

01/21: Risks and Prototypes

The Capstone Experience

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

01/21: Announcements

- Check Website Team Photo Names and Hometowns
- Use Google Calendar
 - Must Use MSU Email Address
 - Watch for Double Booking
- Apple Developer License
 - Request Invitation from Dr. D.
 - Team Members are Members
 - Malcolm is Admin
- PowerPoint Slide Deck Submission Instructions
 - Read Carefully
 - File Name Conventions
 - All Lower Case
 - Replace Blanks with Dashes
- Does anyone need equipment?
- Project Plan Document and Presentation
 - Presenting and Due Dates
 - Schedule Conflicts
 - Read READ ME
- Issues? Problems? Questions?



Risks and Prototypes

➤ 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

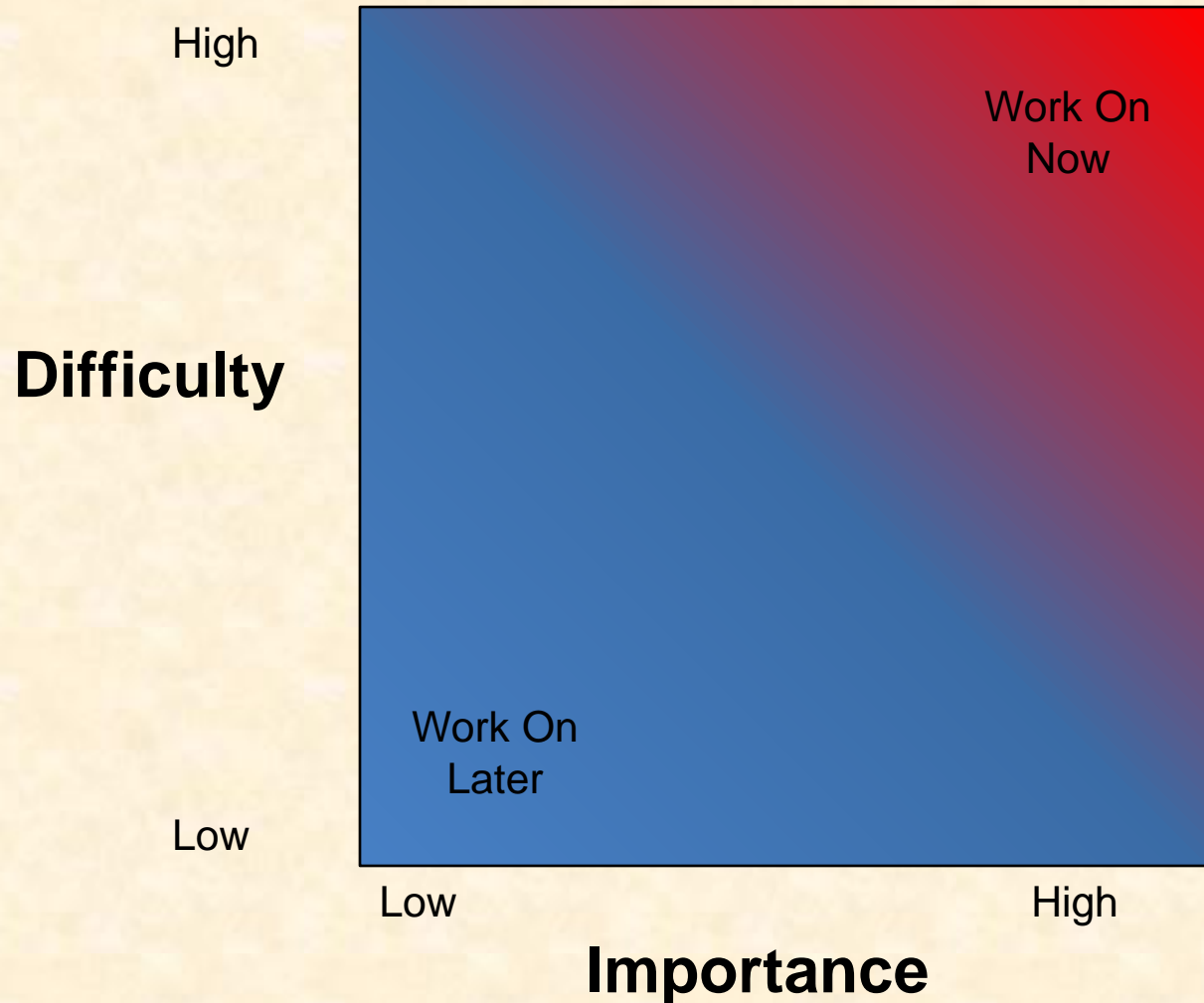
Including but not limited to...

- 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

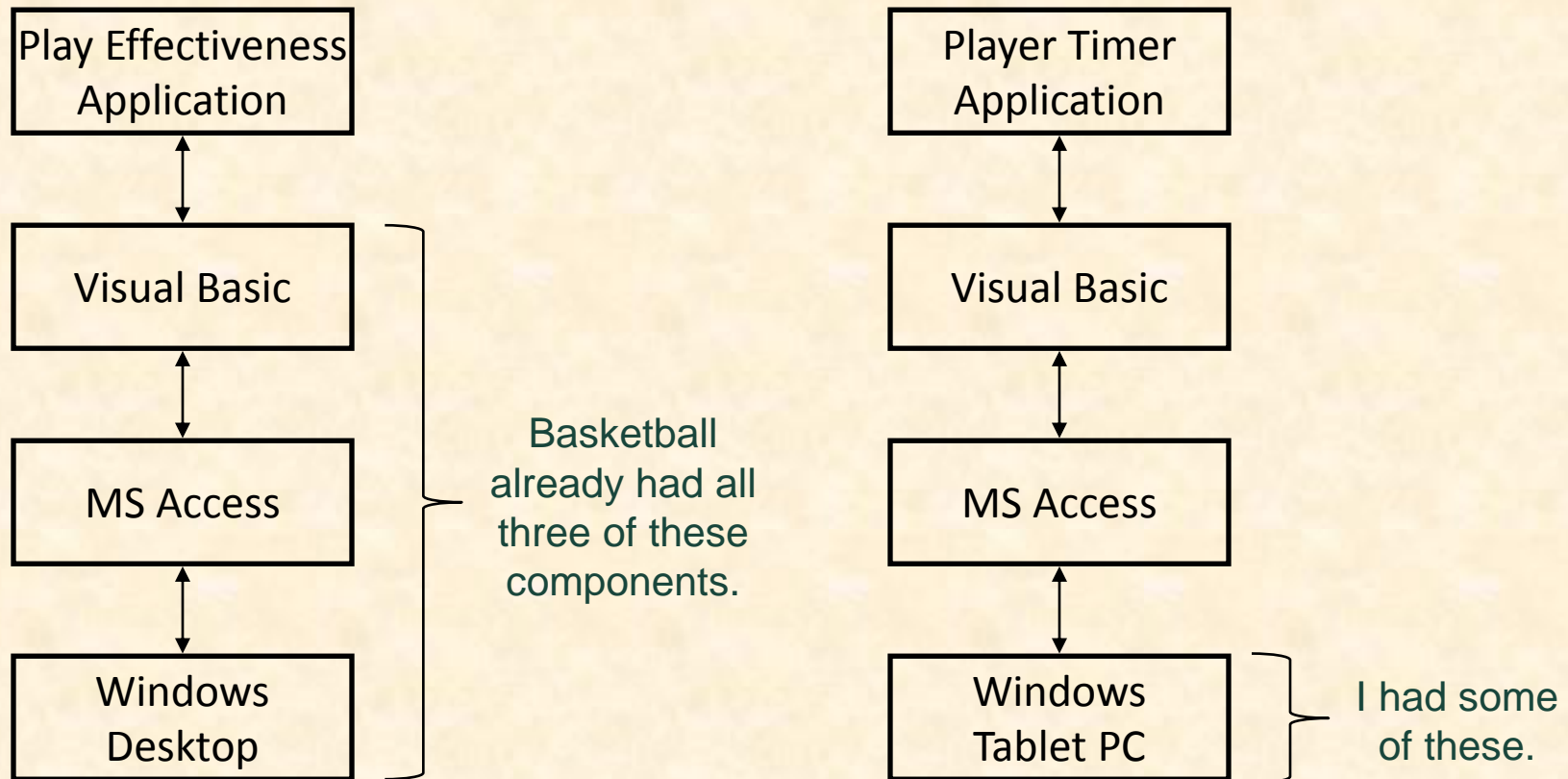


Case Studies: Basketball Apps

- 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
 - On the Bench, During the Game



Basketball Apps Architectures



Basketball Apps Risks

- What SDK should I use?
- How do I program in Visual Basic?
- How do I generate a report from Access?
- 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 would you
classify these risks?



Mitigating Risks

- Use Existing Resources

- Including But Not Limited To

- 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

Start	19:55
Stop	

Write	7
Read	14
Add Up	55



Risks and Prototypes

✓ Risks

➤ Prototypes

Prototypes

- 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
- What to Panic About
- 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? Reduce Risk

- 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 vs Best Practices
 - Testing
 - Documentation
 - Security
 - Software Engineering
 - Usability
 - Performance
 - Coding Standards
 - User Interface Standards
 - Using Real Data
 - Etc...
- Hence, Normally Not Appropriate in Final Deliverable

Challenge/Danger

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

vs

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

Often My Biggest
Frustration



Basketball Prototypes Case Studies

- Play Effectiveness
- Player Timer
- Radio Stats
- Real Time Play Stats
- Plus/Minus



Play Effectiveness App

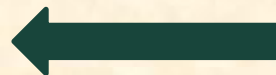
- Functional Specifications
 - Determine Effectiveness of Plays By
 - Recording All Plays with Results
 - Producing Reports of Effectiveness
 - Each Play
 - # of Successes / # of Attempts
- Design Specifications?
- Technical Specifications?



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

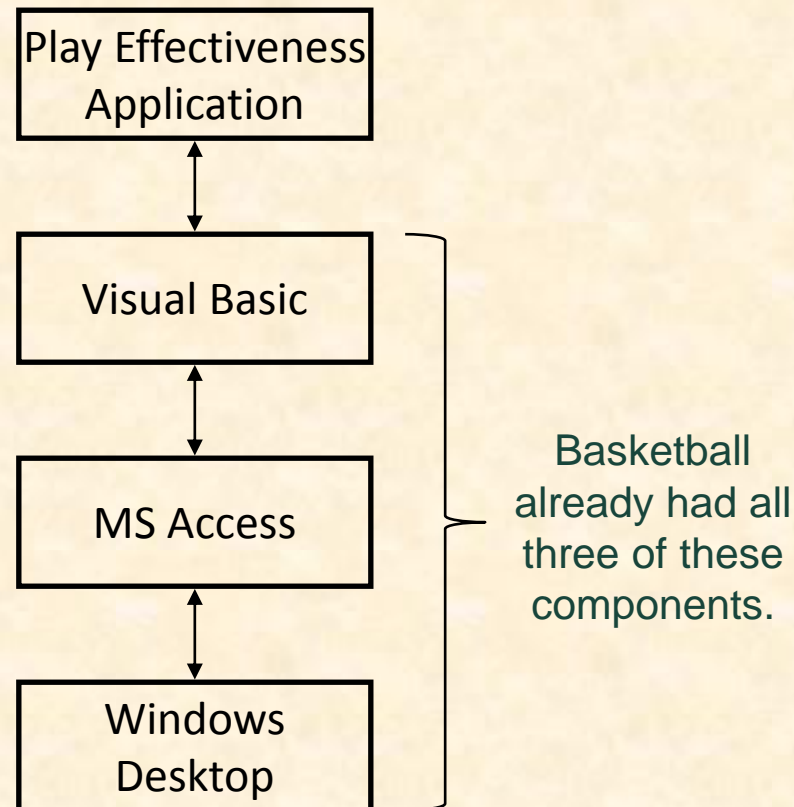


Can you relate?

The
Business
Processes



Play Effectiveness Architecture



Risks

- Learning Basketball Business Processes
- Programming in Visual Basic
- 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

Opponent	Harvard University	Location	Boston
Date	July 4, 1776	Number	1776070401

Play

P#	48
T	12:34
C#	426
EO1	Run
EO2	Gun
01	1-4 Screen
02	Low Post
SS1	SLOB
SS2	Blah
R	Two Pointer
Notes	Feed to Adams. Washington always gets the rebound. Jefferson or Hamilton should take the shot.

Roster

1	00:00	00:00	Adams, John
2	00:00	00:00	Jefferson, Tom
3	00:00	00:00	Washington, George
4	00:00	00:00	Franklin, Ben
5	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
 - 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

Opponent	Harvard University	Location	Boston
Date	July 4, 1776	Number	1776070401

Play

P#	48
T	12:34
C#	426
EO1	Run
EO2	Gun
O1	1-4 Screen
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1	00:00	00:00	Adams, John
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3	00:00	00:00	Washington, George
4	00:00	00:00	Franklin, Ben
5	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 Stats Alpha V2

Detail

Play

T 12:34 PO# 12 PL# 17

	Series	Set
EO	Early Offense	Corner (Rescreen-Post)
OF	Zone Offense	Jersey - Side Ball Screen
ST	BLOB	Quick Post for Perimeter
SS	2 For 1	Blah Blah
R	O2	
DF	Man-to-Man	
Notes	Feed to Adams. Washington always gets the rebound. Jefferson or Hamilton should take the shot.	

Roster

1	Adams, John
2	Jefferson, Tom
3	Washington, George
4	Franklin, Ben
5	Hamilton, Alex

Commands

Insert Play Insert Possession

Clear Play

Save Play

Delete Play

Game

Opponent	Harvard University	Location	Boston
Date	July 4, 1776	Number	1776070401

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

- 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 Score

BB Stats Alpha V2

Detail

Play

T 12:34 PO# 12 PL# 17

	Series	Set
EO	Early Offense	Corner (Rescreen-Post)
OF	Zone Offense	Jersey - Side Ball Screen
ST	BLOB	Quick Post for Perimeter
SS	2 For 1	Blah Blah
R	O2	
DF	Man-to-Man	
Notes	Feed to Adams. Washington always gets the rebound. Jefferson or Hamilton should take the shot.	

Roster

1	Adams, John
2	Jefferson, Tom
3	Washington, George
4	Franklin, Ben
5	Hamilton, Alex

Commands

Insert Play Insert Possession

Clear Play

Save Play

Delete Play

Game

Opponent	Harvard University	Location	Boston
Date	July 4, 1776	Number	1776070401

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

So, from
this to...



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		

Notes

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

Game

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

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	



What I Learned From PV3

- Wanted...
 - Grades to Be A, B, C, D, F
 - Results to Be X1, O1, X2, O2,...
 - 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 Familiar 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		

Notes

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

So, from
this to...

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

Game

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



Season

Game

OpponentHarvardDateThursday, July 04, 1776

LocationBoston, MATime7:00 PM

VenueIvy League ChallengeTVNot Yet

⏮ ⏪ ⏩ ⏭ ⏮ ⏭

Game ID17760704

Possessions

Clock

Period1Possession0MSU0

Time20:00Play0Opponent0

Game ID17760704

Series / Set

Early Offense

Offense

Special TeamsBLOB, 3 Across

Special Situations

Offense ResultX3Offense GradeB

Defense

Defense ResultDefense Grade

Roster

ResultRebnd#Player

1Adams, John

2Jefferson, Tom

X33Washington, George

4Franklin, Ben

5Hamilton, Alex

ResultRebnd#Player

Notes

Possession Buttons

⏮ ⏪ ⏩ ⏭ ⏮ ⏭

Miscellaneous Buttons

⏮ ⏪ ⏩ ⏭ ⏮ ⏭

Play Buttons

⏮ ⏪ ⏩ ⏭ ⏮ ⏭

Record: 1 of 6 No Filter Search

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



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: 0 MSU: 0

Time: 20:00 Play: 0 Opponent: 0

Game ID 17760704

Series / Set

Early Offense: [Dropdown]

Offense: [Dropdown]

Special Teams: BLOB, 3 Across [Dropdown]

Special Situations: [Dropdown]

Offense Result: X3 [Dropdown] Offense Grade: B [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]
X3 [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

[Previous] [Previous] [Next] [Next] [Next] [Next]

Play Buttons

[Previous] [Previous] [Next] [Next] [Next] [Next]

Miscellaneous Buttons

[Undo] [Eraser] [Sum] [Home] [Refresh] [Stop]

Record: 1 of 6 No Filter Search

BB PE AV1

(Alpha Version 1)

First Version
With Code

Not Much
Implemented

So, from
this to...



Season

Game

OpponentHarvardDateThursday, July 04, 1776

LocationBoston, MATime7:00 PM

VenueIvy League ChallengeTVNot Yet

Game ID17760704

Possessions

Clock

Period1Possession1MSU0Time18:07

Play1Opponent0

Series / Set

Early Offense

Offense1-4 Series, 1-4 Go

Special Teams

Special Situations

Offense ResultO2Offense Grade

Defense

Defense Result

Defense Grade

Roster

ResultRebnd#Player

1Adams, John

2Jefferson, Tom

O23Washington, George

4Franklin, Ben

5Hamilton, Alex

ResultRebnd#Player

Notes

Possession Buttons

Miscellaneous Buttons

Play Buttons

Game ID17760704

Record: 1 of 1

BB PE AV2

Still Not Much
Implemented



Season

Game

OpponentHarvardDateThursday, July 04, 1776

LocationBoston, MATime7:00 PM

VenueIvy League ChallengeTVNot Yet

Game ID17760704

Possessions

Clock

Period1Possession1MSU0Time18:07

Play1Opponent0

Series / Set

Early Offense

Offense1-4 Series, 1-4 Go

Special Teams

Special Situations

Offense ResultO2Offense Grade

Defense

Defense Result

Defense Grade

Roster

ResultRebnd#Player

1Adams, John

2Jefferson, Tom

O23Washington, George

4Franklin, Ben

5Hamilton, Alex

ResultRebnd#Player

Notes

Possession Buttons

Miscellaneous Buttons

Play Buttons

Game ID17760704

Record: 1 of 1

BB PE BV1

(Beta Version 1)



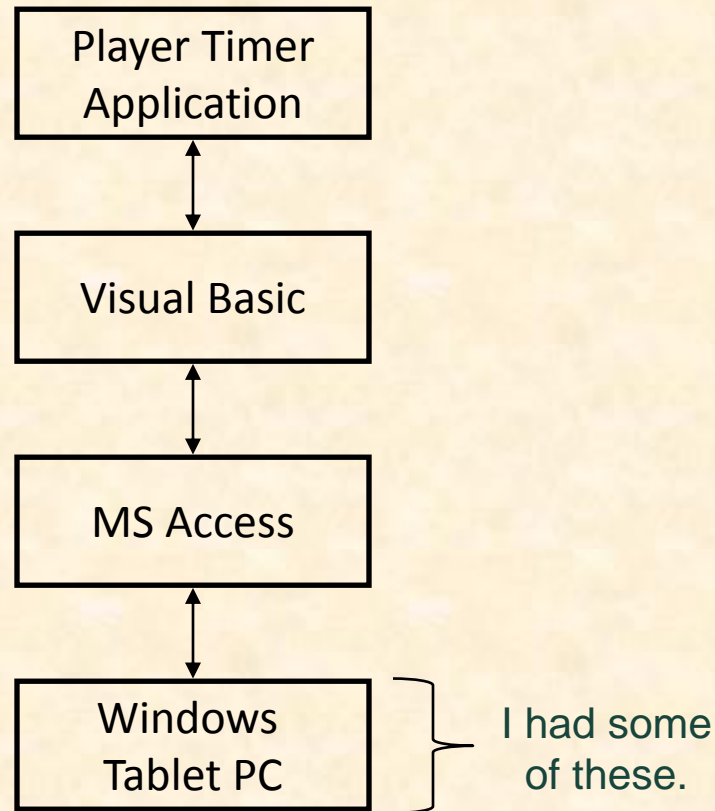
Basketball Prototypes Case Studies

- ✓ Play Effectiveness
 - Player Timer
 - Radio Stats
 - Real Time Play Stats
 - Plus/Minus

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
- 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
 - Lab Tested “Final” Version
 - Field Tested “Final” Version
 - In Practice Scrimmage
 - Totally and Completely Unusable
 - Scrapped “Final” Version UI and Started Over
- Huge Mistake!



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 Name		Time		#	Player Name
		Current	Remaining				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

- ✓ Play Effectiveness
- ✓ Player Timer
 - Radio Stats
 - Real Time Play Stats
 - Plus/Minus

Microsoft Access - [Bader's Radio Statistics]

File Edit View Insert Format Records Tools Window Help Type a question for help

Michigan State University		13	19 / 23	83%	22	5	78			
LR	SR	R	"--"	PF	O1	X1	%O1	O2	O3	Total
Brown, Shannon		3	0	4 / 4	100%	2	1	11		
<input checked="" type="checkbox"/> 1		R	PF	O1	X1	%O1	O2	O3	Total	
Hill, Chris		5	2	2 / 2	100%	0	0	2		
<input checked="" type="checkbox"/> 2		R	PF	O1	X1	%O1	O2	O3	Total	
Neitzel, Drew		12	2	1 / 2	50%	2	0	5		
<input checked="" type="checkbox"/> 3		R	PF	O1	X1	%O1	O2	O3	Total	
Ager, Maurice		13	3	2 / 3	67%	6	0	14		
<input checked="" type="checkbox"/> 4		R	PF	O1	X1	%O1	O2	O3	Total	
Anderson, Alan		15	4	2 / 2	100%	3	3	17		
<input checked="" type="checkbox"/> 5		R	PF	O1	X1	%O1	O2	O3	Total	
Torbert, Kelvin		23	5	0 / 0	-	2	1	7		
<input checked="" type="checkbox"/> 6		R	PF	O1	X1	%O1	O2	O3	Total	
Bograkos, Tim		30	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 7		R	PF	O1	X1	%O1	O2	O3	Total	
Naymick, Drew		34	1	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 8		R	PF	O1	X1	%O1	O2	O3	Total	
Davis, Paul		40	3	8 / 10	80%	6	0	20		
<input checked="" type="checkbox"/> 9		R	PF	O1	X1	%O1	O2	O3	Total	
Rowley, Delco		50	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 10		R	PF	O1	X1	%O1	O2	O3	Total	
Ibok, Idong		0	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 11		R	PF	O1	X1	%O1	O2	O3	Total	
Gray, Marquise		42	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 12		R	PF	O1	X1	%O1	O2	O3	Total	

2

Period

78

MSU

68

Duke

19 / 23

83%

MSU

17 / 24

71%

Duke

13 PF

MSU

12 PF

Duke

Scoring Runs

Open

Exit

Duke		12	17 / 24	71%	15	7	68			
LR	SR	R	"--"	PF	O1	X1	%O1	O2	O3	Total
Redick, J.J.		4	0	2 / 2	100%	1	3	13		
<input checked="" type="checkbox"/> 1		R	PF	O1	X1	%O1	O2	O3	Total	
Ewing, Daniel		5	3	2 / 4	50%	5	2	18		
<input checked="" type="checkbox"/> 2		R	PF	O1	X1	%O1	O2	O3	Total	
Melchionni, Lee		13	1	2 / 2	100%	1	2	10		
<input checked="" type="checkbox"/> 3		R	PF	O1	X1	%O1	O2	O3	Total	
McClure, David		14	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 4		R	PF	O1	X1	%O1	O2	O3	Total	
Dockery, Sean		15	3	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 5		R	PF	O1	X1	%O1	O2	O3	Total	
Nelson, DeMarcus		21	2	2 / 4	50%	3	0	8		
<input checked="" type="checkbox"/> 6		R	PF	O1	X1	%O1	O2	O3	Total	
Williams, Shelden		23	5	9 / 10	90%	5	0	19		
<input checked="" type="checkbox"/> 7		R	PF	O1	X1	%O1	O2	O3	Total	
Love, Reggie		30	4	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 8		R	PF	O1	X1	%O1	O2	O3	Total	
Perkins, Ross		40	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 9		R	PF	O1	X1	%O1	O2	O3	Total	
Davidson, Patrick		41	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 10		R	PF	O1	X1	%O1	O2	O3	Total	
Randolph, Shavlik		42	3	0 / 2	0%	0	0	0		
<input checked="" type="checkbox"/> 11		R	PF	O1	X1	%O1	O2	O3	Total	
Pagliuca, Joe		45	0	0 / 0	-	0	0	0		
<input checked="" type="checkbox"/> 12		R	PF	O1	X1	%O1	O2	O3	Total	

Form View

NUM

Spartan Basketball Plus/Minus - Spartan Basketball Plus/Minus

Home

Period
Michigan State Spartans Men's Basketball
Time

2
Illinois
0:00

Start the Clock

Player Roster
Assign Player to Position

1	1 Lucas	1	2	3	4	5
2	34 Lucious	1	2	3	4	5
3		1	2	3	4	5
4	2 Morgan	1	2	3	4	5
5	3 Allen	1	2	3	4	5
6	13 Thornton	1	2	3	4	5
7	15 Summers	1	2	3	4	5
8	22 Dahlman	1	2	3	4	5
9		1	2	3	4	5
10	10 Roe	1	2	3	4	5
11	23 Green	1	2	3	4	5
12	40 Herzog	1	2	3	4	5
13	41 Sherman	1	2	3	4	5
14	50 Nix	1	2	3	4	5
15		1	2	3	4	5
16		1	2	3	4	5
17	20 Kebler	1	2	3	4	5
18	25 Crandell	1	2	3	4	5

Players in Positions

1	20 Kebler
2	13 Thornton
3	22 Dahlman
4	25 Crandell
5	40 Herzog

Scoring

Michigan State

73

01 02 03

Start the Clock

Illinois

63

01 02 03

Start the Clock

Exit
Open Game
View Report
Reset Positions
Begin the Period
Load Roster

Form View

Plus/Minus



Risks and Prototypes

✓ Risk

✓ Prototypes

What's ahead?

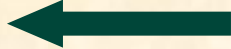
(1 of 3)

- All-Hands Meetings
 - ~~M, 01/19: Martin Luther King Day~~
 - ~~W, 01/21: Risks and Prototypes~~
 - M, 01/26: Team Status Report Presentations
 - W, 01/28: Schedule and Teamwork
 - M, 02/02: Team Project Plan Presentations
 - W, 02/04: Team Project Plan Presentations
 - M, 02/09: Team Project Plan Presentations
 - W, 02/11: Team Project Plan Presentations



What's ahead?

(2 of 3)

- Team Status Report Presentations
 - [PowerPoint Template](#)
 - Due 4:00 a.m., Monday, January 26
 - Five Days  Panic!
 - Email to Dr. D.
 - Subject: Team <Company Name>: Status Report
Subject: Team Auto-Owners: Status Report
 - Attachment: team-<company-name>-status-report-presentation.ppt
Attachment: team-urban-science-status-report-presentation.ppt
- Dr. D. Will Combine Into Single PowerPoint
 - To Speed Things Up During Meeting
 - Do NOT Modify Master Slide Page
- Each Team Presents
 - Using Dr. D.'s Laptop
 - At Most 5 Minutes (Rehearse Timing)
 - Single or Multiple Presenters (Your Choice)



01/26: Team Status Reports

The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering
Michigan State University

Spring 2015



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

Delete this slide.

Instructions

(Delete this slide before submitting.)

- 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 <Company Name> with your company name as in “Team Auto-Owners”.
 - 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 5 minutes, which will be strictly enforced. Practice your presentation to ensure that you will finish within the allotted time.
- Submission by Email
 - All presentations are due ~~on Monday, January 26, 2020 at 11:59 PM~~ **Read this carefully.**
 - For subject, use “Team <Company Name>: Status Report” as in “Team Urban Science: Status Report”.
 - Attach the PowerPoint source file named “team-<company-name>-status-report-presentation.pptx” as in team-auto-owners-status-report-presentation.pptx.



Team <Company Name>

Status Report

(1 of 4)

<Project Title>

- Project Description
 - Description Point 1
 - Description Point 2
 - Description Point 3
 - Description Point 4
- 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 text box and the brace to the left.



Team <Company 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 text box and the
brace to the left.**



Team <Company 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 schedule an in-person meeting? When?

How many times has your team met so far?

Have you scheduled team meetings? How often?

Delete this text box and the brace to the left.



Team <Company 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



What's ahead?

(3 of 3)

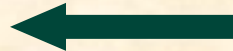
- Project Plan Presentations

- PowerPoint Template

- Download Now
 - Read the Read Me Slide (Over and Over and Over...)

- Submission

- Both Project Plan Document and PowerPoint Slide Deck
 - Due 4:00 am., Monday, February 2
 - See Submission Instructions in Template

 **Panic!**

- Must Use

- Microsoft Windows Word
 - Microsoft Windows PowerPoint

- Presenting

- 3 Teams Per Meeting Over 4 Meetings
 - Schedule Posted Sunday Evening
 - Strict 15 Minute Time Limit
 - Use Team Member Laptop
 - ❖ Bring Power Cord
 - ❖ Test In Meeting Room (in Advance)
 - Rehearse
 - 5% of Final Grade
 - Business Casual Dress

- Formal Team Photos

- Immediately Following Meeting
 - In Capstone Lab

- Schedule Conflicts

- Only for Interview Trips
 - Notify Dr. D. Well In Advance



Read Me Carefully (Delete this slide.)

- Required Template
 - Do not edit the Slide Masters.
 - Do edit the Handout Master (6 Slides Per Page)
 - In the lower left footer, change <Company Name> to your company name.
 - In the lower left footer, change <Project Title> to your project title as found on our [Projects](#) web page.
 - Do not change the organization of slides.
 - You may duplicate slides as necessary but keep in mind that your presentation time is limited strictly to 15 minutes.
- Content
 - Do not include any company confidential information in your presentation since all presentations will be posted on the web site.
 - Submit your presentation to your client for approval at least two working days in advance.
 - Throughout the PowerPoint template, replace placeholders <...> with the appropriate information.
 - Edit the center footer by clicking the Header & Footer button on the Insert ribbon. Change <Company Name> in the footer to your company name as in “Team GM Project Plan”.
 - Delete the example Screen Mockups and System Architecture slides and this Read Me slide from your presentation.
- Presenting
 - Although the presentations are scheduled over the course of four meetings, all teams must be prepared to present on the first day scheduled, Monday, February 2.
 - The order of the presentations will be posted on our [All-Hands Meetings](#) page in the afternoon or evening of the day before the first day scheduled for presentations.
 - The time limit for your presentation is 15 minutes, which will be strictly enforced. Practice your presentation to ensure that you will finish within the allotted time.
 - All team members are required to dress business casual on the day of your presentation.
 - “Formal” team photos of the presenting teams will be taken in the Capstone Lab immediately following these all-hands meetings.
- Submission
 - Email both the project plan document and presentation to [Dr. D.](#) by 4:00 a.m., Monday, February 2.
 - For subject, use “Team <Company Name>: Project Plan” as in “Team Boeing: Project Plan”.
 - Attach the Word source file named “team-<company-name>-project-plan.docx” as in “team-urban-science-project-plan.docx”.
 - Attach the PowerPoint source file named “team-<company-name>-project-plan-presentation.pptx” as in “team-quicken-loans-project-plan-presentation.pptx”.



MICHIGAN STATE
UNIVERSITY

Project Plan
<Project Title 36pt>

The Capstone Experience

Team <Company Name 24pt>

<Team Member 1 16pt>

<Team Member 2 16pt>

<Team Member 3 16pt>

<Team Member 4 16pt>

<Team Member 5 16pt>

Department of Computer Science and Engineering
Michigan State University

Spring 2015



From Students...
...to Professionals

Functional Specifications

- Point 1
- Point 2
- Point 3
- Etc...

This is your project overview.

Describe what problem your project solves.

Answer the question “What does your project do?”

This is your “elevator pitch”.

DELETE THIS TEXT BOX.



Design Specifications

- Point 1
- Point 2
- Point 3
- Etc...

Articulate a summary of your project's major features as well as its overall design.

DELETE THIS TEXT BOX.



Screen Mockup: <Title>

You may include as many screen mockups as you have like, but you must include at least two examples.

To include more than two, you can duplicate this slide as many times as necessary.

Give each mockup slide a title.

See below for examples and instructions.

DELETE THIS TEXT BOX.



Screen Mockup: <Title>

You may include as many screen mockups as you have like, but you must include at least two examples.

To include more than two, you can duplicate this slide as many times as necessary.

Give each mockup slide a title.

See below for examples and instructions.

DELETE THIS TEXT BOX.



Screen Mockup

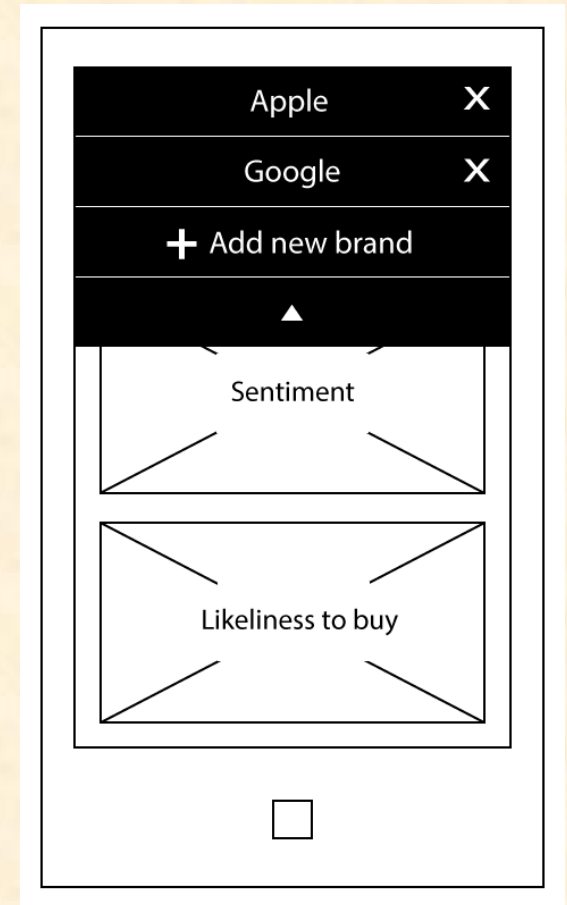
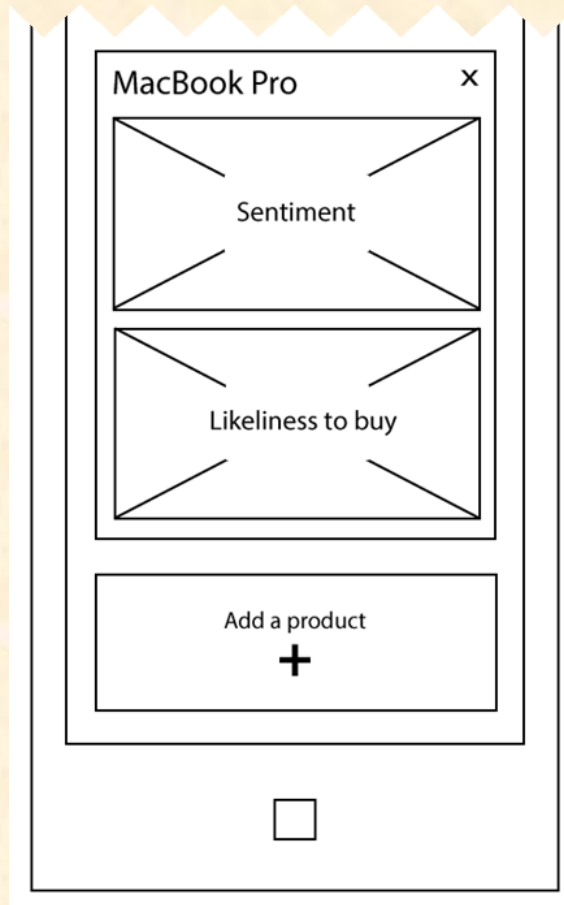
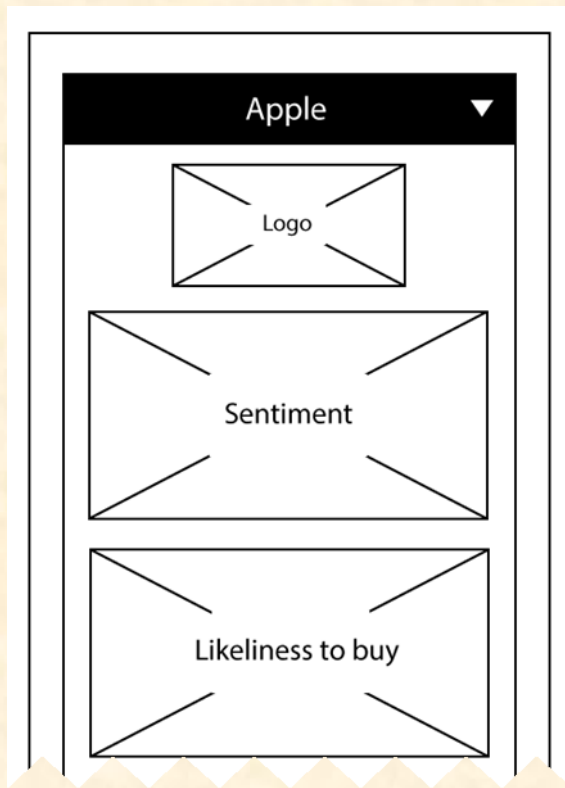
Notes on Making Your Mockups
Delete this slide.

- Ensure that your mockups are...
 - readable (size-wise),
 - have the correct aspect ratio,
 - scalable, and
 - centered vertically (between the green bar in the title and the footer) and horizontally (Use Home > Arrange > Align).
- In PowerPoint use Home > Arrange > Group to group the objects in your mockup into a single object that can be copied-and-pasted (and scaled).

DELETE ME.



Screen Mockups: Phone Interface



DELETE ME.



Delete this slide.

Screen Mockup: iOS Application



DELETE ME.



Technical Specifications

- Point 1
- Point 2
- Point 3
- Etc...

List the technical components of your project.

DELETE THIS TEXT BOX.

System Architecture

Show a diagram that illustrates the overall architecture of your project including how all of the parts and pieces are connected and interact.

See below for examples and instructions.

DELETE THIS TEXT BOX.



System Architecture

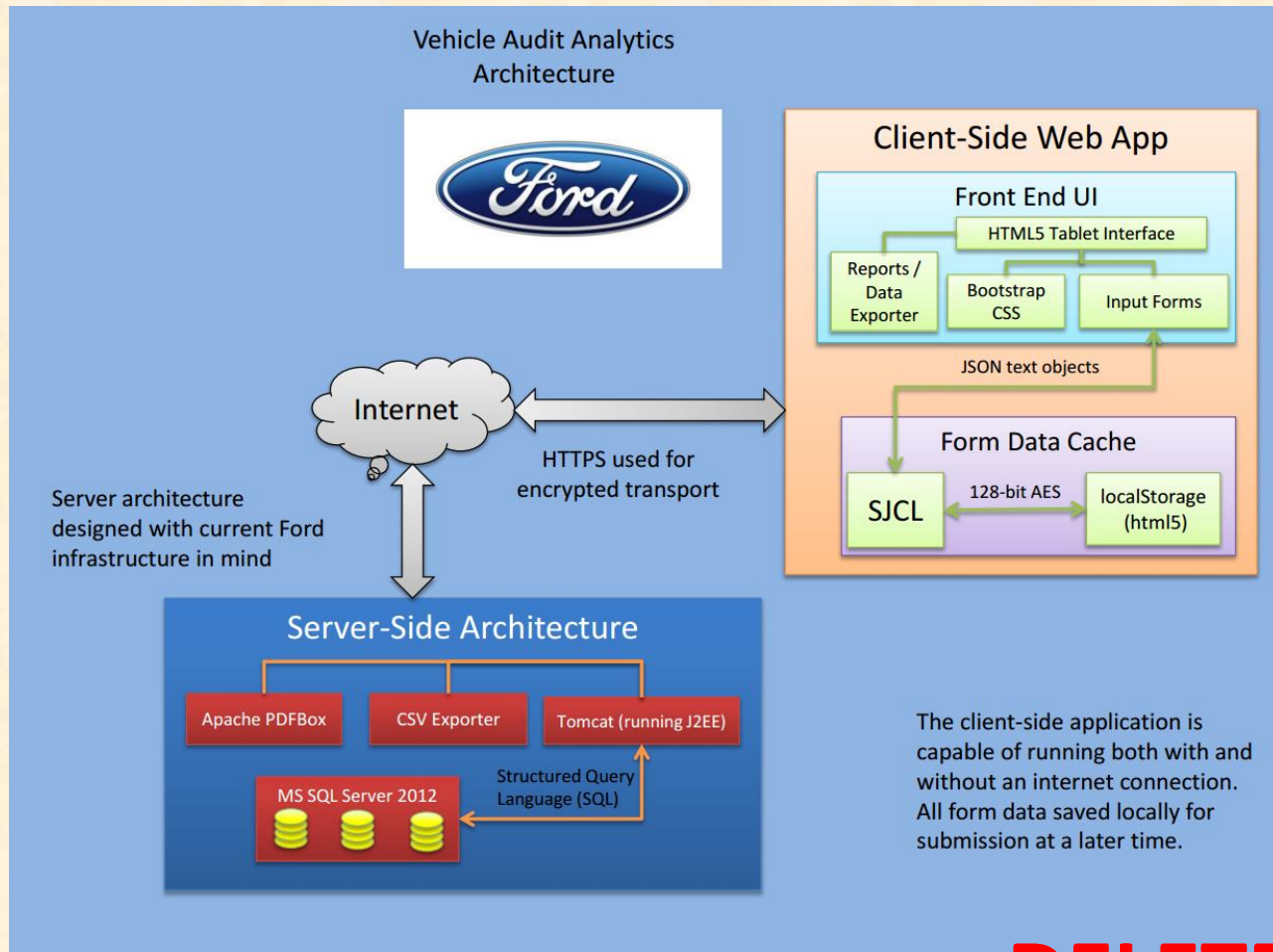
Notes on Making Your Diagram
Delete this slide.

- Ensure that your diagram is...
 - readable (size-wise),
 - has the correct aspect ratio,
 - scalable, and
 - centered vertically (between the green bar in the title and the footer) and horizontally (Use Home > Arrange > Align).
- In PowerPoint use Home > Arrange > Group to group the objects in your diagram into a single that can be copied-and-pasted.
- Use Paint.NET to make the background of your diagram transparent.
 - Download and install it from www.getpaint.net.
 - Copy your diagram into Paint.NET.
 - Select Tool > Magic Wand.
 - Click on a background area.
 - Push the Delete button (on your keyboard).
 - The background area should be a checkerboard pattern.
 - (N.B.: Paint.NET was a capstone project at the University of Washington.)



System Architecture

Example System Architecture
Delete this slide.

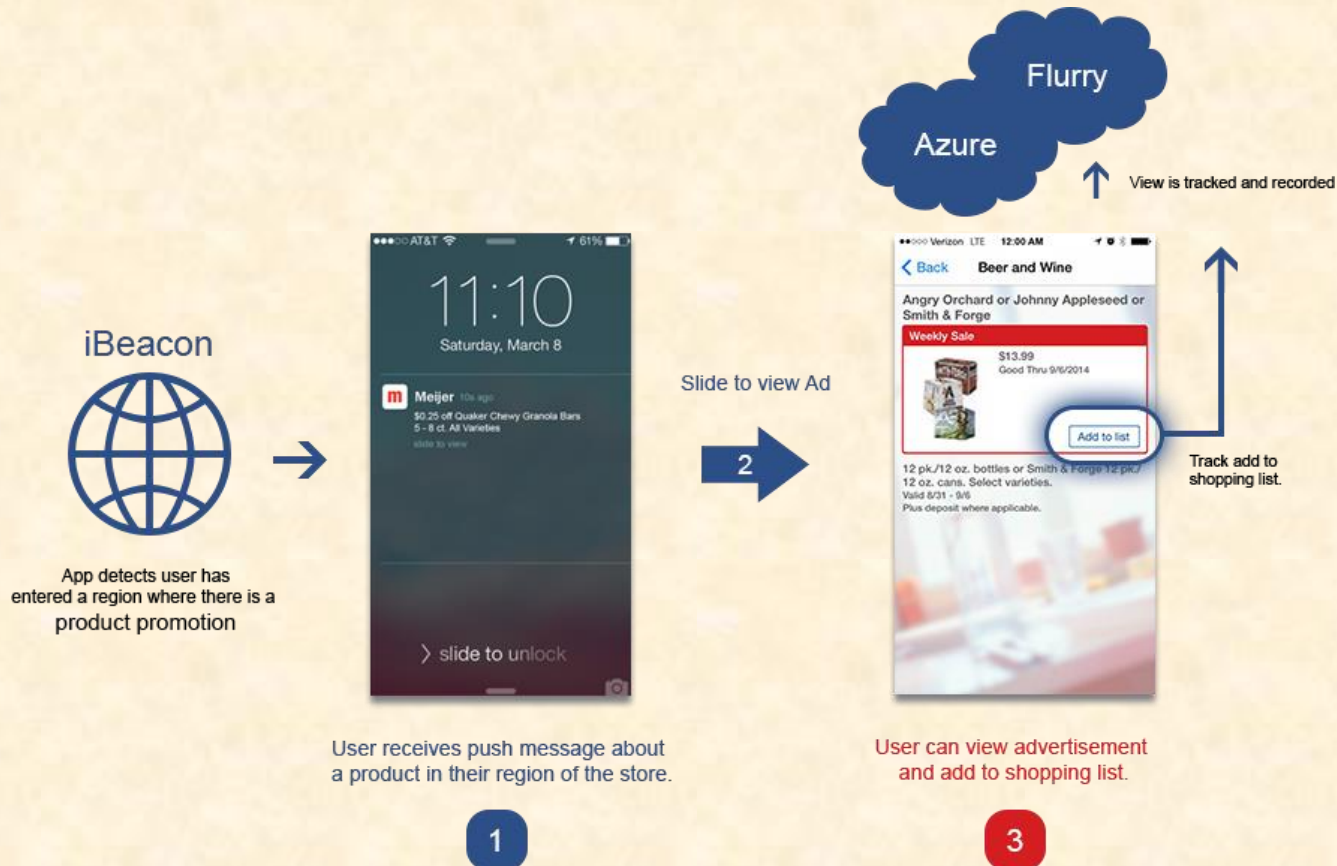


DELETE ME.



System Architecture

Example System Architecture
Delete this slide.



DELETE ME.



System Components

- Hardware Platforms

- Point 1
- Point 2
- Point 3
- Etc...

List your hardware and software platforms including all of the technologies that your project will use.

DELETE THIS TEXT BOX.

- Software Platforms / Technologies

- Point 1
- Point 2
- Point 3
- Etc...



Testing

- Point 1
- Point 2
- Point 3
- Etc...

Articulate your plans for testing your software system.

List any tools that you plan to use.

DELETE THIS TEXT BOX.



Risks

- Risk 1
- Risk 2
- Risk 3
- Risk 4
- Etc...

Articulate your major risks.

For each risk, describe what the risk is and how you plan on mitigating it.

DELETE THIS TEXT BOX.

