

Subconscious Analysis Software

Detailed Design

Enigma Elucidation
March 1st, 2012

Welcome

Client:

Dr. Eric Breimer

Associate Professor of Computer Science

Siena College

& other guests



Agenda

- Introduction
- Problem Overview
- Project Progression
- Test Plan
- Data Design
- Survey Integration
- Prototype Screens
- What's Next?
- Questions



Introduction

Megan DeRudder - Team Leader

Christopher Black - Database Administrator

Lindsay Kulzer - Lead Web Developer

Amanda Kurz - Documentarian

Nathan Levine - Lead Project Engineer

Daniel West - System Administrator



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Problem Overview

Implicit Association Test (IATs)

- Creation
- Distribution
- Analyze and Export Data
 - FSH Tech



The screenshot displays the 'Subconscious Analysis Software' interface. At the top, it says 'Subconscious Analysis Software' and 'Take an IAT'. Below this, the test title is 'IAT Test- Women and Technology'. The test area is divided into two columns: 'Women and Technology' on the left and 'Men and Non-Technology' on the right. In the center, there is an image of an iPhone. Below the image, it says 'Sort the stimuli objects.' At the bottom of the interface, it says 'enigma elucidation Subconscious Analysis Software: Prototypes'.

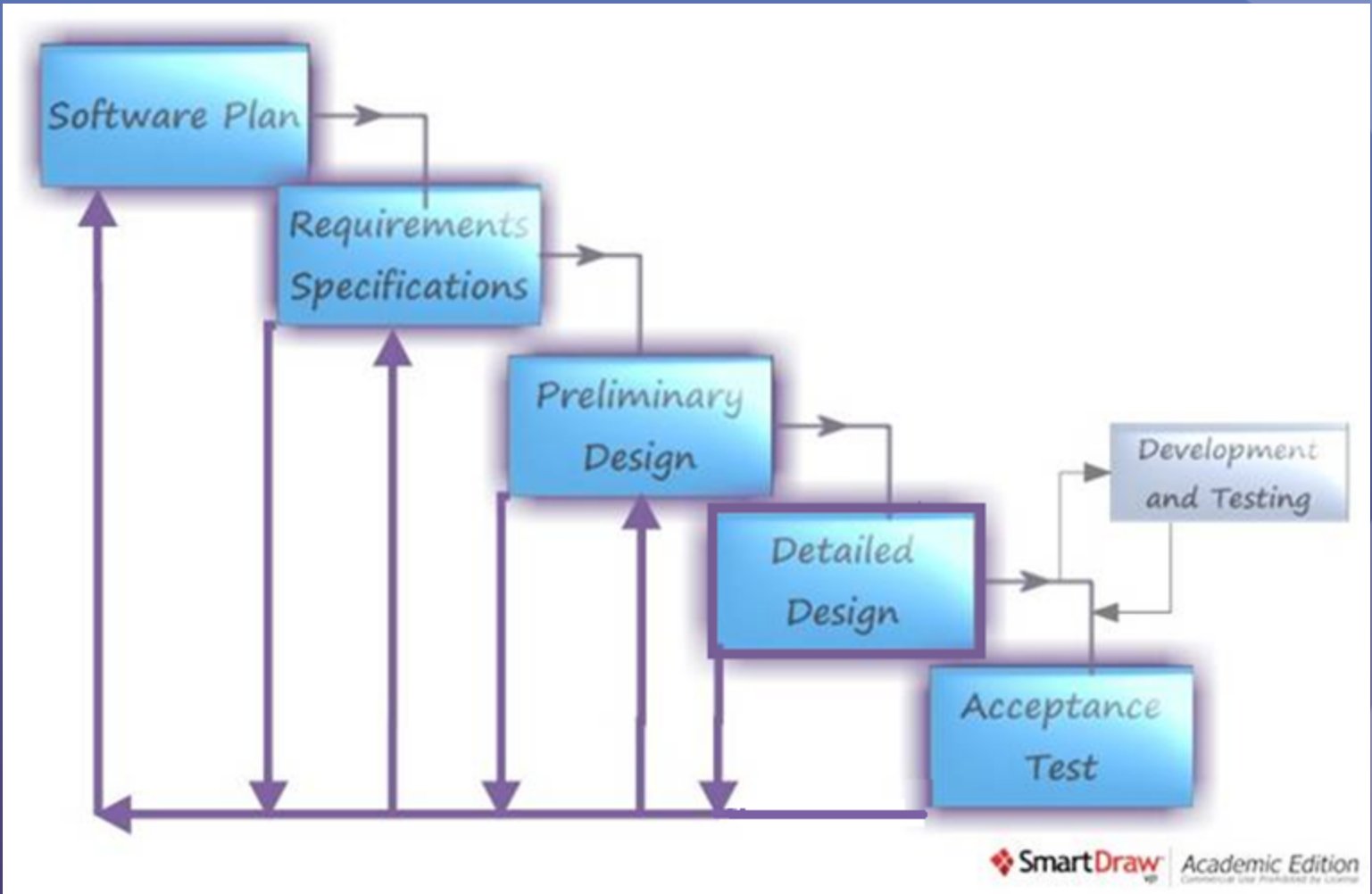


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Waterfall Model



SmartDraw Academic Edition
Commercial Use Prohibited by License



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Our Test Strategy

- Break the project into units
- Unit Testing: Test units separately
- Integration Testing: Test interaction of units
- Acceptance Testing:
 - Test entire system
 - Test functional and non-functional requirements are met
 - Documented in next stage of our model



Functional Requirements: Administrator

- Log in / Log out
- Retrieve Password
- Create IAT
 - Create Survey
 - Choose four unique categories
 - Choose Stimuli
 - Delete Stimuli
 - Choose if Participant can view data



Functional Requirements: Participant

- View Directions
- Take Survey
- Take IAT
 - View all categories/ stimuli
 - Complete Blocks
 - Move to Next Block
- View Results with Permission



Non- Functional Requirements

- The system must be aesthetically pleasing
- The system must be easy to use
- The system must be independent of any localized server
- The system must be platform independent

Unit Test - Login

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Login Unit Test

This unit test will explore all the variations of username and password combinations that may be inputted

Test Cases							
Pass/ Fail Status	Test Number	Description	Action to perform test (input)	Steps to be Executed	State Before Test	Expected Results	Observed Results
N/A	1.001	Null username field	Leave username field blank	Click the login button	Blank username field	Output "invalid username"	
N/A	1.002	Null password field	Leave password field blank	Click the login button	Blank password field	Output "please enter your password"	
N/A	1.003	Null UserName and Password	Leave both username and password field blank	Click the login button	Blank user name and password field	Output "invalid username"	
N/A	1.004	Incorrect password for identified username	Insert incorrect password for given username	Click the login button	Valid username, invalid password	Output "incorrect password"	
N/A	1.005	Non existant username	Insert an invalid username	Click the login button	Invalid username	Output "invalid username"	
N/A	1.006	Forgot password	Click on provided link	Click the forgot password link	Black form	Redirect to forgot password screen	
N/A	1.007	Forgot password Screen	Click yes when user is asked if username and password should be emailed to the registered email	Log on to registered email and look for message	Forgot Password Screen	An email should be recieved at the registered address indicating username and password	
N/A	1.008	Login	Insert valid username and corresponding password	Click on the login button	Filled in form	User brought to their homepage	
F = Unit Summary 6 tests			0%	passing	0	passed	0 failed

[Directory Page](#)



Unit Test- Querying the Database

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Querying the Database Unit Test

This unit test will explore all the variations of queries to the database.

Test Cases										
Pass/ Fail Status	Test Number	Description	Action to perform test (input)	Steps to be Executed	State Before Test	Expected Results	Observed Results	Comments	Tested By	Test Date
N/A	2.001	Check if table exist	Enter table name into name field	Runs a query using that table name	Table exist	Table appeared with their data				
N/A	2.002	Insert data into table	Input data into corresponding fields	Runs a query updating the table to contain the new data	Table exist	The table's data will be updated				
N/A	2.003	Delete data from table	Enter table name and data to be deleted	Runs a query deleting the data from the specified table	Table and data exist	The specified data is deleted				
N/A	2.004	Query database	Enter table name and data to be displayed	Runs a query returning desired data from specific table	Table and data exist. Data generated by hand, not by IAT	The specified data is displayed				
N/A	2.005	Check for non-existent table	Enter table name	Runs a query looking for specific table	Table does not exist	Output "Table Does Not Exist"				
N/A	2.006	Insert invalid data into table	Enter table name and data into corresponding field	Run a query inserting new data in table	Table exist, but input data is not the right type	Output "Invalid Data"				
N/A	2.007	Delete nonexistent data from database	Enter table name and data to be deleted	Runs a query deleting the data from the specified table	Table exist but data does not	Output "Data does not exist in table"				
N/A	2.008	Query database for nonexistent data	Enter table name and desired data	Runs a query returning desired data from specific table	Table exist but data does not	Output "Nonexistent data"				
N/A	2.009	Check that tables properly connect to eachother	Enter table names and data to be displayed	Runs a query that joins all of the tables together	Some data should be in each table that is not listed in one of the other tables. The rests should be referenced in all the tables.					
F	= Unit Summary		0%	passing	0	passed		Date of last test =		1/0/00
	9	tests			0	failed				
	Directory Page									

Unit Test- Create IAT

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Create IAT Unit Test

This unit test will explore all the variations of input and link usage to create an IAT

Test Cases										
Pass/ Fail Status	Test Number	Description	Action to perform test (input)	Steps to be Executed	State Before Test	Expected Results	Observed Results	Comments	Tested By	Test Date
N/A	3.001	Test link to Create Survey	Click on Create Survey Button	Click on Create Survey Button	The Create Survey Page	Lime Survey Login Page				
N/A	3.002	Choose Categories	Input four unique categories	Click on Update Button	All four category fields full and unique	"Add Stimuli" option created				
N/A	3.003	Input Invalid Categories	Input repeat categories	Click on Update Button	Repeated words in category fields	Output "Please input four unique categories!"				
N/A	3.004	Blank category field	Leave 1(or more) categories blank	Click on the Update Button	Blank category field	Output "Please input four unique categories!"				
N/A	3.005	Repeat for 3.004 for all categories								
N/A	3.006	Test delete link	Click "delete" link	Click "Delete" Link	Stimuli Table with delete links	Stimuli deleted from table				
N/A	3.007	Test Finish Link	Click "finish" button	Click "finish" button	Full Stimuli Tables	Confirmation Page				
N/A	3.008	Test "Go Back!" Link	Click "Go Back!" button	Click "Go Back!" button	Confirmation Page	Create IAT Page				
N/A	3.009	Test "Yes, finish the test!" Link	Click "delete" button	Click "delete" button	Confirmation Page	New IAT				
F	= Unit Summary		0%	passing	0	passed		Date of last test =		1/0/00
	9	tests			0	failed				



Unit Test- Take IAT

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Take IAT Unit Test

This unit test will explore all the input variations and links while taking an IAT

Test Cases										
Pass/ Fail Status	Test Number	Description	Action to perform test (input)	Steps to be Executed	State Before Test	Expected Results	Observed Results	Comments	Tested By	Test Date
N/A	4.001	Test Link to IAT from given URL	Click on URL or enter URL into browser	Go to URL	Email or Open Browser	Instructions pop up upon entering the IAT				
N/A	4.002	Survey Link	Test survey link from directions page	Press Link to Survey	Directions page	Survey Page				
N/A	4.003	Incomplete Survey	Do not complete survey	Leave mandatory fields of survey blank	Survey	Error message "Please complete survey before completing IAT"				
N/A	4.004	Complete Survey	Complete survey	Finish survey	Survey	Directions page of IAT				
N/A	4.005	Directions Page	Test continue link from directions page	Press Spacebar	Directions page	First "Block" of the IAT				
N/A	4.006	Correctly sort stimuli	Sort the stimuli correctly using E and I keys	Press E (to sort left) and I (to sort right)	Stimuli Object	Next stimuli Object appears				
N/A	4.007	Incorrectly sort stimuli	Sort stimuli to wrong category	Press E (to sort left) and I (to sort right)	Stimuli Object	A red "X" appears over stimuli object				
N/A	4.008	Input invalid key	Press any other key then E or I	Press any other key then E or I	Stimuli Object	Error message "Please use 'E' and 'I' keys for input"				
N/A	4.009	Finish "block"	Moving to next IAT "block"	Press space bar	Message "You have completed this block, the next section will have new categories. Press space bar to continue"	First Stimuli object of next block of IAT				
N/A	4.01	Finish IAT	Complete all blocks of IAT	Complete all blocks of IAT	Last page of IAT	Message "Thank you for taking this IAT"				
N/A	4.011	Sudden End of Session	Exit IAT in the middle of the test	Close IAT	Take IAT	Removes Data Stored from IAT				
N/A	4.012	Check data storage	Run test 2.004 again after taking an IAT to make sure the data was properly stored.	This test should be taken sometime after test 2.004 is 100% passed. Query the database to see if the new data pops up, and the correct values are in place	The data to be generated shouldn't already be in the table.	The correct data should be in the Table.				
F	= Unit Summary		0%	passing	0	passed		Date of last test =		1/0/00
	12	tests			0	failed				



Upload Stimuli

Upload Stimuli

This unit test will explore all the variations of ways to correctly and incorrectly upload stimuli

Test Cases										
Pass/ Fail Status	Test Number	Description	Action to perform test (input)	Steps to be Executed	State Before Test	Expected Results	Observed Results	Comments	Tested By	
N/A	5.001	Radio Button Stimuli Type	Toggle both Stimuli type values for Radio Button	Click one button, then click the other.	Radio Button set to default (word), nothing inputted	The word button activates empty text box and deactivates image browse button. The image button activates browse button and deactivates the text box.				
N/A	5.002	Uploading stimuli image	Input an appropriate root and extension to image	Browse for image, Click Add Stimuli	Stimuli field with valid input	Stimuli added to stimuli table				
N/A	5.003	Uploading stimuli text	Input text	Type in word into stimuli field, Click Add Stimuli	Stimuli field with valid input	Stimuli added to stimuli table				
N/A	5.004	Input invalid link to image	Input an invalid root or extension to image	Browse for image, Click Add Stimuli	Stimuli field with invalid input	Output "Can not upload image, try again!"				
N/A	5.005	Do not select a category type	Do not select a radio button	Click Add Stimuli	No Selected Radio Button	Output "Please select a category"				
N/A	5.006	Add Stimuli	Input valid stimuli and chose 1 category	Click Add Stimuli	Stimuli field with valid input and category selected	Stimuli added to stimuli table				
N/A	5.007	Check Image Size	Select Image that is too big	Click Add Stimuli	Stimuli is not added	Output "Size too big!"				
N/A	5.008	Check Image Type	Select Image that is not in correct format	Click Add Stimuli	Stimuli is not added	Output "Image is not in correct format!"				
F	= Unit Summary		0%	passing	0	passed	Date of last test =			1/0/00
	8	tests			0	failed				



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Data Dictionary

- Records all data entities and variables in SAS
- Key:
 - Table
 - Data Name
 - Applied Processes
 - Data Type
 - Description
 - Acceptable Input Characters
 - Unacceptable Input
 - Notes



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Data Dictionary

L = Login; C = Create IAT; V = View Results; T = Take IAT; E = Export Results

Table	Data Name	Applied Process(es)	MySQL Data Type	Data Size	Description	Acceptable Range of Input	Acceptable Input Characters	Unacceptable Input	Notes
Categories	Category Name	C, V, T, E	varchar	1-50 Characters	Name given to the different categories		A-Z, a-z, 0-9	''	
Categories, Stimuli Objects	Category Type	C, V, T, E	varchar	1-50 Characters	Distinguishes the category type that the stimuli falls under	P1, O1, P2, O2	A-Z, a-z, 0-9	null	
IAT Data	QuestionNumber	V, T, E	int	1-3 Digits	Question number in IAT	numbers 1-200	0-9	first	
IAT Data	Time	V, T, E	time	1-10 Digits	Time (ms) it took participant to answer questions		0-9	flag	
IAT Data	Correct	V, T, E	int	1 Digit	If the participant got the question right or wrong		0-1	''	
IAT Data, Stimuli Objects	Stimuli ID	C, V, T, E	int	1-2 Digits	Unique ID for Stimuli Object		0-9	computer	
IAT Info	IAT Title	C, V, T, E	varchar	1-50 Characters	Title of IAT		A-Z, a-z, 0-9	IAT	
IAT Info	Visible Results	C, V, T	int	1 Digit	States whether or not participant can view their IAT result		0-1	yes	
IAT Info, Participant Details, Categories, Stimuli Objects	IAT ID	C, V, T, E	int	1-3 Digits	Unique ID for IAT		0-9	THE IAT	
IAT Info, Survey	Survey URL/ID	C, V, T, E	varchar	1-200 Characters	Reference to the survey being used for the IAT		A-Z, a-z, 0-9, /, :	...	
Login	username	L	varchar	1-20 Characters	Username		A-Z, a-z, 0-9	()%*@!	only necessary for administrator
Login	password	L	varchar	1-20 Characters	Password		A-Z, a-z, 0-9, !, @, #, \$, %, ^, &, *, (,)	null	only necessary for administrator
Participant Details	Participant Bias	V, T, E	decimal	1-15 Digits	calculated bias score	decimal on or between ranges (-1) - 1	0-9	7	
Participant Details, IAT Data	Participant ID	V, T, E	int	1-9 Digits	ID of participant		0-9	q	
Participant Details, Survey	Participant Survey ID	V, T, E	int	1-9 Digits	Survey ID of participant		0-9	''	
Stimuli Objects	Type	C, V, T, E	varchar	1-20 Characters	States what type of stimuli is stored: a text or a file path to an image		A-Z, a-z	2563	
Stimuli Objects	Value	C, V, T, E	varchar	1-100 Characters	Contains either the word stimuli or the file path to the image		A-Z, a-z, 0-9, /	null	

Entity- Relationship Diagram

- Provides a graphical representation of the database.
- Entities: table in the database
- Attributes: data associated with entity or relationship
 - Primary Key: Underlined
- Relationships: interaction between two entities
 - Shows cardinality and weak relationships

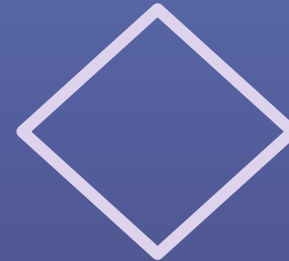


ER Diagram Key

Entity



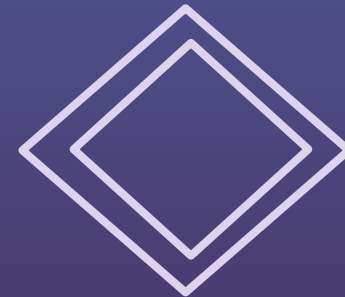
Relationship



Attribute

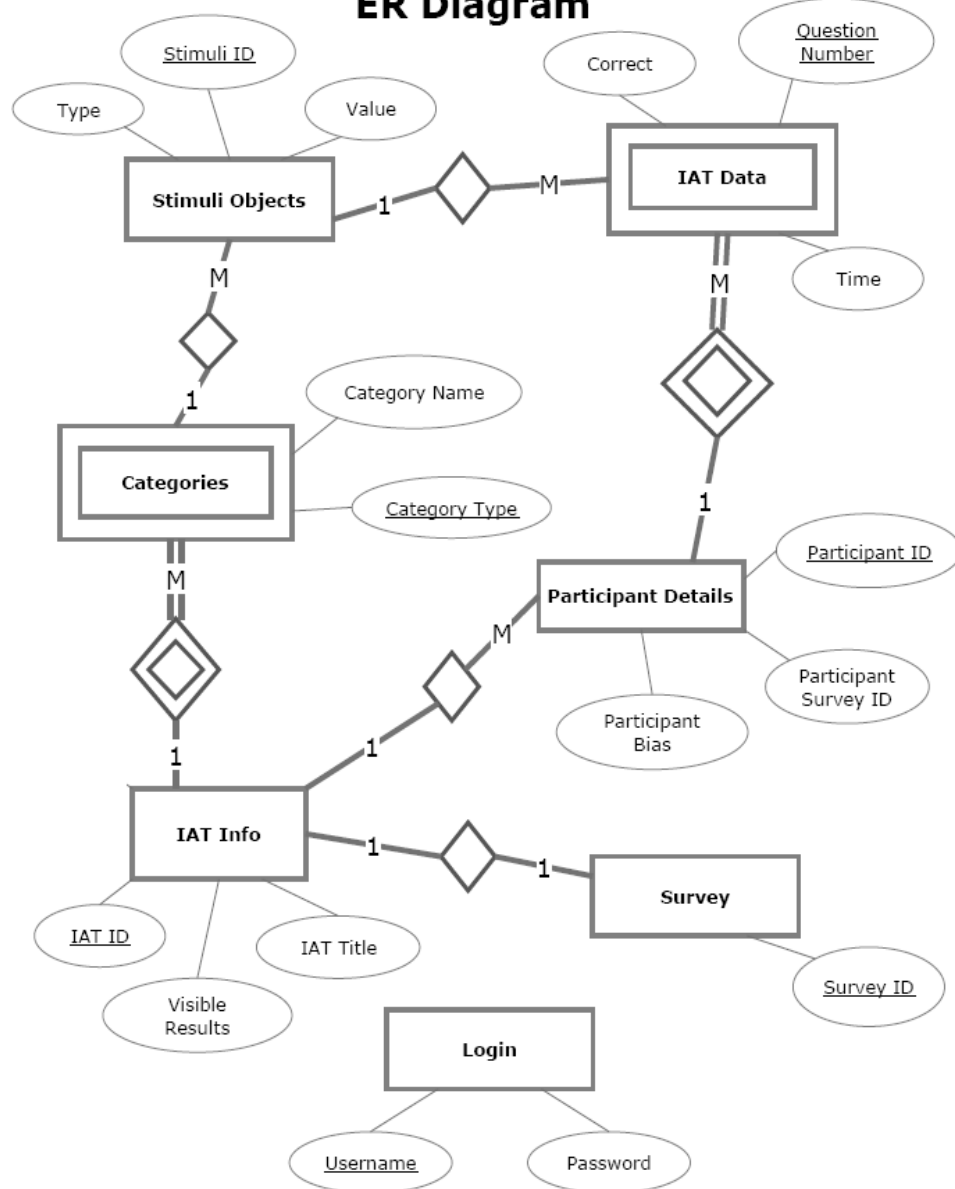


Weak Relationship



ER Diagram

F.I.L.E.T / S.A.S ER Diagram



Relational Schema

- Organization of Database showing:
 - Primary and Foreign Keys
 - Table Organization

Login {Username, Password}

Categories {CategoryType, CategoryName, IATID}

StimuliObjects {StimuliID, Value, Type, CategoryType, IATID}

IATInfo {IATID, VisibleResults, IATTitle, SurveyID}

Survey {SurveyID, ParticipantSurveyID}

ParticipantDetails {ParticipantID, ParticipantSurveyID, ParticipantBias, IATID}

IATData {QuestionNumber, Time, Correct, StimuliID, ParticipantID}



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Survey Integration

<http://enigma.sienacs.com/survey/admin/admin.php>



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Subconscious Analysis Software

Create and Manage your own IATs

Login to SAS:

User Name:

Password:

[Forgot my Password](#)

enigma elucidation Subconscious Analysis Software: Prototypes



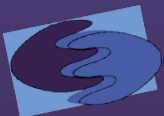
Subconscious Analysis Software

Create and Manage your own IATs

Forgot your Password?

Please enter your registration email

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Subconscious Analysis Software

Create your own IAT

Create a New IAT Test

Step 1:

[Create Survey](#)

Step 2: Create Test

Choose Categories

	Primary	Opposite	
Pair 1:	<input type="text"/>	<input type="text"/>	
Pair 2:	<input type="text"/>	<input type="text"/>	Update

[Logout of SAS](#)

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Subconscious Analysis Software

Create your own IAT

Create a New IAT Test

Step 1:

[Create Survey](#)

Step 2: Create Test

Choose Categories

	Primary	Opposite	
Pair 1:	<input type="text" value="Technology"/>	<input type="text" value="Non-Technology"/>	
Pair 2:	<input type="text" value="Women"/>	<input type="text" value="Men"/>	Update

Choose Stimuli

- ◊ Word
- ◊ Image

Word	Image	Technology	Non-Technology	Women	Men	
<input type="text"/>	Browse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Add

[Logout of SAS](#)

Subconscious Analysis Software: Prototypes

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Create a New Test

Step 1:

[Create Survey](#)

Step 2: Create Test

Choose Categories

Primary

Pair 1:

Pair 2:

Choose Stimuli





- Word
- Image

Word **Image** **Technology**

[Logout of SAS](#)

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Added to Your Test:

Stimuli	Category	Delete
	Technology	<input checked="" type="checkbox"/>
	Non-Technology	<input checked="" type="checkbox"/>
Java	Technology	<input checked="" type="checkbox"/>
	Women	<input checked="" type="checkbox"/>
	Men	<input checked="" type="checkbox"/>
Mom	Women	<input checked="" type="checkbox"/>
Uncle	Men	<input checked="" type="checkbox"/>

[Logout of SAS](#)

[Finish](#)



Subconscious Analysis Software

Create your own IAT

Your IAT Data:

Stimuli	Category
	Technology
Java	Technology
	Non- Technology
	Women
Mom	Women
	Men
Uncle	Men

Are you sure you are ready to create your IAT?

[Logout of SAS](#)





Subconscious Analysis Software

Create and Manage your own IATs

Are you sure you want to log out?

No, go back

Yes

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Subconscious Analysis Software

Take an IAT

Directions

You will now be presented with a set of words or images to categorize into groups. This requires that you categorize items as quickly as you can while making as few mistakes as possible. This part of the study will take about 5 minutes.

The following is a list of category labels and the items that belong to each of those categories.

Category	Items
Technology	Images and symbols of Technological Items
Non-Technology	Images and Symbols of Non-Technological Items
Women	Girl, Female, Aunt, Daughter, Wife, Woman, Mother, Grandma ..and Images of Women
Men	Uncle, Dad, Man, Boy, Father, Male, Grandpa, Husband, Son, Uncle ..and Images of Men

- Keep your index fingers on the 'e' and 'i' keys to enable rapid response.
- Two labels at the top will tell you which side to categorize the center item.
- Each word or image has a correct classification. If incorrectly categorized, a prompt will appear asking to re-categorize the item.
- Expect to make a few mistakes because of going fast. That's OK.

Continue



Subconscious Analysis Software

Take an IAT

IAT Test- Women and Technology

Women and
Technology



Men and
Non-Technology

Sort the stimuli objects.



Subconscious Analysis Software

Take an IAT

IAT Test- Women and Technology

Women and
Technology



Men and
Non-Technology

You have sorted the stimuli object into the wrong Category.
Sort correctly to continue



Subconscious Analysis Software

Take an IAT

Thank You!

We would like to thank you for participating in our study and helping our research interests! :)

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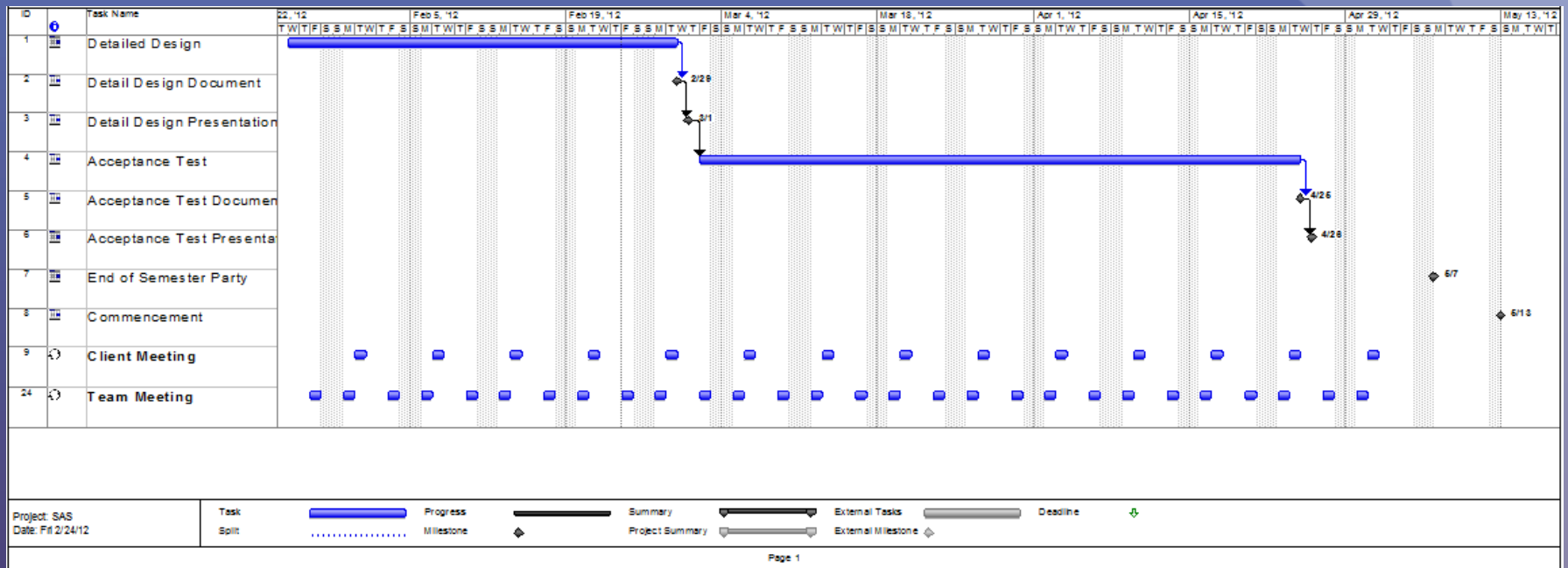
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What's Next



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Questions?

