Reactive Sources

Select state

Alabama

Select sex

Female

Select work status

Full Time Employed

Select RUCA Level

Urban

```
selectInput(
    inputId = "state",
    label = "Select state",
    choices = state_choices
    ),
selectInput(
    inputId = "sex",
    label = "Select sex",
    choices = list("SEX" = c("Female" = "F", "Male" = "M"))
    ),
selectInput(
    inputId = "work_status",
    label = "Select work status",
    choices = list(
      "WORK STATUS" = c(
        "Full Time Employed" = "FT",
        "Other Employed" = "OTHER")))
```

```
selectInput(
    inputId = "ruca_level",
    label = "Select RUCA Level",
    choices = list(
      "RUCA LEVEL" = c(
      "Urban" = "Urban",
      "Large Town" = "Large_Town",
      "Small Town" = "Small_Town",
      "Rural" = "Rural")))
```

Reactive Conductors

```
median_data <- reactive(calculate_median(earnings_data(), design_factor()))
```

```
design_factor <- reactive(get_design_factor(input$state))
```

```
earnings_data <- reactive(
  format_earnings(
  get_b20005_ruca_aggregate_earnings(
    input$state,
    input$sex,
    input$work_status)))
```

```
available_ruca_levels <- reactive({
    names(earnings_data())[ !grepl("_MOE", names(earnings_data()))]
  })

observe({
  updateSelectInput(session, "ruca_level", choices = available_ruca_levels()
  )})
```

Reactive Endpoints

```
output$median_data <- renderTable(
  expr = median_data(),
  rownames = TRUE)
```

```
tableOutput(outputId = 'median_data')
```

Median Earnings Estimate (USD)

	Estimate	Standard_Error	Margin_of_Error
Urban	34961.65	160.31	263.71
Large_Town	30495.27	372.55	612.84
Small_Town	28702.38	479.02	787.99
Rural	27426.69	674.60	1109.71

```
output$earnings_data <- renderTable(
  expr = earnings_data(),
  rownames = TRUE)
```

```
tableOutput(outputId = 'earnings_data')
```

Population Estimates for Earnings by RUCA Level

	Urban	Urban_MOE	Large_Town	Large_Town_MOE	Small_Town	Small_Town_MOE	Rural	Rural_MOE
$1 to $2,499 or loss	468	390.69	149	161.69	28	119.91	75	106.51
$2,500 to $4,999	1061	416.25	257	172.32	152	133.61	89	138.90
$5,000 to $7,499	4732	567.89	646	196.03	634	222.35	351	138.45
$7,500 to $9,999	6120	609.46	1142	260.57	558	190.28	315	140.41
$10,000 to $12,499	15981	991.94	1957	311.10	1575	289.07	868	192.77
$12,500 to $14,999	15004	950.71	2169	374.28	2283	344.97	1271	243.89
$15,000 to $17,499	23531	1136.35	3207	551.18	3103	404.23	1745	264.89
$17,500 to $19,999	24143	1213.05	3368	588.04	3087	399.64	1780	280.16
$20,000 to $22,499	32543	1358.04	4598	607.53	3696	588.88	1873	271.86
$22,500 to $24,999	23514	1133.26	4043	456.87	2583	342.44	1478	240.77
$25,000 to $29,999	52939	1708.36	8301	639.95	4462	439.78	2319	302.70
$30,000 to $34,999	49517	1631.90	7713	642.68	4213	433.73	2144	284.82
$35,000 to $39,999	41930	1466.45	5488	532.67	3106	383.77	1456	235.19
$40,000 to $44,999	45026	1481.20	5967	603.88	2754	338.34	1613	256.83
$45,000 to $49,999	30097	1234.73	4012	427.49	1921	265.24	957	203.98
$50,000 to $54,999	39841	1352.53	4290	448.48	2213	304.45	953	180.94
$55,000 to $64,999	36174	1336.33	3685	443.46	2014	301.76	973	183.47
$65,000 to $74,999	22363	1068.10	2131	342.26	1074	227.17	654	177.50
$75,000 to $99,999	25286	1143.51	2747	396.44	1072	222.22	695	175.70
$100,000 or more	20739	981.42	1612	310.00	820	180.53	337	126.01

```
output$earnings_histogram <- renderPlot(
  expr = make_plot(
    data=earnings_data(),
    ruca_level=input$ruca_level,
    plot_title=earnings_plot_title()))
```

```
plotOutput(outputId = 'earnings_histogram')
```


```
output$download_selected_b20005_data <- downloadHandler(
  filename = "b20005_data.zip",
  content = function(fname) {
    write.csv(...)
    write.csv(...)
    zip(zipfile = fname, files=fs)
  }, contentType = "application/zip")
```

```
downloadButton(
  outputId = "download_selected_b20005_data",
  label = "Download Selected Tract-Level Data")
```

Download Selected Tract-Level Data

```
output$download_all_b20005_data <- downloadHandler(
  filename = "b20005_data.zip",
  content = function(fname) {
    write.csv(...)
    write.csv(...)
    zip(zipfile = fname, files=fs, flags = " -r9Xj")
  },contentType = "application/zip")
```

```
downloadButton(
  outputId = "download_all_b20005_data",
  label = "Download All Tract-Level Data (~20MB)")
```

Download All Tract-Level Data (~20MB)

```
output$download_median_summary <- downloadHandler(
  filename = median_summary_filename(),
  content = function(file) {
    write.csv(median_data(), file)
  })
```

```
downloadButton(
  outputId = "download_median_summary",
  label = "Download Median Earnings Summary")
```

Download Median Earnings Summary

```
output$download_earnings_plot <- downloadHandler(
  filename = fname,
  content = function(file) {
    file,
    ggsave(data=earnings_data(), device="png")
  })
```

```
downloadButton(
  outputId = "download_earnings_plot",
  label = "Download Plot")
```

Download Plot

```
output$download_ruca_earnings <- downloadHandler(
  filename = ruca_earnings_filename(),
  content = function(file) {
    write.csv(earnings_data(), file)
  })
```

```
downloadButton(
  outputId = "download_ruca_earnings",
  label = "Download RUCA Level Earnings")
```

Download RUCA Level Earnings

Query Functions

```
get_b20005_ruca_aggregate_earnings(state, sex, work_status){
  Get Variable Names
  Derive RUCA Level Estimates and MOE
  Add Descriptive Labels
  return Aggregated Estimates and MOEs data.frames
}
```

```
format_earnings(rs) {
  Extract data.frame Objects from List
  Reshape data.frame Objects
  Add Descriptive Labels
  return Formatted data.frame
}
```

```
get_design_factor(state){
  Query the Database
  Convert to Numeric
  return Design Factor
}
```

```
calculate_median(data, design_factor) {
  Create Frequency Distribution
  Calculate Weighted Total
  Approximate Standard Error
  Calculate Median Estimate Bounds
  Reshape the Data
  return Estimate, SE and MOE
}
```

```
get_b20005_tract_earnings(state, sex, work_status, get_all){
  Get Variable Names
  Query the Database
  return Earnings and MOE data.frame
}
```

```
get_b20005_labels(){
  Query the Database for Earnings Labels
  return Labels
}
```

```
get_all_labels(){
  Query the Database for all Labels
  return Labels
}
```

Database Tables

ruca

COUNTYFIPS	TEXT
STATE	TEXT
COUNTY	TEXT
TRACTFIPS	TEXT
PRIMARYRUCA	INT
SECONDARYRUCA	DOUBLE
TRACTPOPULATION	INT
LANDAREA	DOUBLE
POPULATIONDENSITY	DOUBLE
DESCRIPTION	TEXT

b20005

state	TEXT
county	TEXT
tract	TEXT
B20005_001E	INT
B20005_001M	INT

b20005_vars

name	TEXT
label	TEXT

codes

CATEGORY	TEXT
CODE	TEXT
DESCRIPTION	TEXT

design_factors

YEAR	TEXT
PERIOD	TEXT
STATE	TEXT
ST	TEXT
CHARTYP	TEXT
CHARACTERISTIC	TEXT
DESIGN_FACTOR	DOUBLE