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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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—Q2: In what find regions does structure $S$ appear?

```
SELECT DISTINCT ?loc_label
WHERE {
  {
    ?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 {
  {
    ?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 {
  ?obj :found_in ?loc .
  FILTER (lang(?loc_label) = "$" . $lang . "$))
}
ORDER BY ?loc_label
```
{ 
    ?obj :has_representative_structure ?struct2 
} 
UNION 
{ 
    ?obj :has_representative_structure ?struct 
} 
?obj :found_in ?loc. 
FILTER (lang(?loc_label) = "en") 
ORDER BY ?loc_label

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

SELECT DISTINCT ?mus_label 
WHERE { 
    ?techn rdfs:label "$T" . 
    {?subclass rdfs:subClassOf+ ?techn . 
     ?obj :has_representative_technique ?techn2 } 
    UNION 
    { 
    ?obj :has_representative_technique ?techn . 
    } 
    FILTER (lang(?mus_label) = "en") 
ORDER BY ?mus_label

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

SELECT DISTINCT ?mus_label 
WHERE { 
    {?subclass rdfs:subClassOf+ ?struct . 
     ?obj :has_representative_structure ?struct2 } 
    UNION 
    { 
    ?obj :has_representative_structure ?struct 
    } 
}
FILTER (lang(?mus_label) = "$lang")
} ORDER BY ?mus_label

—Q7 What textile objects present technique $T$?

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

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

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

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

SELECT DISTINCT ?img
WHERE {
  $product :has_visual_documentation ?doc .
  ?doc :visualized_by ?img
}
} ORDER BY ?img

—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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 FILTER (lang(?mot_label) = '" . $lang . "')
} ORDER BY ?mot_label

—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 .
   }
   FILTER (lang(?techn_label) = '" . $lang . "')
 }

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

SELECT DISTINCT ?cult_label
WHERE {
  {
    ?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 . "')
}

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

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

—Q16: In what motifs does technique $T$ appear?

SELECT DISTINCT ?mot_label
WHERE {
  {
    ?obj :has_representative_technique ?techn2
  }
  UNION

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{  
  ?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
  {
  
  }
  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
  {  
  }
  ?per rdfs:label ?per_label .
  FILTER (lang(?per_label) = "" . $lang . ")
—Q19: In what period does structure $S$ appear?

```sparql
SELECT DISTINCT ?per_label
WHERE {
  ?struct rdfs:label "" . $structure . "\"" . $lang . "" .
  {?subclass rdfs:subClassOf+ ?struct .
    ?obj :has_representative_structure ?struct2
  }
  UNION
  {
    ?obj :has_representative_structure ?struct
  }
  ?per rdfs:label ?per_label .
  FILTER (lang(?per_label) = "" . $lang . "")
} 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 $T$?

```sparql
SELECT DISTINCT ?cult_label
WHERE {
  ?techn rdfs:label "" . $technique . "\"" . $lang . "" .
  {?subclass rdfs:subClassOf+ ?techn .
    $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 $S$?

```sparql
SELECT DISTINCT ?cult_label
WHERE {
  ?struct rdfs:label "" . $structure . "\"" . $lang . "" .
  {?
  }
} ORDER BY ?cult_label
```
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:". $product . " has Representative Structure ?struct2
:". $product . " is affiliated to ?cult .

UNION

{" : has Representative Structure ?struct
:". $product . " is affiliated to ?cult .
}

?cult rdfs:label ?cult_label .
FILTER (lang(?cult_label) = "" . $lang . "")

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 . "")
  }

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

SELECT DISTINCT ?colourName ?rgb
WHERE {
  ?struct rdfs:label "" . $structure . "" . $lang . "" .
  {
    :". $product . " has Representative Structure ?struct2
    :". $product . " has Colour Occurrence ?occ .
  }
  }

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{ "$.product" : "has_representative_structure" ?struct .
"$.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 {
  {
    "$product" : "has_representative_technique" ?techn2
  }
  UNION
  {
    "$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 {
  {
    "$product" : "has_representative_structure" ?struct2
  }
  UNION
  {
    "$product" : "has_representative_structure" ?struct
    "$product" : "number_of_colour_layers" ?n
  }
}