

# 09/14: Risks and Prototypes

## The Capstone Experience

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*From Students...  
...to Professionals*

# Meeting Attendance Notes

- Microsoft Teams
  - Joined  $\leq$  10:20:00 AM  $\Rightarrow$  On Time
  - 10:20:01 AM  $\leq$  Joined  $\leq$  10:25:00 AM  $\Rightarrow$  Late
  - 10:25:01 AM  $\leq$  Joined  $\Rightarrow$  Absent
  - Left  $\leq$  Meeting End Time  $\Rightarrow$  Absent
- Google Form
  - Random Times During Meeting
  - Once At End of Meeting
- Meeting End Time
  - Normally  $\leq$  11:40:00 AM
  - Not Until “Dismissed”
  - Dr. D./TA May Dismiss Folks and Stay for Questions
- Grade Impact
  - On Time  $\Rightarrow$  -0.0
  - Late  $\Rightarrow$  -0.5
  - Absent  $\Rightarrow$  -1.0
  - Miss Google Form  $\Rightarrow$  ???

Still Considering

Subject to Change



# Risks and Prototypes

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## ➤ Risks

- Prototypes



# Identifying Risks

- What You Don't
  - Know
  - Understand
  - Know How to Do
- Normally
  - Major Project Features
  - “Showstoppers”
- Varies From
  - Not Familiar With But (Probably) Can Learn to
  - Absolutely No Idea How to Do It

What are you worried about?

What should you be worried about?



# Example Risks

Including but not limited to...

- Business Processes
- Key Application Features
- Hardware Systems
- Software Systems
- Development / Programming Environments
- Programming Languages
- Etc...

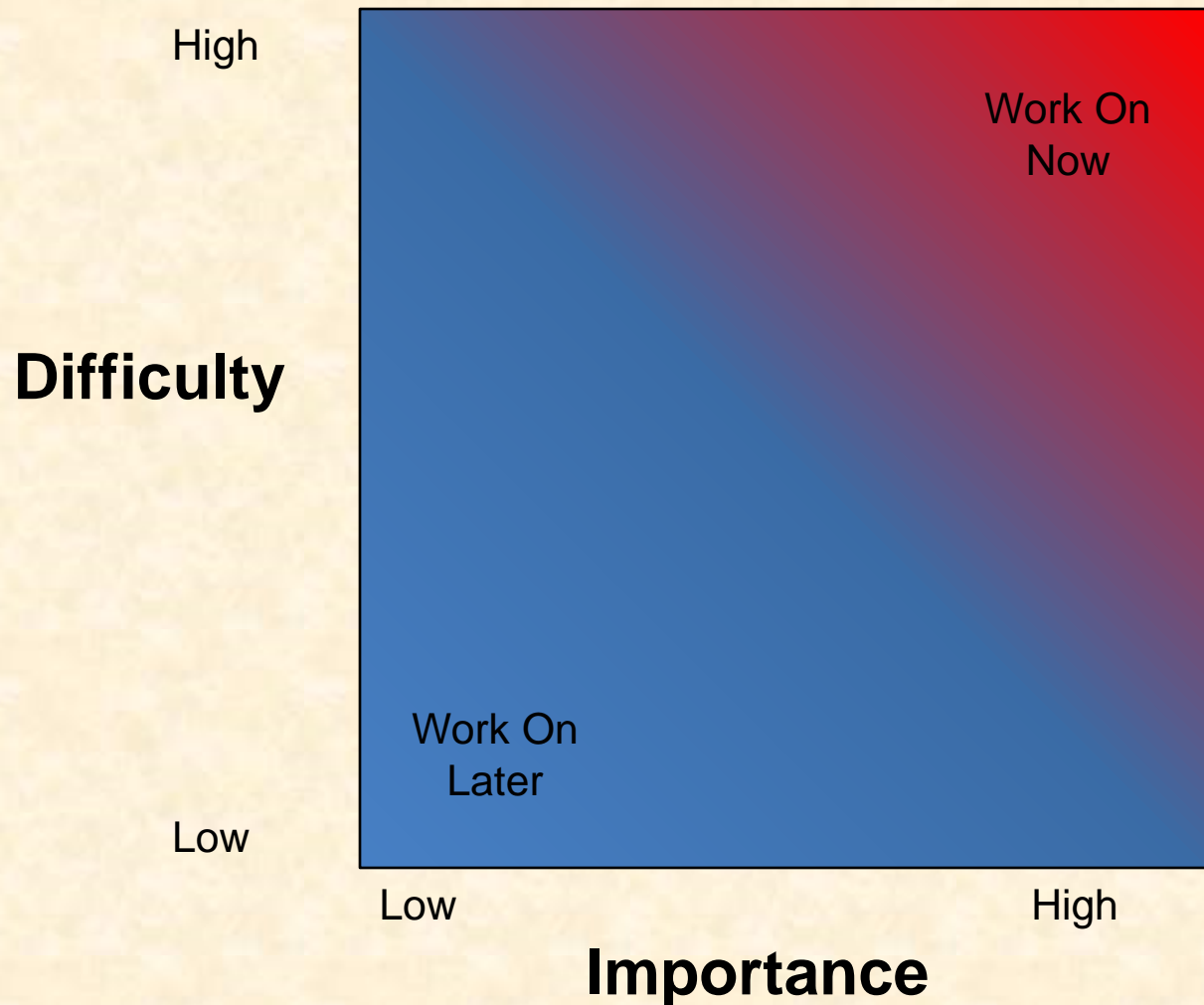


# Prioritizing Risks

- Classify Difficulty
  - High                      Very Hard, No Idea How to Do
  - Medium
  - Low                        Not Hard, Probably Doable
- Classify Importance
  - High                       Showstopper, Must Have
  - Medium
  - Low                        Not Vital, Nice to Have



# Prioritizing Risks



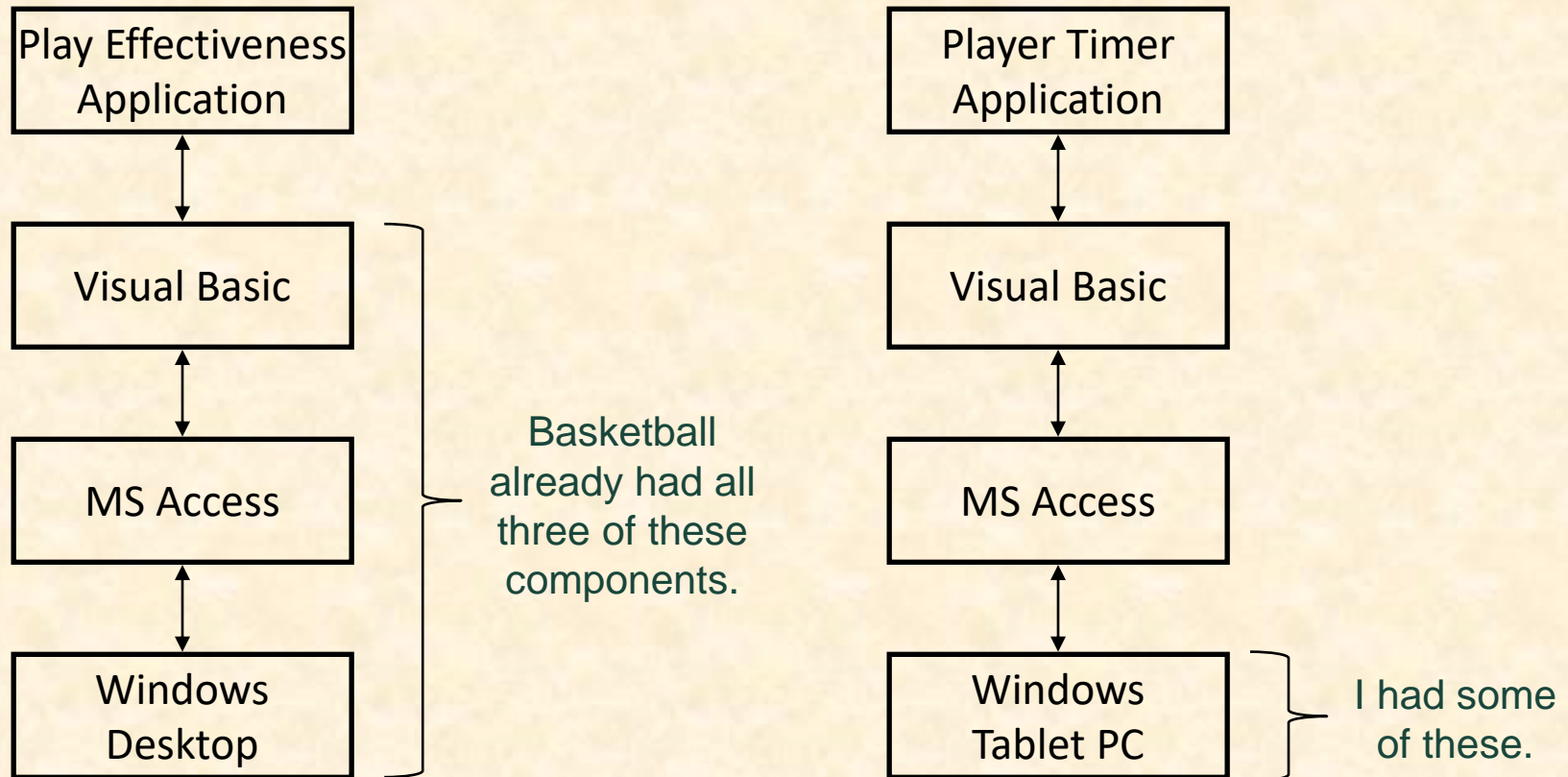
# Case Studies: Basketball Apps

- Play Effectiveness
  - Determine Effectiveness of Plays
  - Record All Plays with Results
  - Produce Reports of Effectiveness
- Player Timer
  - Keep Track of Player Times
  - Record Minutes Played and Rested
  - Use On the Bench, During the Game





# Basketball Apps Architectures



# Basketball Apps Risks

- What SDK should I use?
- Can I write this in Visual Basic?
- How do I make a GUI in VB?
- How do I interface VB with Access?
  - Create/Open/Save a Database?
  - Read/Write Records?
  - Traverse Records?
- How do I implement clocks in Windows?
  - Game Clock?
  - Wall Clock?
- How do I generate a report from Access?



# Mitigating Risks

- Use Existing Resources
  - Including But Not Limited To
    - Faculty
    - Other Students
    - Product Demos
    - Book Sample Code
    - Downloadable Examples
    - Wizards
    - Etc...
  - Test Drive
    - Install
    - Compile
    - Extend
    - Etc...
- Build Prototypes
  - Single Purpose
  - Quick-and-Dirty

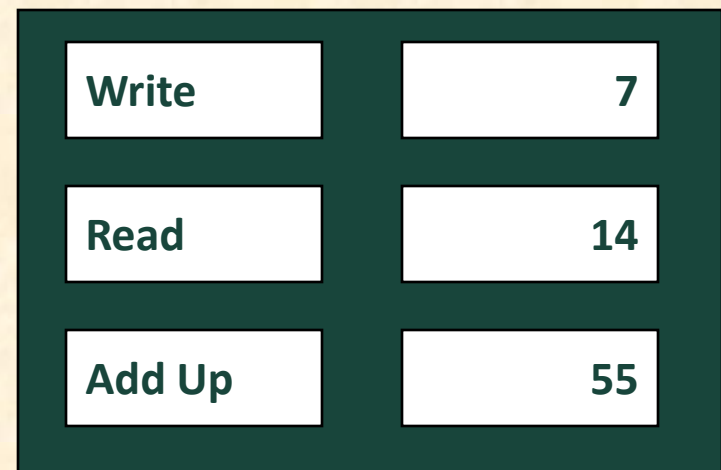
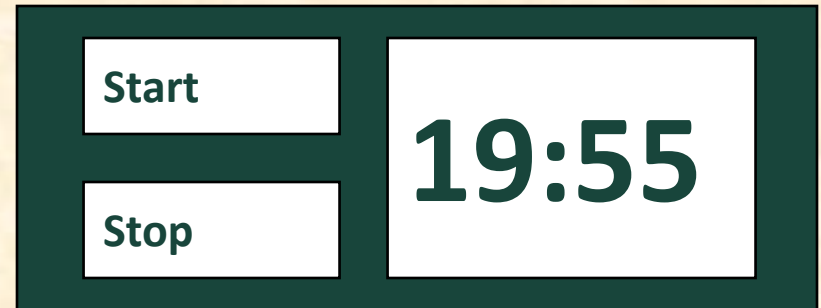
*Nota Bene:*

1. Check license if including in project.
2. Document.
3. Inform client.



# Basketball Apps Risk Mitigation

- Game Clock
  - Start /Stop
  - Counts Down
  - By Minutes:Seconds
- Handling Access Records
  - Write Number
  - Read Number
  - Add Up Numbers



# Risks and Prototypes

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✓ Risks

➤ Prototypes



# Aside: Capstone Transition

- From... “Make one of these.” –CSE Professor
  - Coding
  - Valuable Skills
- ...To “Solve my problem.” –Customer/Client
  - Requirements Gathering
  - Design
  - Architecture
  - Highly Valuable Skills



# Prototypes

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- Developed
  - Early
  - Rapidly
- Implement Subset of the Requirements
- Done for Variety of Reasons
- Are Not Finished Goods
- “Hacking” (Good Sense)

# Why? Answer Questions

## Help Determine...

- Specifications
  - Functional
  - Design
  - Technical
- Usability
- How Existing Code Works
- Programming Languages
- Development Environments
- Operating Environments
- Etc...





# Why? Determine Schedule

Determine how long it will take to...

- ...learn the new programming language.
- ...learn the development environment.
- ...learn the existing code.
- ...convert the existing code.
- ...convert the existing database.
- ...get libraries working.
- ...deploy the application onto an iOS device.
- ...Etc....



# Why? Identify Risks

- Operability
  - How do we make a game clock?
  - Where do we store the data?
- Interoperability
  - How does the game clock work with other tablets?
  - How do the tablets all write to the same database?
- Scalability
  - Will the game clock propagate in real time?
  - Will the database engine keep up?
- Reliability
  - What happens if the clock tablet dies?
  - What happens if the database tablet dies?
- Etc-Ability...



# Speed (to Write)

- Critical
- 2-3 Day Tasks
- Use Whatever Works
  - RAD Languages
  - SDK's
  - IDE's
  - Design Tools
  - Wizards
  - Sample Code
  - Etc...
- Stop When Questions Answered



# Tradeoffs: Speed (to Write) vs...

- Speed (to Write) vs Best Software Practices
  - Testing
  - Documentation
  - Security
  - Software Engineering
  - Usability
  - Performance
  - Coding Standards
  - User Interface Standards
  - Using Real Data
  - Etc...
- Hence, May Not Be Appropriate in Final Deliverable



# Challenge/Danger

- “Hack” Solution
  - It works.
  - It’s **\*a\*** way to do something.

vs

Often My Biggest  
Frustration

- “Correct” Solution
  - It works.
  - It’s the **\*“right”\*** way to do something.  
(There may be more than one “right” way to do something.)



# Basketball Prototypes Case Studies

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## ➤ Play Effectiveness

- Player Timer



# Basketball Play Effectiveness App

- Functional Specifications
  - Determine Effectiveness of Plays
  - Record All Plays with Results
  - Produce Reports of Effectiveness
    - Each Play
    - # of Successes / # of Attempts
- Design Specifications?
- Technical Specifications?



# Initial Meeting with Video Coordinator

## I Learned...

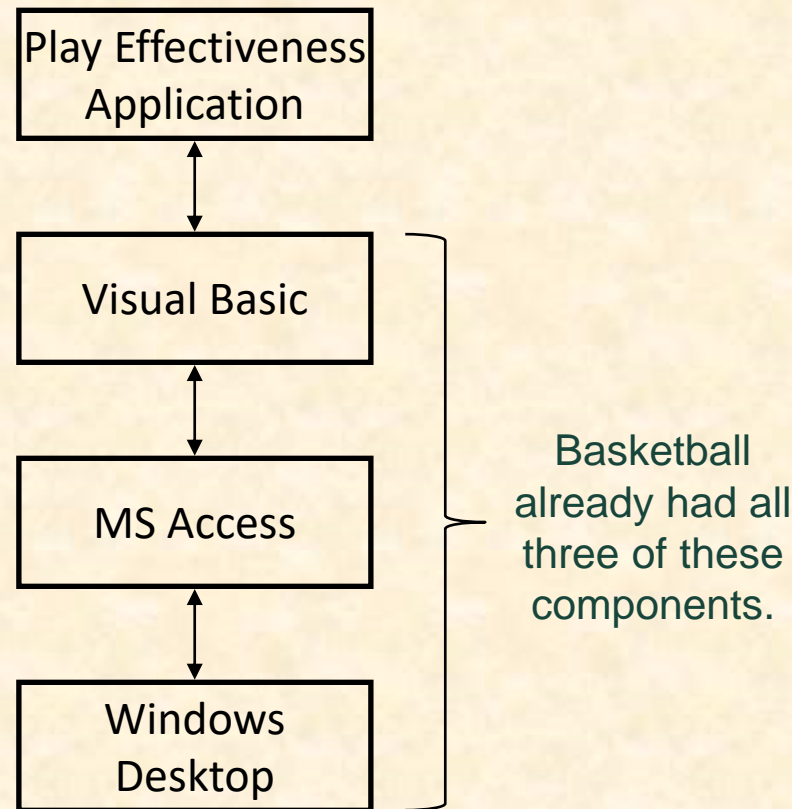
- Done After Game
  - On Desktop Computer
  - From DVR-Like App
- Lots of Plays (~ 200) in Play Book
- ~20-40 Plays Run Per Game
- Plays Categorized
  - Early Offense 1,2 (i.e., Fast Breaks)
  - Offense 1,2 (i.e., Half Court Plays)
  - Special Situations 1,2 (i.e., Out of Bounds)
- Overwhelming ← Can you relate?

The  
Business  
Processes





# Play Effectiveness Architecture



# Risks

- Learning Basketball Business Processes
- Programming in Visual Basic
  - Can this be done in VB?
  - ! Can I learn VB?
- Making a GUI in VB
- Interfacing VB with Access
  - Creating/Opening/Saving a Database
  - Reading/Writing Records
  - Traversing Records
- Generating Reports in Access
- Etc...



BB Stats Alpha V1

Detail

**Game**

<b>Opponent</b>	Harvard University	<b>Location</b>	Boston
<b>Date</b>	July 4, 1776	<b>Number</b>	1776070401

**Play**

<b>P#</b>	48
<b>T</b>	12:34
<b>C#</b>	426
<b>EO1</b>	Run
<b>EO2</b>	Gun
<b>O1</b>	1-4 Screen
<b>O2</b>	Low Post
<b>SS1</b>	SLOB
<b>SS2</b>	Blah
<b>R</b>	Two Pointer
<b>Notes</b>	Feed to Adams. Washington always gets the rebound. Jefferson or Hamilton should take the shot.

**Roster**

<b>1</b>	00:00	00:00	Adams, John
<b>2</b>	00:00	00:00	Jefferson, Tom
<b>3</b>	00:00	00:00	Washington, George
<b>4</b>	00:00	00:00	Franklin, Ben
<b>5</b>	00:00	00:00	Hamilton, Alex

Next Play

# BB PE PV1

(Prototype Version 1)

## Fields

- P# Play Number
- T Time
- C# Clip Number
- EO Early Offense
- O Offense
- SS Special Situations
- R Result

## Nota Bene

- Just Screen Layout
- No Code (Underneath)
- Never Have All Entries Filled at Once



# What I Learned From PV1

[1 of 2]

- Wanted to Identify Plays Within a Possession
- Plays Categorized Series / Set
  - Set is Variation on Series (“Parameterized Plays”)
  - E.g.
    - Series: Thumbs
    - Sets: Up, Down, Circle
    - Plays: Thumbs Up, Thumbs Down, Thumbs Circle
    - CS Paradigm: Thumbs(Up), Thumbs(Down), Thumbs(Circle)
  - 1, 2 Notation
    - EO1 = Early Offense Series
    - EO2 = Early Offense Set
  - ST (Special Teams) Missing

Huge  
Impact On  
Design



# What I Learned From PV1

[2 of 2]

- Results Coded
  - *XN* Missed *N* Pointer (X1, X2, X3)
  - *ON* Made *N* Pointer (O1, O2, O3)
  - *FF* Foul on the Floor
  - *TO* Time Out
  - Etc...
- Wanted to Record Notes on Defense
- Didn't Care About
  - Player Times
  - Video Clip Number (*C#*)



BB Stats Alpha V1

Detail

**Game**

<b>Opponent</b>	Harvard University	<b>Location</b>	Boston
<b>Date</b>	July 4, 1776	<b>Number</b>	1776070401

**Play**

<b>P#</b>	48
<b>T</b>	12:34
<b>C#</b>	426
<b>EO1</b>	Run
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<b>O1</b>	1-4 Screen
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<b>4</b>	00:00	00:00	Franklin, Ben
<b>5</b>	00:00	00:00	Hamilton, Alex

Next Play

**So, from this to...**

# BB PE PV1

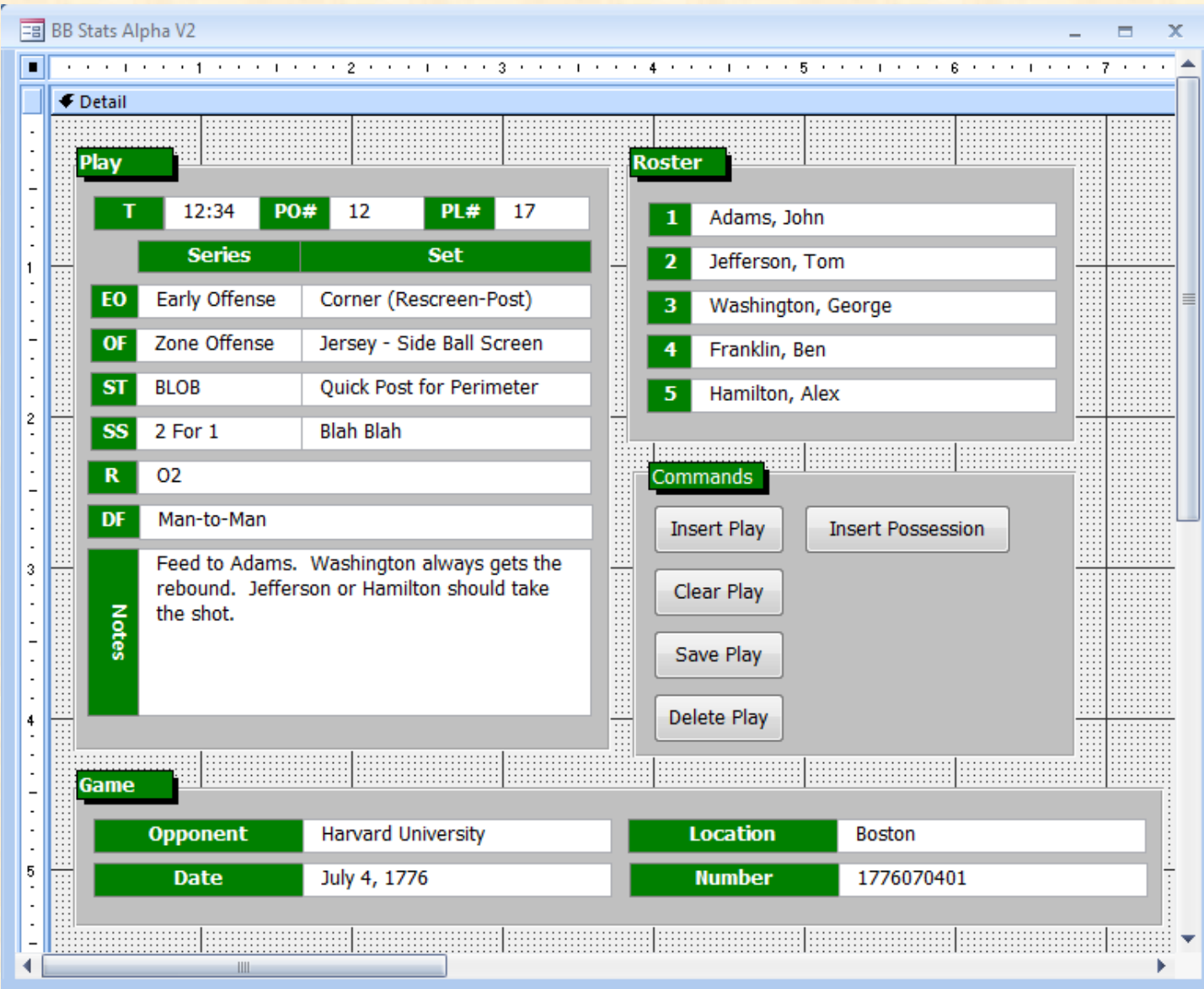
## Fields

- P# Play Number
- T Time
- C# Clip Number
- EO Early Offense
- O Offense
- SS Special Situations
- R Result

## *Nota Bene*

- Just Screen Layout
- No Code (Underneath)
- Never Have All Entries Filled at Once





## BB PE PV2

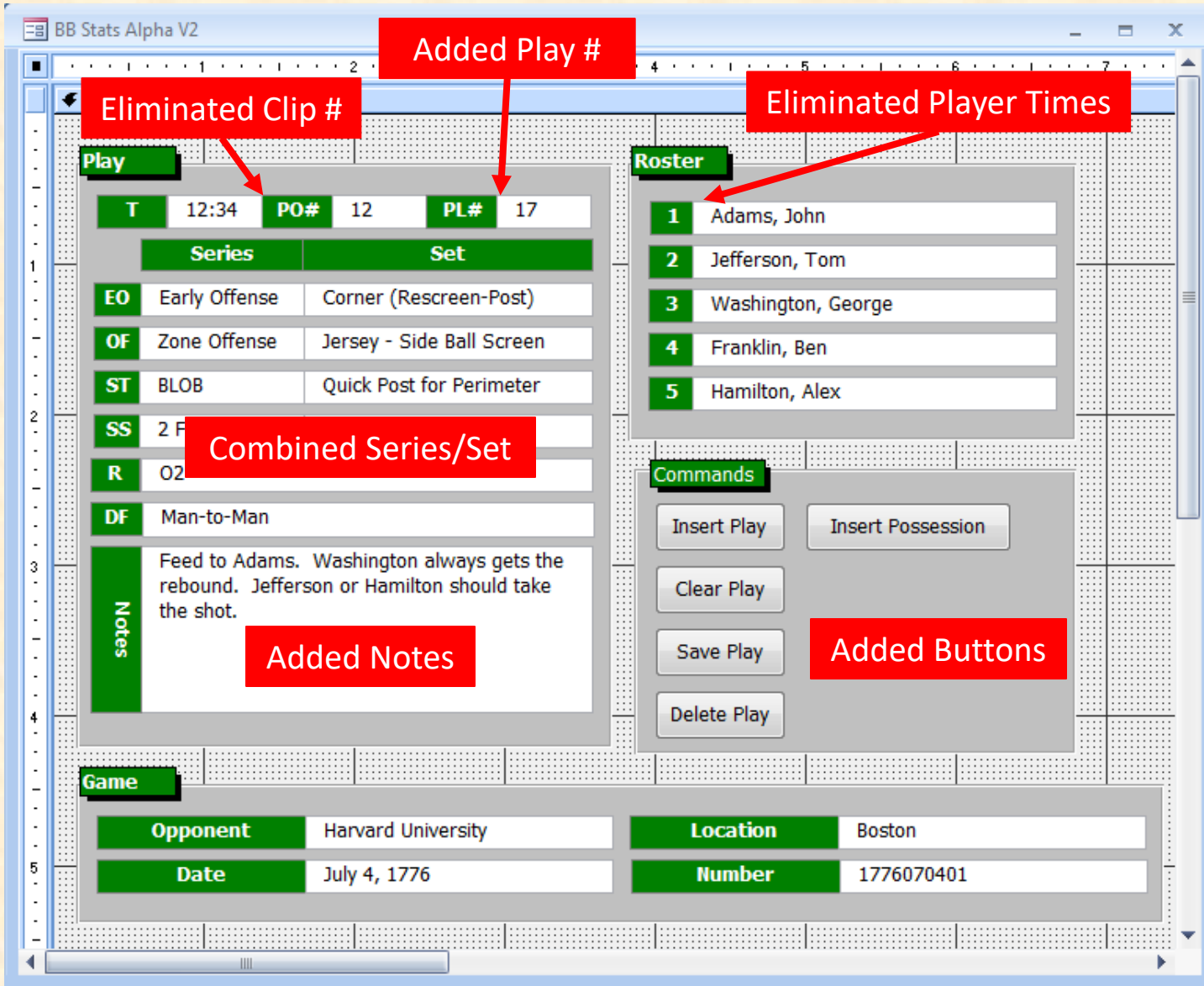
### Fields

- PO#  
Possession Number
- PL#  
Play Number
- SS  
Special Situations
- DF  
Defense

### *Nota Bene*

- Just Screen Layout
- No Code (Underneath)
- Would **NOT** Have Entries in All Fields





## BB PE PV2

### Fields

- PO#  
Possession Number
- PL#  
Play Number
- SS  
Special Situations
- DF  
Defense

### *Nota Bene*

- Just Screen Layout
- No Code (Underneath)
- Would **NOT** Have Entries in All Fields



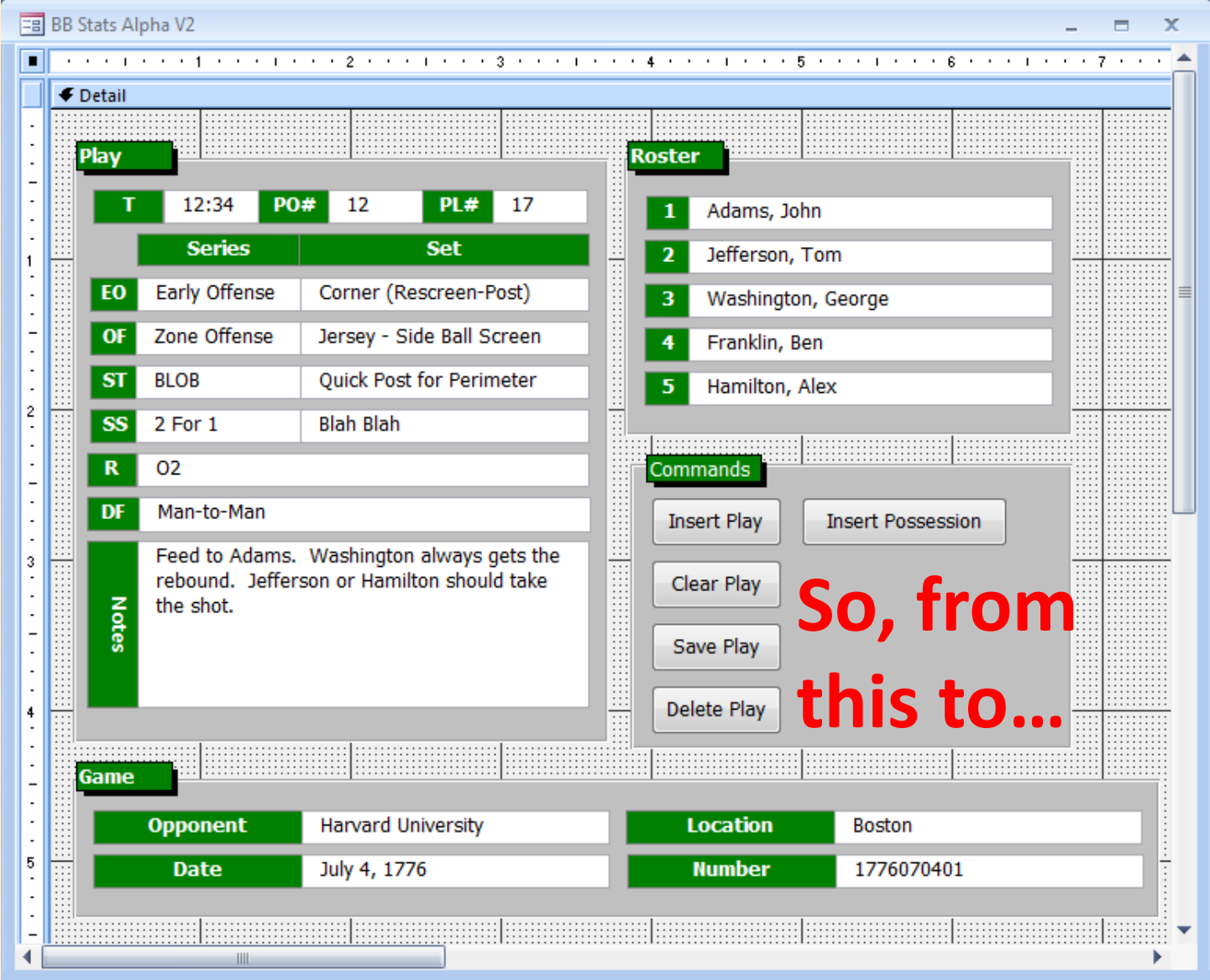


# What I Learned From PV2

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- Wanted to Grade Effectiveness of Plays
- Wanted to Record Player Steals and Assists (Remember this...)
- Needed to Navigate Plays and Possessions
- Wanted to See Running Total Score





## BB PE PV2

### Fields

- PO# Possession Number
- PL# Play Number
- SS Special Situations
- DF Defense

### *Nota Bene*

- Just Screen Layout
- No Code (Underneath)
- Would **NOT** Have Entries in All Fields



### Detail

#### Play

<b>PE#</b>	2	<b>Time</b>	12:34	<b>PL#</b>	17	<b>MSU</b>	37	<b>Op</b>	23
<b>Series</b>			<b>Set</b>			<b>Effectiveness</b>			
<b>EO</b>	Early Offense			Corner (Rescreen-Post)			Great		
<b>ST</b>	BLOB			Quick Post for Perimeter			Poor		
<b>OF</b>	Zone Offense			Jersey - Side Ball Screen			So-So		
<b>R</b>	X			O			Outstanding		
<b>DF</b>	Man-to-Man			Something Else			Good		
<b>SS</b>	2 For 1			Blah Blah			Unreal		

#### Roster

P	Player	S	A
1	Unbound	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Jefferson, Tom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Washington, George	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Franklin, Ben	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hamilton, Alex	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### Commands

**Notes** Feed to Adams. Washington always gets the rebound. Jefferson or Hamilton should take the shot.

#### Game

<b>Opponent</b>	Harvard University	<b>Location</b>	Boston
<b>Date</b>	11/17/2003	<b>Number</b>	1776070401



Added Running Score

Added Steals and Assists

### Play

PE#	2	Time	12:34	PL#	17	MSU	37	Op	23
Series			Set			Effectiveness			
EO	Early Offense		Corner (Rescreen-Post)			Great			
ST	BLOB		Quick Post for Perimeter			Poor			
OF	Zone Offense		Jersey - Side Ball Screen			So-So			
R	X		O			Outstanding			
DF	Man-to-Man		Something Else			Good			
SS	2 For 1		Blah Blah			Unreal			

### Roster

P	Player	S	A
1	Unbound	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Jefferson, Tom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Washington, George	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Franklin, Ben	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hamilton, Alex	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### Commands

Next Play      Next Possession

Previous Play      Previous Possession

Delete Play      Delete Possion

Exit

Added Effectiveness

Augmented Buttons

### Game

Opponent	Harvard University	Location	Boston
Date	11/17/2003	Number	1776070401

Notes

Feed to Adams. Washington always gets the rebound. Jefferson or Hamilton should take the shot.



# What I Learned From PV3

- Wanted...
  - Grades to Be A, B, C, D, F
  - Results Associated With Players
  - Series/Set Combined  
("Thumbs Up" Rather Than "Thumbs", "Up")
  - To Record Player Rebound
- Will be used by...
  - Video Coordinator, GAs, and Managers
  - Very Comfortable with DVR Controls
- Did NOT Want to Record Player Steals or Assists



Detail

Play

PE#	2	Time	12:34	PL#	17	MSU	37	Op	23
Series			Set			Effectiveness			
EO	Early Offense			Corner (Rescreen-Post)			Great		
ST	BLOB			Quick Post for Perimeter			Poor		
OF	Zone Offense			Jersey - Side Ball Screen			So-So		
R	X			O			Outstanding		
DF	Man-to-Man			Something Else			Good		
SS	2 For 1			Blah Blah			Unreal		

Roster

P	Player	S	A
1	Unbound	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Jefferson, Tom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Washington, George	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Franklin, Ben	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Hamilton, Alex	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Commands

Next Play      Next Possession

Previous Play      Previous Possession

Delete Play      Delete Possion

Exit

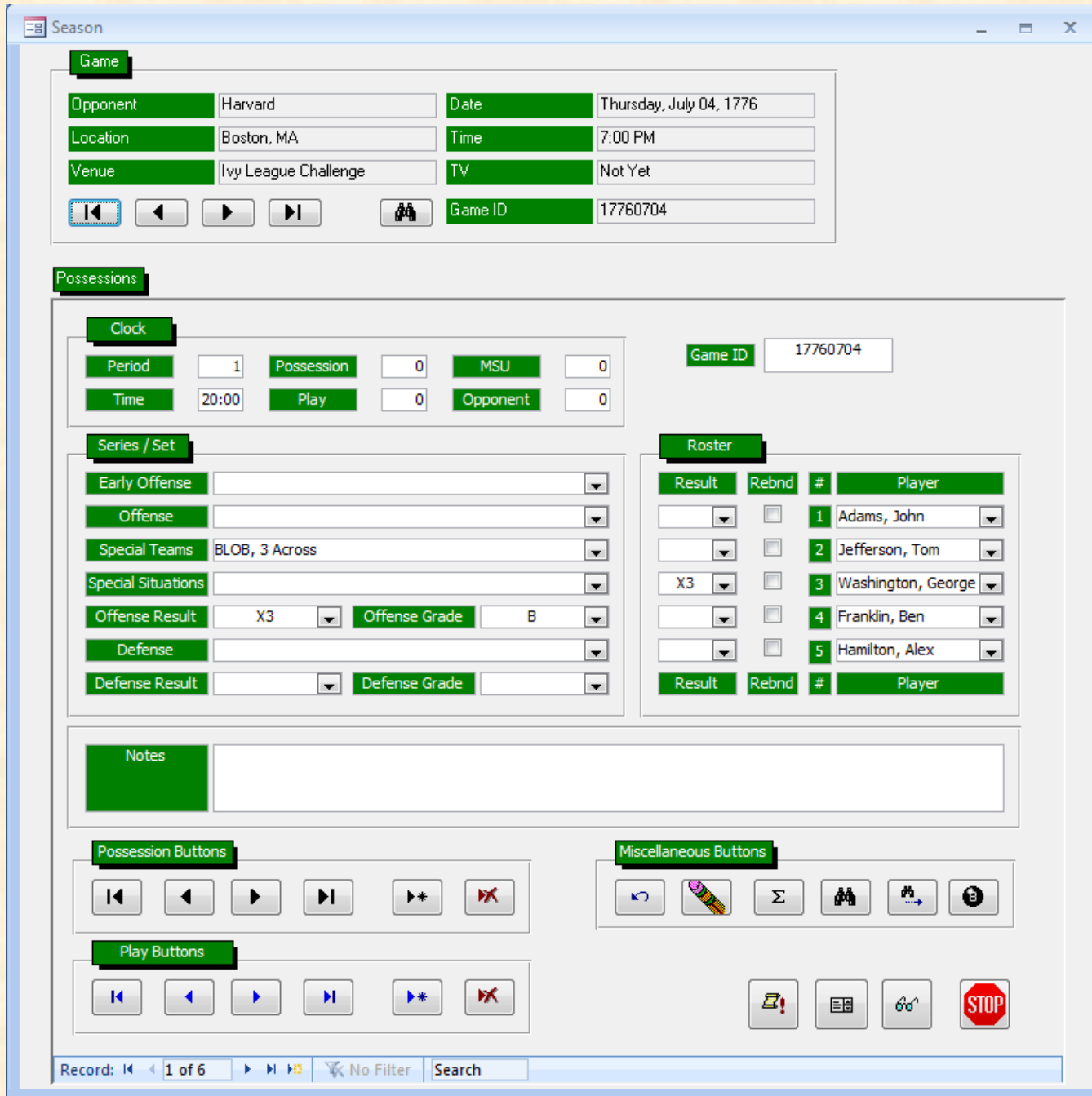
**Notes**  
 Feed to Adams. Washington always gets the rebound. Jefferson or Hamilton should take the shot.

So, from this to...

Game

Opponent	Harvard University	Location	Boston
Date	11/17/2003	Number	1776070401



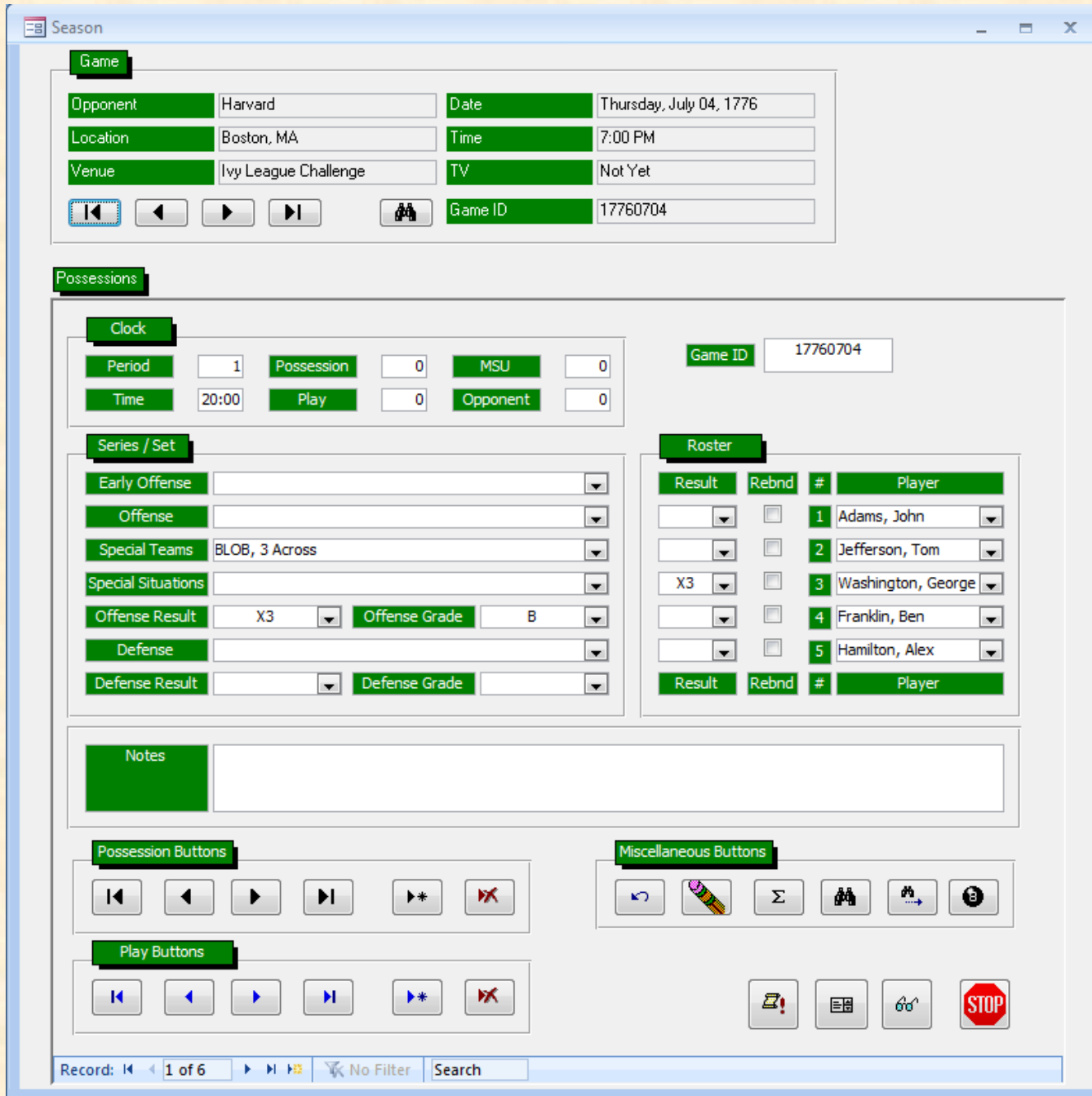


BB PE AV1  
(Alpha Version 1)

First Version  
With Code

Not Much  
Implemented





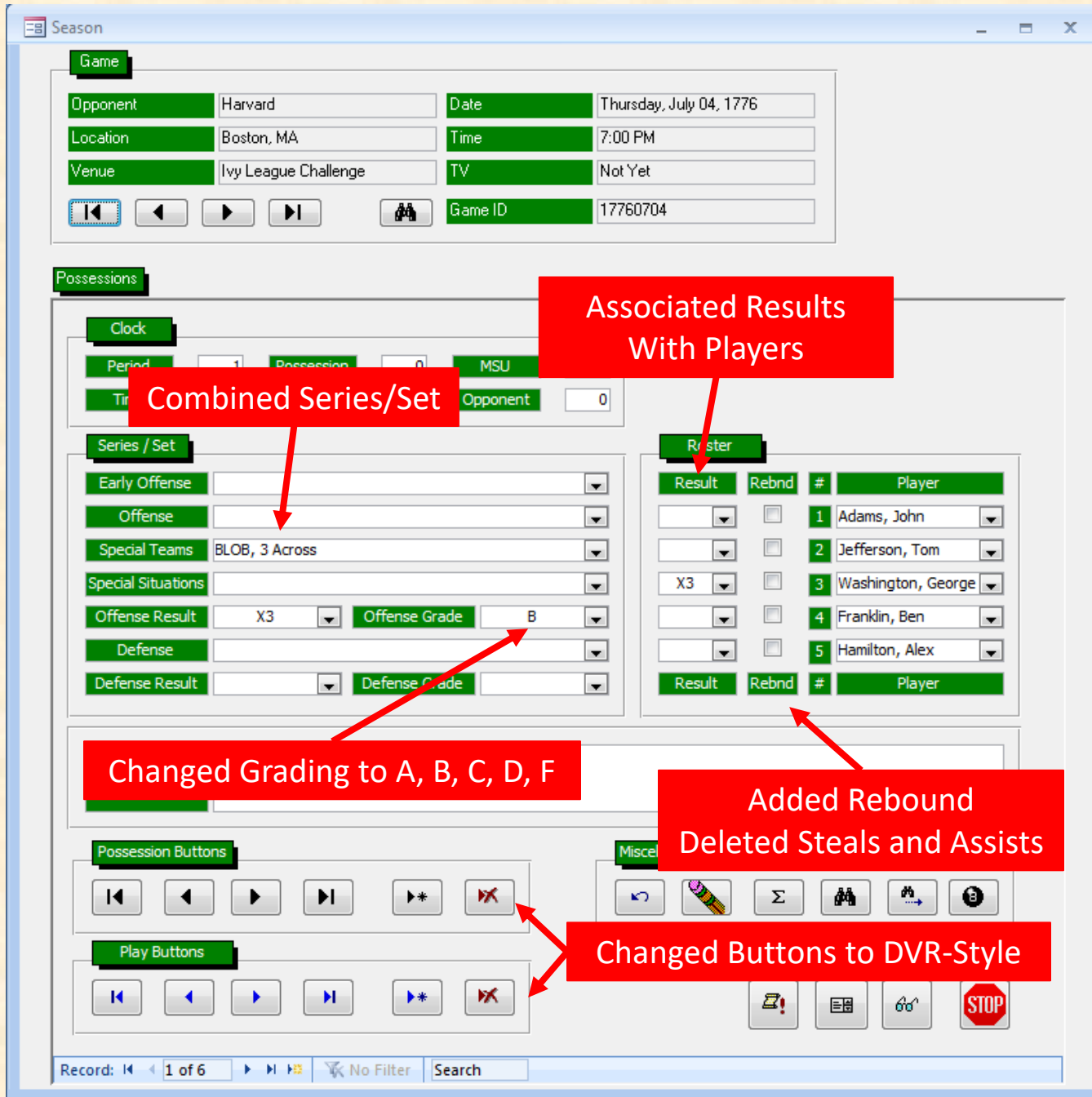
BB PE AV1  
(Alpha Version 1)

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BB PE AV1

(Alpha Version 1)

First Version  
With Code

Not Much  
Implemented



# What I Learned From Alpha 1

- Entering a Play
  - Some Things Calculated Automatically
    - Play/Possession Number
    - Score
  - Most Things Entered With Mouse Via Pull-Down Menus
    - Series / Set
    - Result
  - But Time Entered With Keyboard Via Typing Numbers
- Need
  - Mouse-Only Input
  - Easy Way to Adjust Clock





BB PE AV1  
(Alpha Version 1)

First Version  
With Code

Not Much  
Implemented

So, from  
this to...



Season

**Game**

Opponent: Harvard Date: Thursday, July 04, 1776  
 Location: Boston, MA Time: 7:00 PM  
 Venue: Ivy League Challenge TV: Not Yet  
 Game ID: 17760704

**Possessions**

**Clock**  
 Period: 1 Possession: 1 MSU: 0 Opponent: 0  
 Play: 1 Time: 18:07  
 +10 Secs +1 Sec  
 -10 Secs -1 Sec

**Series / Set**  
 Early Offense: [Dropdown]  
 Offense: 1-4 Series, 1-4 Go  
 Special Teams: [Dropdown]  
 Special Situations: [Dropdown]  
 Offense Result: O2 Offense Grade: [Dropdown]  
 Defense: [Dropdown]  
 Defense Result: [Dropdown] Defense Grade: [Dropdown]

**Roster**

Result	Rebnd	#	Player
[Dropdown]	<input type="checkbox"/>	1	Adams, John
[Dropdown]	<input type="checkbox"/>	2	Jefferson, Tom
O2	<input type="checkbox"/>	3	Washington, George
[Dropdown]	<input type="checkbox"/>	4	Franklin, Ben
[Dropdown]	<input type="checkbox"/>	5	Hamilton, Alex

**Notes**

**Possession Buttons**  
 [Back] [Left] [Right] [Next] [Play] [Stop]

**Miscellaneous Buttons**  
 [Undo] [Eraser] [Sum] [Binoculars] [Map] [Info]

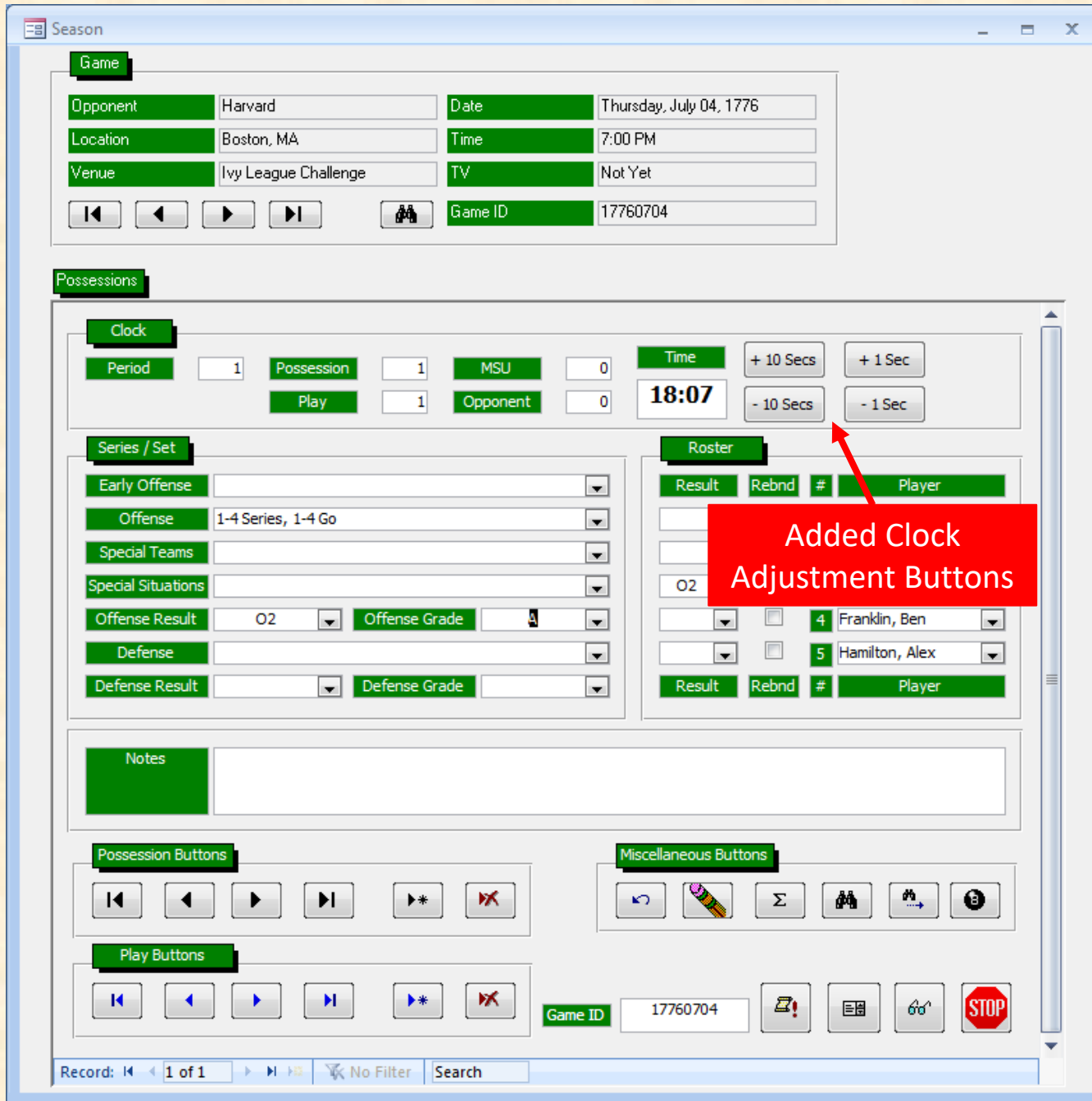
**Play Buttons**  
 [Back] [Left] [Right] [Next] [Play] [Stop]

Game ID: 17760704 [Warning] [List] [Go] [STOP]

Record: 1 of 1 [Filter] No Filter Search

BB PE AV2  
 Still Not Much  
 Implemented





BB PE AV2  
Still Not Much  
Implemented

Added Clock  
Adjustment Buttons



Season

**Game**

Opponent: Harvard Date: Thursday, July 04, 1776  
 Location: Boston, MA Time: 7:00 PM  
 Venue: Ivy League Challenge TV: Not Yet  
 Game ID: 17760704

**Possessions**

**Clock**

Period: 1 Possession: 1 MSU: 0 Opponent: 0  
 Play: 1 Time: 18:07  
 +10 Secs +1 Sec  
 -10 Secs -1 Sec

**Series / Set**

Early Offense: [Dropdown]  
 Offense: 1-4 Series, 1-4 Go [Dropdown]  
 Special Teams: [Dropdown]  
 Special Situations: [Dropdown]  
 Offense Result: O2 [Dropdown] Offense Grade: [Dropdown]  
 Defense: [Dropdown]  
 Defense Result: [Dropdown] Defense Grade: [Dropdown]

**Roster**

Result	Rebnd	#	Player
[Dropdown]	<input type="checkbox"/>	1	Adams, John [Dropdown]
[Dropdown]	<input type="checkbox"/>	2	Jefferson, Tom [Dropdown]
O2 [Dropdown]	<input type="checkbox"/>	3	Washington, George [Dropdown]
[Dropdown]	<input type="checkbox"/>	4	Franklin, Ben [Dropdown]
[Dropdown]	<input type="checkbox"/>	5	Hamilton, Alex [Dropdown]

**Notes**

**Possession Buttons**

[Back] [Left] [Right] [Next] [Play] [Stop]

**Miscellaneous Buttons**

[Undo] [Eraser] [Sum] [Binoculars] [Map] [Info]

**Play Buttons**

[Back] [Left] [Right] [Next] [Play] [Stop]

Game ID: 17760704 [Warning] [List] [Go] [STOP]

Record: 1 of 1 [Filter] No Filter Search

BB PE AV2  
 Still Not Much  
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**Season**

**Game**

Opponent: Harvard Date: Thursday, July 04, 1776  
 Location: Boston, MA Time: 7:00 PM  
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 Game ID: 17760704

**Possessions**

**Clock**

Period: 1 Possession: 1 MSU: 0 Opponent: 0  
 Play: 1 Time: 18:07  
 +10 Secs +1 Sec  
 -10 Secs -1 Sec

**Series / Set**

Early Offense: [Dropdown]  
 Offense: 1-4 Series, 1-4 Go [Dropdown]  
 Special Teams: [Dropdown]  
 Special Situations: [Dropdown]  
 Offense Result: O2 [Dropdown] Offense Grade: [Dropdown]  
 Defense: [Dropdown]  
 Defense Result: [Dropdown] Defense Grade: [Dropdown]

**Roster**

Result	Rebnd	#	Player
[Dropdown]	<input type="checkbox"/>	1	Adams, John [Dropdown]
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O2 [Dropdown]	<input type="checkbox"/>	3	Washington, George [Dropdown]
[Dropdown]	<input type="checkbox"/>	4	Franklin, Ben [Dropdown]
[Dropdown]	<input type="checkbox"/>	5	Hamilton, Alex [Dropdown]

**Notes**

**Possession Buttons**

[Back] [Left] [Right] [Next] [Play] [Stop]

**Miscellaneous Buttons**

[Undo] [Eraser] [Sum] [Binoculars] [Map] [Info]

**Play Buttons**

[Back] [Left] [Right] [Next] [Play] [Stop]

Game ID: 17760704 [Warning] [List] [Go] [STOP]

Record: 1 of 1 [Filter] No Filter Search

# BB PE BV1

(Beta Version 1)



# Basketball Prototypes Case Studies

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✓ Play Effectiveness

➤ Player Timer



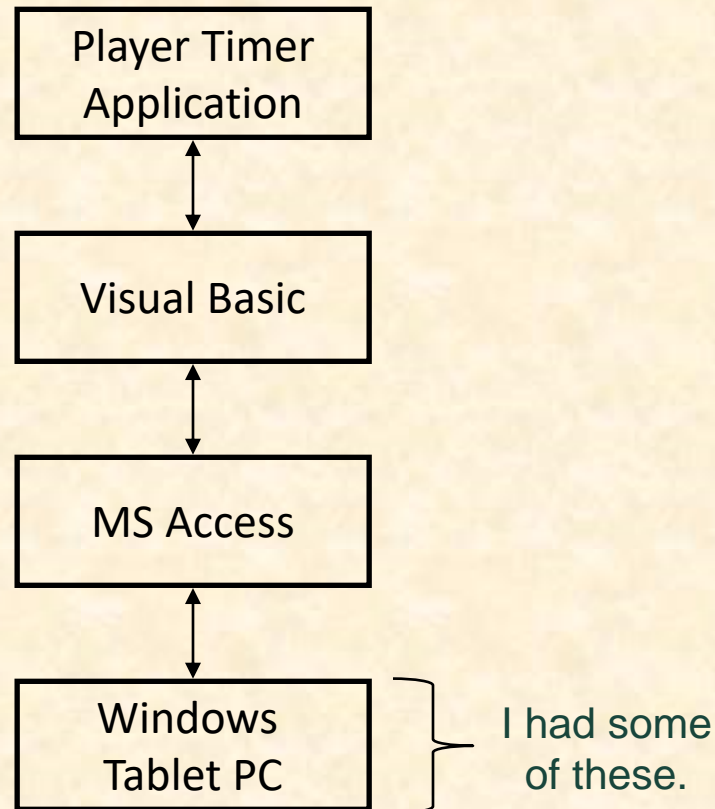


# Player Timer App

- Keep Track of Player Times
- For Each Player Record
  - Minutes Played
    - Game Clock Time
    - Consecutive & Total
  - Minutes Rested
    - Wall Clock Time
    - Consecutive
- Must
  - Be Usable on the Bench, During the Game
  - Be Portable and Not Require Electrical Outlet
  - Feel Like a Pen and a Clipboard



# Player Timer App



# Risks

- Learning Basketball Processes
- Implementing Clocks in Windows?
  - Game Clock
  - Wall Clock
- Very Limited Screen Real Estate
  - Different Problem Than Mobile App
  - Must Feel Like Clipboard and Single Piece of Paper
- Computing and Displaying Cumulative Times
- Hidden Risk (“Danger Will Robinson!”)



# Player Timer Development

- Knew Exactly What They Wanted, So...
- Designed “Final” Version
  - User Interface
  - Data Base Schema
  - Etc...
- Coded “Final” Version
- Bench Tested “Final” Version
- Field Tested “Final” Version
  - In Practice Scrimmage
  - Totally and Completely Unusable
- Scrapped “Final” Version UI and Started Over

**Huge  
Mistake!**

Aside: Great Example of  
Front-End / Back-End  
Architecture and Design



Player Timer - Spartan Basketball Stats

Home

Period **1** Michigan State Spartans Men's Basketball Time **16:19**

**Start the Clock**

Activate All Warnings	Select Player	Checked Out				Check Player In / Out	Checked In			
		Time		Player			Player		Time	
		Current	Remaining	#	Name		#	Name	Current	Remaining
<input checked="" type="checkbox"/>	1	1:12	1:48			←	3	Allen	0:04	3:56
<input checked="" type="checkbox"/>	2	1:52	1:08	41	Gray	→			0:33	3:27
<input checked="" type="checkbox"/>	3	0:00	3:00	23	Green	→			0:00	4:00
<input checked="" type="checkbox"/>	4	0:00	3:00			←	40	Herzog	3:07	0:53
<input checked="" type="checkbox"/>	5	0:00	3:00	0	Ibok	→			0:00	4:00
<input checked="" type="checkbox"/>	6	0:27	2:33	1	Lucas	→			3:37	0:24
<input checked="" type="checkbox"/>	7	0:00	3:00	34	Lucious	→			0:00	4:00
<input checked="" type="checkbox"/>	8	0:00	3:00			←	2	Morgan	3:41	0:20
<input checked="" type="checkbox"/>	9	0:00	3:00	10	Roe	→			0:00	4:00
<input checked="" type="checkbox"/>	10	0:00	3:00			←	15	Summers	2:58	1:02
<input checked="" type="checkbox"/>	11	0:00	3:00			←	14	Suton	3:41	0:20
<input checked="" type="checkbox"/>	12	0:00	3:00	5	Walton	→			0:00	4:00

**Start the Clock**

View Game Stats  Check Out All Begin the Period End the Period

Load Roster Open Exit

Form View

Player Timer

# Software Updates

- Enable Clock Adjustments (While Clock Stopped)
- Enable Check In/Out By Touching
  - Check In/Out Button
  - Player Name
  - Player Slot
- Allow > 5 Players Checked In (While Clock Stopped)
- Enable Pending Check In (While Clock Running)
- Eliminate All Modal Dialog Boxes



# Basketball Prototypes Case Studies

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✓ Play Effectiveness

✓ Player Timer



# Risks and Prototypes

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✓ Risk

✓ Prototypes





# Questions?

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# What's ahead?

[1 of 4]

- Team Photos
  - For Website and Design Day Booklet
  - Formal Team Photo.
  - Using Zoom (instead of Teams for Better Layout)
  - Screen Capture.
  - Dress is business casual.
  - TAs will make schedule.
- Apple Developer License
  - Request Invitation from James or Luke
  - Team Members are Members
  - James and Luke are Admins
- Illness Absences
  - From Meetings and/or From “Working”
  - Inform TA
  - Excused Illness Absence Requires Document
    - Signed by a Medical Doctor
    - Stating You Are Too Sick to Attend All-Hands Meeting and/or Do Work



# What's ahead?

[2 of 4]

- All-Hands Meetings
  - ~~09/02: Capstone Overview~~
  - ~~09/09: Capstone Overview~~
  - ~~09/14: Risks and Prototypes~~
  - 09/16: Team Status Report Presentations
  - 09/21: Project Plan
  - 09/23: Schedule and Teamwork
  - 09/28: Team Project Plan Presentations
  - 09/30: Team Project Plan Presentations
  - 10/05: Team Project Plan Presentations
  - 10/07: Team Project Plan Presentations



# What's ahead?

[3 of 4]

- Team Status Report Presentations
  - [PowerPoint Template](#)
  - Due 11:59 p.m. ET, Tuesday, September 15 ← **Tomorrow Night**
  - Email to Dr. D.
    - Subject: Team [Team Name]: Status Report Presentation  
Subject: Team Auto-Owners: Status Report Presentation
    - Attachment: team-[team-name]-status-report-presentation.pptx  
Attachment: team-urban-science-status-report-presentation.pptx
- PowerPoint 365
  - Microsoft Windows Version Required
  - ! (Use Windows PowerPoint 365) ⇒ !(Processed Correctly)
- PowerPoint Slide Deck Submission Instructions
  - Read Carefully
  - File Name Conventions
    - All Lower Case
    - Replace Blanks with Dashes
    - Examples
      - ❖ “Quicken Loans” → “quicken-loans”
      - ❖ “team-[team-name]-status-report.pptx” → “team-quicken-loans-team-status-report.pptx”
  - Submit to Dr. D. and your client by the deadline.
  - ! (Submitted Correctly) ⇒ !(Processed Correctly)



# What's ahead?

[4 of 4]

- Split All-Hands Meetings
  - Split by James' and Luke's Capstone Teams
  - Two Public Microsoft Teams Channels
    - James Teams
    - Luke Teams
- Dr. D. Will Combine Team Slide Decks into Two Slide Decks By TA
  - To Speed Things Up During Meeting
  - Do NOT Modify Master Slide
  - Must Use Windows Version of Microsoft Office 365
- Each Team Presents
  - TA Will Be Microsoft Teams Presenter
  - TA Will Share PowerPoint Slide Show (and "Drive")
  - At Most 4.5 Minutes (Rehearse Timing)
  - Single or Multiple Team Speakers (Your Choice)



# 09/16: Status Report Presentation

**Team [Team Name]**

**The Capstone Experience**

Dr. Wayne Dyksen

Department of Computer Science and Engineering  
Michigan State University

Fall 2020



**Delete this slide.**

# Status Report Instructions

- Use the Microsoft Windows version of PowerPoint.
- Required Template
  - Do not edit the master slides.
  - Do not change the organization or number of slides.
  - Make your presentation fit within these four slides.
- Content
  - For the slide titles, replace [Team Name] with your company name as in “Team Auto-Owners” and [Project Title] by the project title posted online.
  - All presentations will be posted on the course web site so do not include company confidential information or anything that your client would not want posted.
  - Delete this slide from the presentation.
- Presenting
  - The order of the presentations during our meeting will be team numerical order.
  - The time limit for your presentation is 4.5 minutes, which will be strictly enforced. Practice your presentation to ensure that you will finish within the allotted time.
- Submission by Email ← **Read this carefully.**
  - All presentations are due via email to me and to your client by 11:59 p.m., Tuesday, September 15. Send your presentation to your client in a separate email; do not cc me.
  - For subject, use “Team [Team Name]: Status Report Presentation” as in “Team Urban Science: Status Report Presentation”.
  - Attach the PowerPoint source file named “team-[team-name]-status-report-presentation.pptx” as in team-auto-owners-status-report-presentation.pptx. Use all lower case and replace blanks by dashes in your filename.
  - Include some (professional) text in the body to avoid being sent to my junk folder and to practice being a professional.



# Team [Team Name]

## Status Report

[1 of 4]

### [Project Title]

- Project Overview

- Description Point 1
- Description Point 2
- Description Point 3
- Description Point 4

Status Information:

Think clicking “Status” on an Amazon order.

- You bought this on September 2. Helpful?
- We’re going to send this to you. Satisfied?
- People who bought this also bought.... We good?

What’s the \$\*(%(\$\*-ing status of my order?

**Delete this textbox.**

- Project Plan Document

- Status Point 1
- Status Point 2
- Status Point 3
- Status Point 4

Include status information.

What’s the status of your project plan document?

Have you started it?

How much have you written?

What percentage complete is it?

**Delete this textbox and the brace to the left.**





# Team [Team Name]

## Status Report

[2 of 4]

### [Project Title]

- Server Systems / Software
  - Description &/or Status Point 1
  - Description &/or Status Point 2
  - Description &/or Status Point 3
- Development Systems / Software
  - Description &/or Status Point 1
  - Description &/or Status Point 2
  - Description &/or Status Point 3

Include status information.

Are all systems up and running?

Have you tested everything?

**Delete this textbox and the  
brace to the left.**



# Team [Team Name]

## Status Report

[3 of 4]

### [Project Title]

- Client Contact

- Status Point 1
- Status Point 2

- Team Meetings

- Status Point 1
- Status Point 2

- Team Organization

- Description Point 1
- Description Point 2

Include status information.

Have you talked with/met with your client?

Have you scheduled a weekly conference call? When?

Have you scheduled an in-person meeting? When?

How many times has your team met so far?

Have you scheduled team meetings? How often?

**Delete this textbox and the brace to the left.**

Include status information.

Who's doing what?

**Delete this textbox and the brace to the left.**



# Team [Team Name]

## Status Report

[4 of 4]

### [Project Title]

#### Risks

- Risk 1
  - Description
  - Mitigation
- Risk 2
  - Description
  - Mitigation
- Risk 3
  - Description
  - Mitigation
- Risk 4
  - Description
  - Mitigation

List only “real” risks. For example, learning a new computer languages is **not** a risk for an MSU CSE student.

Give “useful” explanations of how you are going to mitigate each risk. For example, “we will learn how to do it” is **not** a useful explanation.

**Delete this textbox.**



# Questions?

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MICHIGAN STATE UNIVERSITY

# VIRTUAL ENGINEERING EXCHANGE

SEPT, 11 - 18

COMPUTER SCIENCE + DATA SCIENCE ENGINEERING  
THURS. SEPT. 17 | 4-7PM

SIGN UP IN HANDSHAKE  
TODAY!

CONNECT WITH  
50+ COMPANIES



# Evolutio

- Evolutio
  - AppDynamics Consultant to Fortune 500 Companies
  - Home Office in Chicago
  - Consultants work from home and on site.
- Recruiting CSE Seniors and Alumni
  - Two MSU Career Fairs
  - Handshake
- Many Open Interview Spots
  - Jordan Cobe (Holt, MI; Capstone Team Contact)
  - Bob Dyksen (St. Louis, MO; Dr. D.'s Son)



# COVID Considerations Reprise

- Wear a mask.
  - In Public Places Including Campus
  - Cover your mouth and nose.
- Ensure social distancing.
- Wash your hands frequently.
- Carry and use hand sanitizer.
- Avoid “social gatherings.”
  - Any and All
  - Even 25 or Less People
- MSU’s Self-Quarantine Requirements
  - For 14 days, Until 11:59 p.m. Saturday, September 26
  - Violators may be suspended.

