**Scoring Rubric and Data Specifications**

**DATA ASSUMPTION**

Any recoding of data that is described here is intended to create datasets that can be used for initial psychometric analyses. Data stored by Tidepool engineers (on Tidepool servers) will likely be at the most granular level (e.g., the pie charts being saved at either the % of pixel count level). It may be necessary to recode psychometric data to a different level of granularity depending on volume of data and the result of various analyses.

All examinees will have a unique identifier that will allow us to track across different assessment components (e.g., Holland and Projective).

**RESP FILE**

Examinee response data coming out of the system in the RESP file should be oriented such that columns represent our test items, and rows represent the examinees. Thus, the dataset will have as many columns as there are items and as many rows as we have examinees taking the assessment. Two files should be extracted from the system. The RESP file contains the actual scored data using the scoring schema described below. The following is a schematic of the RESP file (header row provided here for sake of clarity where the column headers represent the item codes described below) for five examinees:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Examinee ID | 1C1 | 1C2 | 1C3 | 1C4 | 1C5 | 1C6 | 1P1 | 1P2 | 1P3 | 1P4 | 1P5 | 1P6 |
| 0000000001 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 5 | 1 | 2 | 3 |
| 0000000002 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 5 | 0 | 4 | 3 |
| 0000000003 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 5 | 4 | 1 | 3 | 2 |
| 0000000004 | 1 | 1 | 0 | 0 | 0 | 1 | 4 | 2 | 3 | 1 | 5 | 0 |

Concatenated to the end of each examinee’s response string will be any additional ‘prime’ scores that are calculated for that examinee[[1]](#footnote-1). Prime scores (which are coded at the item level) can be calculated at the individual level (e.g., color or shape) and at the total prime score level. Thus, any prime scores that are added to the RESP file will need to be communicated at the time of data handoff.

**ITEM FILE**

The ITEM file will contain as many rows as there are items in the RESP file (one for each item). The columns in the RESP file will have the exact same order as the rows in the ITEM file. Within the ITEM file the first column will be the item code (e.g., 1C1) and the second column will contain the coding from the content expert. Any additional systematic content coding that may be useful will be provided by the content experts and added as additional fields to the ITEM file. The following is a schematic of the ITEM file (header row provided for sake of clarity) for the first seven items:

|  |  |  |
| --- | --- | --- |
| Item ID | Content Code | Additional Content Codes |
| 1C1 | Realistic |  |
| 1C2 | Investigative |  |
| 1C3 | Artistic |  |
| 1C4 | Social |  |
| 1C5 | Enterprising |  |
| 1C6 | Conventional |  |
| 1P1 | Realistic |  |

**Holland Prototype**

1. Floating clouds: each set of clouds represents a collection of 6 test questions for example ‘take a biology test’ can be considered a test question. If the examinee selects this item then they shall receive a score of 1 otherwise they shall receive a score of 0 for this item.
2. Pie charts: each pie chart can be considered a six item test (i.e., the number of wedges), and in this case the biggest piece of pie will receive a score of 5, the next biggest will receive a 4, and so forth such that the smallest piece of pie will receive a 0. In the case of ties we will use a ‘score down’ procedure. For example, let’s suppose that the one quarter is cut in half again, and the rest of the pieces are split within the remaining quarter.  So Sales Ability is 50% Teaching Ability and Artistic ability are each about 12.5% and then the remaining let’s say are all 8%.  Then we would score that 6,2,2,1,1,1.  If however, the last three had 8%,7% and 5% (instead of all being the same) then we would score that as 6,4,4,3,2,1.

This particular assessment contains the following sequence:

* 3 clouds
* 1 pie
* 4 clouds
* 1 pie
* 4 clouds

We can think of the clouds as 6 items scored either 0/1 (we can these dichotomous items) while the pies is a set of six items each scored from 0 to 5 (when we have multiple score categories we call these polytomous items). Thus, our assessment has 3x6 + 6 +4x6 + 6 + 4x6 = 78 items.

Items will be coded using 3 letter/digit such that the first digit represents the set number, then C or P can be used to identify item type (cloud or pie) and the third digit represents the position within the set. The first cloud set will coded as: 1C1, 1C2, … 1C6, the first pie set will be 1P1, 1P2 … 1P6, the second cloud set will begin with 2C2, the second pie set will begin with 2P2, and so forth.

**PERSONALITY**

1. Select top 4 of 5: Each set of 5 pictures represents an item. The examinee is asked to place their most favorite in frame # 1, then they will select their second most favorite for frame #2 and so forth. The last unselected picture is placed into a trash can. The picture selected for frame 1 will receive a score of 4 (note reverse scoring), frame 2 will receive a 3, and so forth such that the pictured placed into trash can receives a 0.
2. Select 1 from 2: examinees are presented a series of 2 pictures and asked to select between the two as to which they favor. The picture selected will be scored 1 and the unselected will be scored 0.

This particular assessment contains the following sequence:

* 6 of the Select top 4 of 5
* 11 of the select 1 from 2

We can think of the select 4 from 5 as 6 polytomously scored items, and the 11 select 1 from 2 as 11 dichotomous items. Thus, our assessment has 6 + 11 = 17 items.

Items will be coded 1\_S45\_1 (for set 1, select 4 of 5, item number 1), 1\_S45\_2, and so forth such that 1\_S12\_1 represents set 1, select 1 of 2, item number 1. Note that we only have 1 set for S45 and one set for S12.

**BOUCING BALLS**

1. Bouncing balls: each set of bouncing balls represents 8 test questions. The examinee is presented 8 balls and is asked to choose top four balls that are moved into a top bar where the ball on the left is most preferred and the ball on the right is less preferred. Balls that remain unselected are considered not preferred. This item will be scored such that the balls in the bar will be scored 4 to 1 from left to right and the unselected balls will be scored 0.

This particular assessment is a one item assessment. Nonetheless, we will use a coding scheme that will allow for additional items to be added later.

We can think of this a set of 8 polytomously scored items. We will code these items as 1B1, 1B2, …, 1B8.

**MOTIVATION (TO BE ADDED LATER)**

**PATHWAYS**

1. Order Large Stones: Each set of large stones represent an item. The examinee is asked to order the first set of stones from lower left corner (starting point of path, position 1) to upper right (ending point of path, position 3). The scoring for this will be done by adding position numbers:
   1. If a stone is not selected then score = 0
   2. If a stone is selected in only position 1 then score = 1
   3. If a stone is selected in only position 2 then score = 2
   4. If a stone is selected in only position 3 OR in positions 1 and 2 then score = 3
   5. If a stone is selected in positions 1 and 3 then score = 4
   6. If a stone is selected in positions 2 and 3 then score = 5
   7. If a stone is selected in positions 1, 2, and 3, then score = 6
2. Select and Order Small Stones: Examinees are asked to fill in between the first and second large stones and in between the second and third large stone with three small stones. Thus there are a total of 9 positions for the smaller stones. Scores will range from 0 to 21 using the same position adding method outline above.

This particular assessment contains the following sequence

* 1 Order Large Stones
* 2 Select and Order Small Stones.

We can think of the there being this assessment as having 3 polytomously scored items. Items can be coded as 1\_LS\_1, 1\_ST\_1, and 1\_LT\_2, and so forth.

**PENHOLDER**

1. Select Top 4 Pencils: Each set of pencils represents 8 items. The examinee is asked to select from among 8 pencils and place them into cups marked 1st choice through 4th choice. Unselected pencils will be scored 0 while 1st choice will be scored 4, 2nd choice 3, 3rd choice 2, and 4th choice 1 (note reverse scoring).

This particular assessment is a one item assessment. Nonetheless, we will use a coding scheme that will allow for additional items to be added later.

We can think of this a set of 8 polytomously scored items. We will code these items as 1\_PH\_1, 1\_PH\_2, …, 1\_PH\_8.

**PROJECTIVE**

1. Imagine and Select Image: Examinee is asked to select from 1 of 6 photos that they can identify with. The image selected is scored 1 while unselected photos will be scored 0.
2. Glitch Select 1 of 3: Examinee is told that there was problem with system and is asked to confirm what world thinks of them. Selected image is scored 1 while unselected images are scored 0.
3. Order 5 Pictures: Examinees are asked to sequence pictures to make a movie. Picture on left will be scored 0, second picture 1, …, final picture on right will be scored 4.
4. Movie Type Select 1 of 7: Examinees are presented images they’ve selected and asked what type of movie this would make. Movie type selected will be score 1, unselected movies will be scored 0.
5. Likert Slider: Examinee is asked to confirm trait identity using a slider bar. Let’s consider the slider to have 7 equal segments, where the left most segment is scored 0, the next 1, … , and the right most segment is scored 7.

This particular assessment contains the following sequence

* 6 Imagine and Select (moon, sun, flower, castle, face)
* 5 Glitch Select 1 of 3
* 1 Order 5 Pictures
* 1 Movie Type Select 1 of 7
* 5 Likert Sliders

We can think of this test as having 6+5+1+1+5=18 items that are either dichotomously or polytomously scored.

The five items types can be coded using the follow method (first item listed below):

1. Imagine and Select: 1\_IS\_1
2. Glitch Select 1 of 3: 1\_GS13\_1
3. Order 5 Pictures: 1\_O5\_1
4. Movie Type Select 1 of 7: 1\_MS17\_1
5. Likert Slider: 1\_LS\_1

**VALUES**

1. Value Pictures: Each picture represents 1 item. The examinee is asked move a slider to show how important the image is. Let’s think of the length of the bar that the slider moves across as having 100 units. If the examinee moves the bar to the left between 1-20 then the item is scored 0, if the slider is in between 21-40 then the item is scored 1, … , if the slider is between 81-100 then the item is scored 4.
2. All Values Pictures: Each picture represents 1 item. The examinee is provided the pictures they have just seen and are asked to order them. The first two pictures on the left will receive a score of 0, the next two pictures will receive a 1, …, the final two pictures on the right will receive a 4.
3. Pie charts: each pie chart can be considered an 8 item test (i.e., the number of wedges), and in this case the biggest piece of pie will receive a score of 7, the next biggest will receive a 6, and so forth such that the smallest piece of pie will receive a 0. In the case of ties we will use a ‘score down’ procedure (see Holland).

This particular assessment contains the following sequence

* 8 Value Pictures
* 1 All Value Pictures
* 1 Pie chart

We can think of this assessment as having 8 + 8\*1 + 8\*1 = 32 polytomously scored items.

Items will be coded as 1\_VP\_1, 1\_VP\_2, … , 1\_VP\_8, 1\_AVP\_1, … 1\_AVP\_8, 1P1, … , 1P8.

**WLB**

1. WorkHome Pie: This pie chart will considered 2 items (i.e., the number of wedges), and percentage for each piece of pie will recoded such at 0-20 will receive a score of 0, 21-40 will receive a score of 1, and so forth such that 81-100 will receive a 4.
2. Three Picture Slider: Throughout WLB there are three pictures with a slider. Each picture will be considered an item, and the diagram below represents how this item will be scored.

|  |
| --- |
|  |

Note that the overall length of the slider bar will be equally divided into 12 segments.

1. ObjectSlider: Several tasks have an object on a slider (man, couch). Each picture represents 1 item. The examinee is asked move a slider to show how important the image is. Let’s think of the length of the bar that the slider moves across as having 100 units. If the examinee moves the bar to the left between 1-20 then the item is scored 0, if the slider is in between 21-40 then the item is scored 1, … , if the slider is between 81-100 then the item is scored 4.
2. MapPins: Simply count the number of pins.
3. TransPortSlider: This is an ObjectSlider type task with 4 items. Use #4 above to score.
4. Select 1 of 3. The picture selected is scored 1, while unselected pictures are scored 0.
5. Push into 1 of 3 (butterfly net). Purple net = 0, Blue net = 1, Red net = 2
6. Select 1 of 4: The picture selected is scored 1, while unselected pictures are scored 0.
7. Select 1 of 6: The picture selected is scored 1, while unselected pictures are scored 0.
8. Select Time: score 1-12 using the nearest hour.

This particular assessment contains the following sequence:

* 1 WorkHome Pie
* 1 ThreePicture Slider
* 1 ObjectSlider (Man)
* 1 MapPin
* 1 TransPort Slider (4 items)
* 1 Select 1 of 3
* 1 ThreePicture Slider
* 1 ObjectSlider (Couch)
* 5 Push into 1 of 3
* 10 Select 1 of 3 (brief case)
* 2 Select 1 of 3 (building)
* 2 Select 1 of 4
* 1 Select 1 of 3 (toilet)
* 2 Select 1 of 4
* 1 Select 1 of 3 (figure w/ computer)
* 1 Select 1 of 6
* 1 Select time
* 1 Select 1 of 3 (clip board)

We can think of this assessment as having 2+3+1+1+4+1+3+1+1+10+2+2+1+2+1+1+1+1=38 items with a mix of dichotomous and polytomous items.

The nine items types can be coded using the follow method (first item listed below):

1. WorkHome Pie: 1\_WHP\_1
2. ThreePicture Slider: 1\_3PS\_1
3. ObjectSlider: 1\_OS\_1
4. MapPins: 1\_MP\_1
5. TransPortSlider: 1\_TPS\_1
6. Select 1 of 3: 1\_S13\_1
7. Push into 1 of 3: 1\_P13\_1
8. Select 1 of 4: 1\_S14\_1
9. Select 1 of 6: 1\_S16\_1
10. Select Time: 1\_ST\_1

1. Note that there may also exist ‘non-primed’ scores where an examinee is administered a set of items that are specifically sequenced to not prime the examinee in anyway. [↑](#footnote-ref-1)