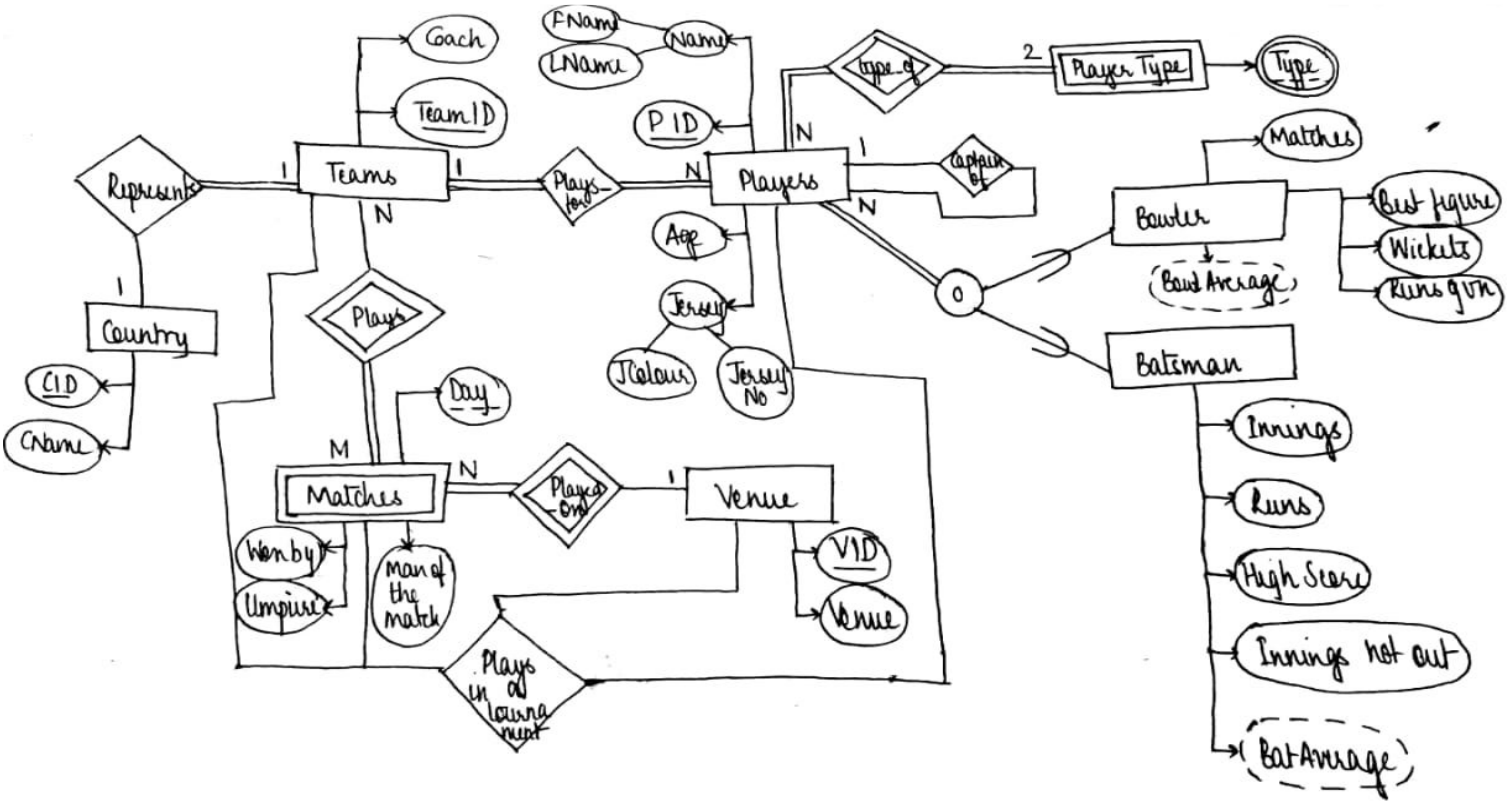
DATABASE AND APPLICATION

PROJECT PHASE 3

Team Name:
A_2
Team members:
Kushagra Agarwal (2018113012)
Shreeya Pahune (2018113011)

ER MODEL



The SRS we made mentioned Matches entity as a weak entity, but in the list of weak entities in the SRS, we called it Schedule by mistake. The team assigned to create the ER misinterpreted and created Matches to be a strong entity and created an extra weak entity Schedule. The mistake has been corrected in the ER model above.

The weak entity Schedule and its identifying relationship have been removed.

STEP1

Country

CID	CName
P.K.	

Teams

TeamID	Coach
P.K.	

Venue

VID	Venue
P.K.	

Players

	Name			Jersey	
PID	Fname	Lname	Age	JerseyNo	JColour
P.K.					

STEP2

Country

CID	CName
P.K.	

Teams

TeamID	Coach
P.K.	

Matches

MID					
TID1	TID2	Won by	Man of the Match	Umpire	Day
F.K. = {TID1, TID2}					Partial Key

Venue

VID	Venue
P.K.	

Players

	Name			Jersey	
PID	Fname	Lname	Age	JerseyNo	JColour
P.K.					

Player Type

PID	Type
F.K.	Partial Key

STEP3

Country					
CID	CName				
P.K.					
Teams					
TeamID	Coach	CID			
P.K.		F.K.			
Matches					
MID					
TID1	TID2	Won by	Man of the Match	Umpire	Day
F.K. = {TID1, TID2}					Partial Key
Venue					
VID	Venue				
P.K.					
Players					
	Name			Jersey	
PID	Fname	Lname	Age	JerseyNo	JColour
P.K.					
Player Type					
PID	Type				
F.K.	Partial Key				

STEP4

Country						
CID	CName					
P.K.						
Teams						
TeamID	Coach	CID				
P.K.		F.K.				
Matches						
MID						
TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
F.K. = {TID1, TID2}					Partial Key	F.K.
Venue						
VID	Venue					
P.K.						
Players						
	Name			Jersey			
PID	Fname	Lname	Age	JerseyNo	JColour	TeamID	CaptainID
P.K.						F.K.	
Player Type							
PID	Type						
F.K.	Partial Key						

STEP5

Country

CID	CName
P.K.	

Teams

TeamID	Coach	CID
P.K.		F.K.

Matches

MID						
TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
F.K. = {TID1, TID2}					Partial Key	F.K.

Venue

VID	Venue
P.K.	

Players

	Name			Jersey			
PID	Fname	Lname	Age	JerseyNo	JColour	TeamID	CaptainID
P.K.						F.K.	

Player Type

PID	Type
F.K.	Partial Key

Plays

MID		
TID1	TID2	**TeamID**
F.K. = {TID1, TID2}		

STEP6

Country

CID	CName
P.K.	

Teams

TeamID	Coach	CID
P.K.		F.K.

Matches

MID						
TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
F.K. = {TID1, TID2}					Partial Key	F.K.

Venue

VID	Venue
P.K.	

Players

	Name			Jersey			
PID	Fname	Lname	Age	JerseyNo	JColour	TeamID	CaptainID
P.K.						F.K.	

Player Type

PID	Type
F.K.	Partial Key

Plays

MID		
TID1	TID2	**TeamID**
F.K. = {TID1, TID2}		

STEP7

Country

CID	CName
P.K.	

Teams

TeamID	Coach	CID
P.K.		F.K.

Matches

MID						
TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
F.K. = {TID1, TID2}					Partial Key	F.K.

Venue

VID	Venue
P.K.	

Players

	Name			Jersey			
PID	Fname	Lname	Age	JerseyNo	JColour	TeamID	CaptainID
P.K.						F.K.	

Player Type

PID	Type
F.K.	Partial Key

Plays

MID		
TID1	TID2	**TeamID**
F.K. = {TID1, TID2}		

Plays in a Tournament

MID				
TID1	TID2	TeamID	VenueID	PID
F.K. = {TID1, TID2}		F.K.	F.K.	F.K.

STEP8

Country

CID	CName
P.K.	

Teams

TeamID	Coach	CID
P.K.		F.K.

Matches

MID						
TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
F.K. = {TID1, TID2}					Partial Key	F.K.

Venue

VID	Venue
P.K.	

Players

	Name			Jersey			
PID	Fname	Lname	Age	JerseyNo	JColour	TeamID	CaptainID
P.K.						F.K.	

Player Type

PID	Type
F.K.	Partial Key

Plays

MID		
TID1	TID2	**TeamID**
F.K. = {TID1, TID2}		

Plays in a Tournament

MID				
TID1	TID2	TeamID	VenueID	PID
F.K. = {TID1, TID2}		F.K.	F.K.	F.K.

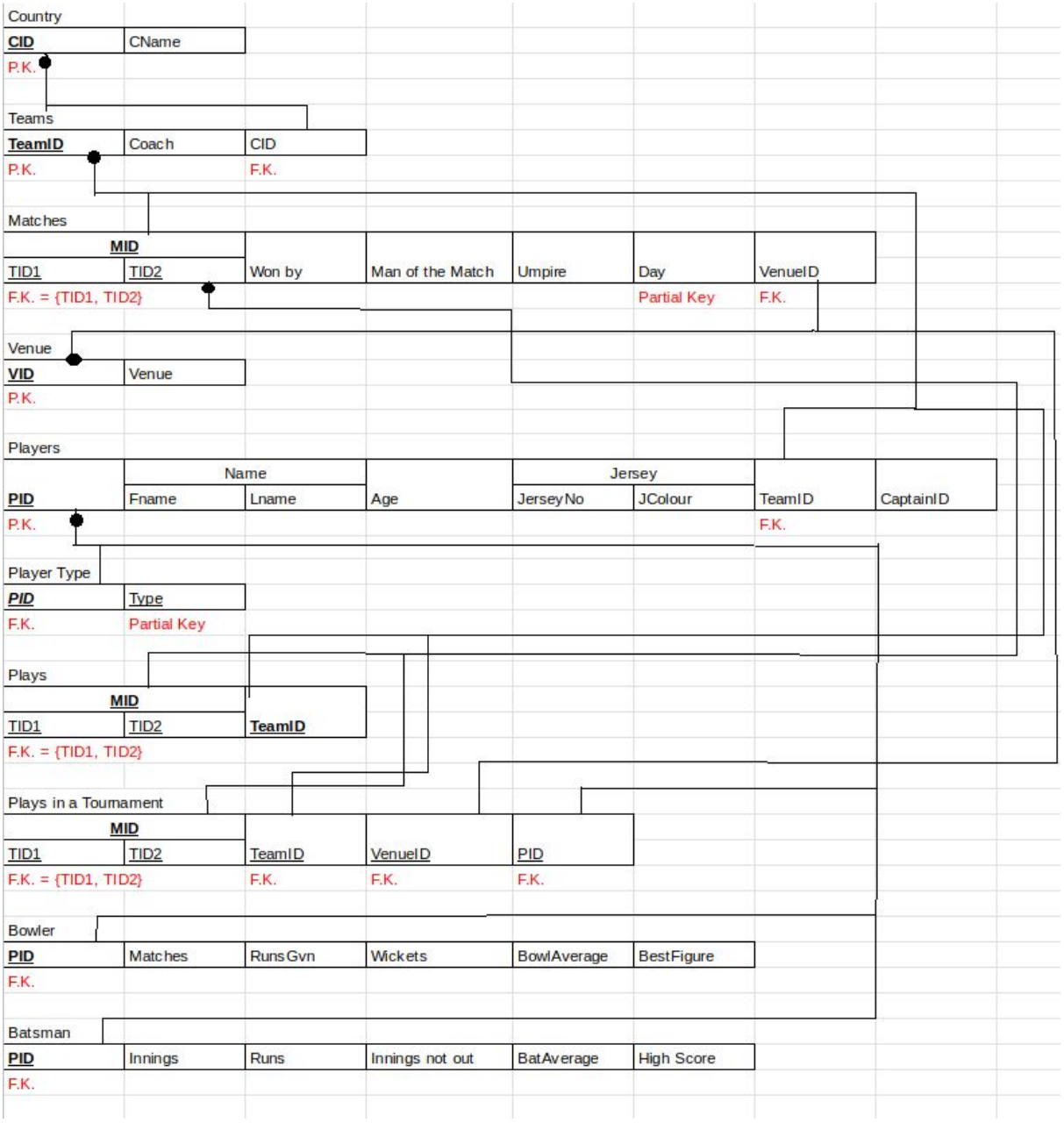
Bowler

PID	Matches	RunsGvn	Wickets	BowlAverage	BestFigure
F.K.					

Batsman

PID	Innings	Runs	Innings not out	BatAverage	High Score
F.K.					

FINAL RELATIONAL DATABASE SCHEMA MODEL



1NF - Composite and Multivalued attributes removed

Country

CID	CName
P.K.	

Teams

TeamID	Coach	CID
P.K.		F.K.

Matches

TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
F.K. = TID1, TID2					Partial Key	F.K.

Venue

VID	Venue
P.K.	

Players

PID	Fname	Lname	Age	JerseyNo	JColour	TeamID	CaptainID
P.K.						F.K.	

Player Type

PID	Type
F.K.	Partial Key

Plays

TID1	TID2	**TeamID**
F.K. = TID1, TID2		

Plays in a Tournament

TID1	TID2	TeamID	VenueID	PID
F.K. = TID1, TID2		F.K.	F.K.	F.K.

Bowler

PID	Matches	RunsGvn	Wickets	BowlAverage	BestFigure
F.K.					

Batsman

PID	Innings	Runs	Innings not out	BatAverage	High Score
F.K.					

2NF - Same as 1NF

Country							
CID	CName						
P.K.							
Teams							
TeamID	Coach	CID					
P.K.		F.K.					
Matches							
TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID	
F.K. = TID1, TID2					Partial Key	F.K.	
Venue							
VID	Venue						
P.K.							
Players							
PID	Fname	Lname	Age	JerseyNo	JColour	TeamID	CaptainID
P.K.						F.K.	
Player Type							
PID	Type						
F.K.	Partial Key						
Plays							
TID1	TID2	**TeamID**					
F.K. = TID1, TID2							
Plays in a Tournament							
TID1	TID2	TeamID	VenueID	PID			
F.K. = TID1, TID2		F.K.	F.K.	F.K.			
Bowler							
PID	Matches	RunsGvn	Wickets	BowlAverage	BestFigure		
F.K.							
Batsman							
PID	Innings	Runs	Innings not out	BatAverage	High Score		

3NF - Players broken down to Players1 and Players2

Country

CID	CName
P.K.	

Teams

TeamID	Coach	CID
P.K.		F.K.

Matches

TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
F.K. = TID1, TID2					Partial Key	F.K.

Venue

VID	Venue
P.K.	

Players1

PID	Fname	Lname	Age	JerseyNo	JColour
P.K.					

Players2

TeamID	CaptainID
P.K	

Player Type

PID	Type
F.K.	Partial Key

Plays

TID1	TID2	**TeamID**
F.K. = TID1, TID2		

Plays in a Tournament

TID1	TID2	TeamID	VenueID	PID
F.K. = TID1, TID2		F.K.	F.K.	F.K.

Bowler

PID	Matches	RunsGvn	Wickets	BowlAverage	BestFigure
F.K.					

Batsman

PID	Innings	Runs	Innings not out	BatAverage	High Score

EXAMPLE TUPLES

Country

CID	CName
1	INDIA
2	AUSTRALIA
3	USA
4	SOUTH AFRICA

Teams

TeamID	Coach	CID
3	BARRY	2
1	JOHN	4
2	SHASTRI	1

Matches

MID						
TID1	TID2	Won by	Man of the Match	Umpire	Day	VenueID
1	2	2	KOHLI	BOWDEN	1	1
2	3	2	SACHIN	TAUFFELL	3	3
1	3	1	SMITH	SIMON	2	1

Venue

VID	Venue
1	EDEN GARDEN
2	MANSINGH
3	WANKHEDE

Players1

	Name			Jersey	
PID	Fname	Lname	Age	JerseyNo	JColour
1	VIRAT	KOHLI	30	19	BLUE
2	SACHIN	TENDULKAR	42	10	BLUE
3	STEVEN	SMITH	29	3	YELLOW
4	ABD	VILLIERS	36	4	GREEN
5	MITCHELL	STARK	30	5	YELLOW

Players 2

TeamID	CaptainID
2	1
3	3
1	4

Player Type

PID	Type
1	BATSMAN
2	BOWLER
2	BATSMAN
3	BATSMAN
4	BATSMAN
5	BOWLER

Plays

MID		
TID1	TID2	**TeamID**
1	2	*1*
1	3	*1*
1	2	*2*
2	3	*2*
1	3	*3*
2	3	*3*

Plays in a Tournament

MID				
TID1	TID2	TeamID	VenueID	PID
1	2	*2*	1	1
1	2	*2*	1	2
1	2	*1*	1	4
1	3	*1*	1	4
1	3	*3*	1	3
1	3	*3*	1	5
2	3	*2*	3	1
2	3	*2*	3	2
2	3	*3*	3	3
2	3	*3*	3	5

Bowler

PID	Matches	RunsGvn	Wickets	BowlAverage	BestFigure
2	400	980	140	7	45-8
5	150	2000	400	5	5-9

Batsman

PID	Innings	Runs	Innings not out	BatAverage	High Score
1	290	10000	40	40	183
2	400	18000	100	60	200
3	260	8000	10	32	159
4	200	6000	50	40	175