D. RESEARCHERS’ QUESTIONS AND PHP/SPARQL QUERIES

—Query 1: In what find regions does technique $T$ appear?

```
SELECT DISTINCT ?loc_label
WHERE {
  {
    ?obj :has_representative_technique ?techn2
  } UNION
  {
    ?obj :has_representative_technique ?techn .
  }
}
```

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SELECT DISTINCT ?loc_label
WHERE {

?struct rdfs:label "" . $structure . "" . $lang . ""
{
  ?obj :has_representative_structure ?struct2
}
UNION
{

  ?obj :has_representative_structure ?struct
}

?obj :found_in ?loc.
?loc rdf:type :Location_17.
FILTER (lang(?loc_label) = "$lang")
} ORDER BY ?loc_label

—Q3: In what find sites is technique $T found?

SELECT DISTINCT ?loc_label
WHERE {

?techn rdfs:label "" . $technique . "" . $lang . ""
{
  ?obj :has_representative_technique ?techn2
}
UNION
{

  ?obj :has_representative_technique ?techn .
}

?obj :found_in ?loc.
?loc rdf:type :Location_17.
FILTER (lang(?loc_label) = "$lang")
} ORDER BY ?loc_label

—Q4: In what find sites is structure $S found?

SELECT DISTINCT ?loc_label
WHERE {

?struct rdfs:label "" . $structure . "" . $lang . ""

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Q5: What repositories hold textile objects with technique $T$?

```sparql
SELECT DISTINCT ?mus_label
WHERE {
  ?techn rdfs:label "" . $technique . "" . $lang . "" .
  {
    ?obj :has_representative_technique ?techn2
  }
  UNION
  {
    ?obj :has_representative_technique ?techn .
  }
  FILTER (lang(?mus_label) = "" . $lang . "")
} ORDER BY ?mus_label
```

Q6: What repositories hold textile objects with structure $S$?

```sparql
SELECT DISTINCT ?mus_label
WHERE {
  ?struct rdfs:label "" . $structure . "" . $lang . "" .
  {
    ?obj :has_representative_structure ?struct2
  }
  UNION
  {
    ?obj :has_representative_structure ?struct .
  }
  FILTER (lang(?mus_label) = "" . $lang . "")
} ORDER BY ?mus_label
```
FILTER (lang(?mus_label) = "" . $lang . "")

—Q7 What textile objects present technique $T$?

SELECT DISTINCT ?obj
WHERE {
  ?techn rdfs:label "" . $technique . "" . $lang . "" .
  {
    ?obj :has_representative_technique ?techn2
  }
  UNION
  {
    ?obj :has_representative_technique ?techn .
  }
}

—Q8: What textile objects present structure $S$?

SELECT DISTINCT ?obj
WHERE {
  ?struct rdfs:label "" . $structure . "" . $lang . "" .
  {
    ?obj :has_representative_structure ?struct2
  }
  UNION
  {
    ?obj :has_representative_structure ?struct .
  }
}

—Q9: What images are there of textile object $X$?

SELECT DISTINCT ?img
WHERE {
  :" . $product . " :has_visual_documentation ?doc .
}

—Q10: What motifs appear in textile object $X$?

SELECT DISTINCT ?mot_label
WHERE {
  :" . $product . " :has_part ?classIDmo .
  ?classIDmo rdf:type ?classMo .
  ?classIDmo :is_organized_as ?a .
  ?classMo rdfs:label ?mot_label .
}
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- Q11: What textile styles present technique $T$?

```
SELECT DISTINCT ?style_label
WHERE {
    ?techn rdfs:label "$" . $technique . "$" . $lang . "."
    {
        ?obj :has_representative_technique ?techn2
    }
    UNION
    {
        ?obj :has_representative_technique ?techn .
    }
    ?obj :has_style ?style .
    FILTER (lang(?style_label) = "$" . $lang . ")
}
```

- Q12: What textile styles present structure $S$?

```
SELECT DISTINCT ?style_label
WHERE {
    ?struct rdfs:label "$" . $structure . "$" . $lang . "."
    {
        ?obj :has_representative_structure ?struct2
    }
    UNION
    {
        ?obj :has_representative_structure ?struct
    }
    ?obj :has_style ?style .
    FILTER (lang(?style_label) = "$" . $lang . ")
}
```

- Q13: What cultures are associated with technique $T$?

```
SELECT DISTINCT ?cult_label
WHERE {
    ?techn rdfs:label "$" . $technique . "$" . $lang . "."
    {
        ?obj :has_representative_technique ?techn2
    }
    UNION
    {
        ?obj :has_representative_technique ?techn .
        ?obj :has_representative_technique ?techn2
    }
    FILTER (lang(?cult_label) = "$" . $lang . ")
}
```
SELECT DISTINCT ?cult_label
WHERE {?struct rdfs:label "" . $structure . "" . $lang . "" .
    {?subclass rdfs:subClassOf+ ?struct .
        ?obj :has_representative_structure ?struct2
    }
    UNION
    {
        ?obj :has_representative_structure ?struct
    }
    ?obj :is_affiliated_to ?cult.
    ?cult rdfs:label ?cult_label.
    FILTER (lang(?cult_label) = '" . $lang . "')
}

SELECT DISTINCT ?mat_label
WHERE {?product . "" :has_thread ?threadID .
    FILTER (lang(?mat_label) = '" . $lang . "')
ORDER BY ?mat_label
}

SELECT DISTINCT ?mot_label
WHERE {?techn rdfs:label "" . $technique . "" . $lang . "" .
    {?subclass rdfs:subClassOf+ ?techn .
        ?obj :has_representative_technique ?techn2
    }
    UNION
    }

—Q14: What cultures are associated with structure $S$?

—Q15: What materials is textile $X$ made of?

—Q16: In what motifs does technique $T$ appear?
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```sparql
{  
  ?obj :has_representative_technique ?techn .
}
UNION
?obj :has_part ?classIDmo .
?classIDmo rdf:type ?classMo .
?classIDmo :is_organized_as ?a .
?classMo rdfs:label ?mot_label .
FILTER (lang(?mot_label) = "" . $lang . "")
} ORDER BY ?mot_label

—Q17: In what motifs does structure $S$ appear?

SELECT DISTINCT ?mot_label
WHERE {
  ?struct rdfs:label "" . $structure . "" . $lang . ""
  {
    ?obj :has_representative_structure ?struct2
  }
  UNION
  {
    ?obj :has_representative_structure ?struct
  }
  UNION
  ?obj :has_part ?classIDmo .
  ?classIDmo rdf:type ?classMo .
  ?classIDmo :is_organized_as ?a .
  ?classMo rdfs:label ?mot_label .
  FILTER (lang(?mot_label) = "" . $lang . "")
} ORDER BY ?mot_label

—Q18: In what period does technique $T$ appear?

SELECT DISTINCT ?per_label
WHERE {
  ?techn rdfs:label "" . $technique . "" . $lang . "" .
  {
    ?obj :has_representative_technique ?techn2
  }
  UNION
  {
    ?obj :has_representative_technique ?techn
  }
  ?per rdfs:label ?per_label .
  FILTER (lang(?per_label) = "" . $lang . "")
}

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Q19: In what period does structure $S$ appear?

```sql
SELECT DISTINCT ?per_label
WHERE {
  ?struct rdfs:label "\$structure" . $lang . ".
    ?obj :has_representative_structure ?struct2
  }
  UNION
  {
    ?obj :has_representative_structure ?struct
  }
  ?per rdfs:label ?per_label .
  FILTER (lang(?per_label) = "\$per_label")
} ORDER BY ?per_label
```

Q20: When does technique $T$ appear the first time?

not supported – periods not captured in date format in RDF

Q21: When does structure $S$ appear the first time?

not supported – periods not captured in date format in RDF

Q22: What cultures are associated with textile object $X$ and technique $T$?

```sql
SELECT DISTINCT ?cult_label
WHERE {
  ?techn rdfs:label "\$technique" . $lang . ".
    "$product" :has_representative_technique ?techn2
    "$product" :is_affiliated_to ?cult .
  }
  UNION
  {
    "$product" :has_representative_technique $techn .
    "$product" :is_affiliated_to ?cult .
  }
  ?cult rdfs:label ?cult_label .
  FILTER (lang(?cult_label) = "$lang")
} ORDER BY ?cult_label
```

Q23: What cultures are associated with textile object $X$ and structure $S$?

```sql
SELECT DISTINCT ?cult_label
WHERE {
  ?struct rdfs:label "\$structure" . $lang . ".
  {
    
  }
  
}
```

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"" . $product . "" :has_representative_structure ?struct2
"" . $product . "" :is_affiliated_to ?cult .
}
UNION
{
"" . $product . "" :has_representative_structure ?struct
"" . $product . "" :is_affiliated_to ?cult .
}
?cult rdfs:label ?cult_label .
FILTER (lang(?cult_label) = '" . $lang . "')
} ORDER BY ?cult_label

—Q24: What colours are found in textile object $X with technique $T?

SELECT DISTINCT ?colourName ?rgb
WHERE {
?techn rdfs:label '"" . $technique . '"" . $lang . "" .
{
"" . $product . "" :has_representative_technique ?techn2
"" . $product . "" :has_colour_occurrence ?occ .
}
UNION
{
"" . $product . "" :has_representative_technique ?techn .
"" . $product . "" :has_colour_occurrence ?occ .
}
?occ :has_colour ?colour .
?colour :has_rgb-code ?rgb .
?colour rdf:type ?colClass .
?colClass rdfs:label ?colourName .
FILTER (lang(?colourName) = '"" . $lang . '"')
} ORDER BY ?colourName

—Q25: What colours are found in textile object $X with structure $S?

SELECT DISTINCT ?colourName ?rgb
WHERE {
{
"" . $product . "" :has_representative_structure ?struct2
"" . $product . "" :has_colour_occurrence ?occ .
}
UNION

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R. Brownlow et al.

{  
:" . $product . " :has_representative_structure ?struct  
:" . $product . " :has_colour_occurrence ?occ .  
}

?occ :has_colour ?colour .  
?colour :has_rgb-code ?rgb .  
?colour rdf:type ?colClass .  
?colClass rdfs:label ?colourName .  
FILTER (lang(?colourName) = '" . $lang . "')  
} ORDER BY ?colourName

—Q26: How many colour layers are found in textile object $X with technique $T?

SELECT DISTINCT ?n  
WHERE {  
?techn rdfs:label "" . $technique . "\"" . $lang . "" .  
{  
:" . $product . " :has_representative_technique ?techn2  
:" . $product . " :number_of_colour_layers ?n  
}  
UNION  
{  
:" . $product . " :has_representative_technique ?techn .  
:" . $product . " :number_of_colour_layers ?n  
}  
}

—Q27: How many colour layers are found in textile object $X with structure $S?

SELECT DISTINCT ?n  
WHERE {  
?struct rdfs:label "" . $structure . "\"" . $lang . "" .  
{  
:" . $product . " :has_representative_structure?struct2  
:" . $product . " :number_of_colour_layers ?n  
}  
UNION  
{  
:" . $product . " :has_representative_structure ?struct  
:" . $product . " :number_of_colour_layers ?n  
}  
}