

3.5.1 Detailed Description

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

Type Constraints

T **:** ***Prediction***

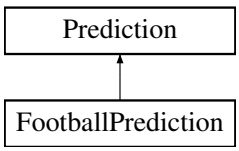
M **:** ***Match***

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

- src/ClassLib/Member.cs

3.6 Prediction Class Reference

Inheritance diagram for Prediction:



Public Member Functions

- **Prediction** (uint MemberID, uint MatchID)
- bool **ValidatePrediction** ()

Properties

- uint **PredictionID** `[get]`
- uint **MemberID** `[get]`
- uint **MatchID** `[get]`
- DateTime **PredictionDate** `[get]`

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

- src/ClassLib/Prediction.cs

3.7 PredictionGame< T, M > Class Template 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< T, M > 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]`

3.7.1 Detailed Description

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

Type Constraints

T **:** ***Prediction***

M **:** ***Match***

3.7.2 Constructor & Destructor Documentation

3.7.2.1 PredictionGame()

```
PredictionGame< T, M >.PredictionGame (
            EmailService emailService )  [inline]
```

Initializes a new instance of the PredictionGame class.

3.7.3 Member Function Documentation

3.7.3.1 Register()

```
void PredictionGame< T, M >.Register (
            Member< T, M > member )  [inline]
```

Registers a new member to the prediction game.

3.7.3.2 SendDailyEmail()

```
void PredictionGame< T, M >.SendDailyEmail ( )  [inline]
```

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

3.7.3.3 Unsubscribe()

```
void PredictionGame< T, M >.Unsubscribe (
            int MemberID )  [inline]
```

Unsubscribes a member from the prediction game.

3.7.4 Property Documentation

3.7.4.1 PredictionGameID

```
uint PredictionGame< T, M >.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

3.8 Schedule< M > Class Template Reference

Generic class Schedule which represents a tournament.

Public Member Functions

- **Schedule** (ScheduleTypes schedule_type, string PathToCsvFile)

Properties

- ScheduleTypes **ScheduleID** [get]
- List< M > **Matches** [get]
- List< M > **MatchesOnDay** [get]

3.8.1 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.

Type Constraints

M **:** ***Match***

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

- src/ClassLib/Schedule.cs

3.9 Score Class Reference

Public Member Functions

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

Properties

- uint **ScoreID** [get]

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

- src/ClassLib/Score.cs