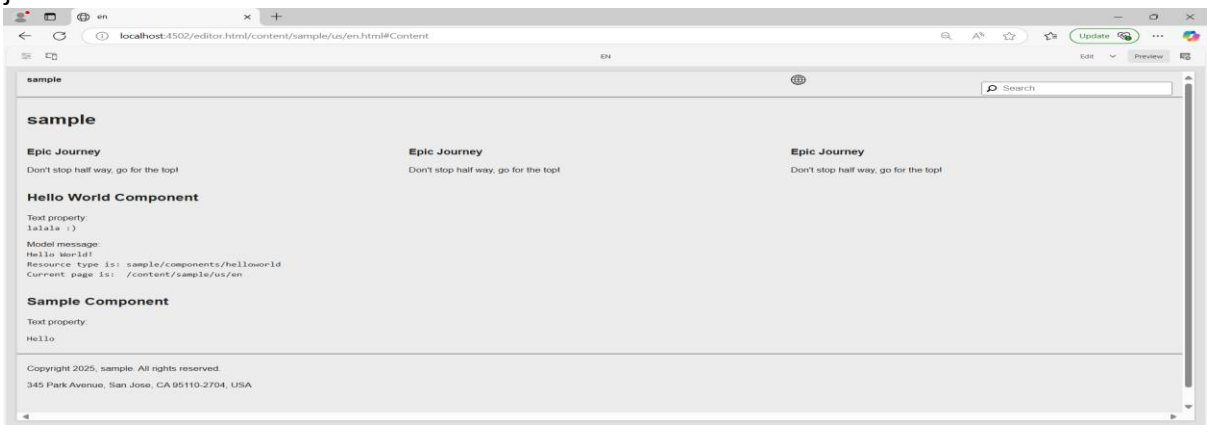
1. Create SampleServlet extend the SlingAllMethod Servlet and register it using resourceType.

Path: /apps/sample/core/src/main/java/com/sample/core/servlets

SampleServlet.java

```
package com.sample.core.servlets;
import org.apache.sling.api.SlingHttpServletRequest;
import org.apache.sling.api.SlingHttpServletResponse;
import org.apache.sling.api.servlets.SlingAllMethodsServlet;
import org.osgi.service.component.annotations.Component;
import org.osgi.framework.Constants;
import javax.servlet.Servlet;
import javax.servlet.ServletException;
import java.io.IOException;
@Component(
        service = {Servlet.class},
        property = {
                Constants.SERVICE_DESCRIPTION + "=Sample Servlet",
                "sling.servlet.methods=GET",
                "sling.servlet.resourceTypes=sample/components/sample"
        }
)
public class SampleServlet extends SlingAllMethodsServlet {
    @Override
    protected void doGet(SlingHttpServletRequest request, SlingHttpServletResponse
response)
            throws ServletException, IOException {
        response.setContentType("text/plain");
        response.getWriter().write("Hello from SampleServlet!");
    }
}
```



2. Create CreatePageServlet extends the SlingSafeMethod Servlet and registers it using path.

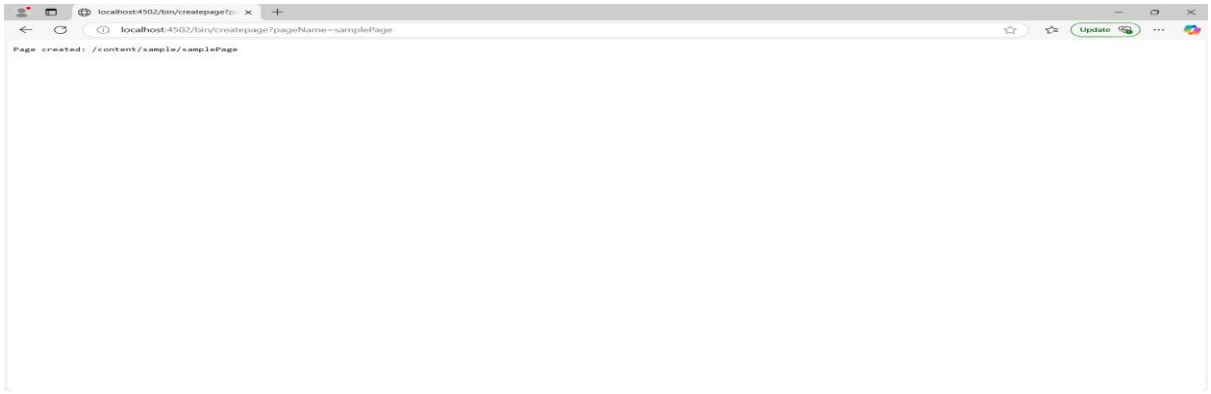
Path: /apps/sample/core/src/main/java/com/sample/core/servlets

CreatePageServlet.java

```
package com.sample.core.servlets;
```

```
import com.day.cq.wcm.api.Page;
import com.day.cq.wcm.api.PageManager;
import org.apache.sling.api.SlingHttpServletRequest;
import org.apache.sling.api.SlingHttpServletResponse;
import org.apache.sling.api.servlets.SlingSafeMethodsServlet;
import org.osgi.service.component.annotations.Component;
import org.osgi.framework.Constants;
import org.slf4j.Logger;
import org.slf4j.LoggerFactory;

import javax.servlet.Servlet;
import javax.servlet.ServletException;
import java.io.IOException;

@Component(
        service = {Servlet.class},
        property = {
                Constants.SERVICE_DESCRIPTION + "= Create Page Servlet",
                "sling.servlet.paths=" + "/bin/createpage",
                "sling.servlet.methods=GET"
        }
)
public class CreatePageServlet extends SlingSafeMethodsServlet {

    private static final Logger LOG = LoggerFactory.getLogger(CreatePageServlet.class);

    @Override
    protected void doGet(SlingHttpServletRequest request, SlingHttpServletResponse
response)
            throws ServletException, IOException {

        String pageName = request.getParameter("pageName");

        if (pageName == null || pageName.isEmpty()) {
            response.getWriter().write("Page name is missing!");
            return;
        }

        try {
            PageManager                                pageManager                                =
request.getResourceResolver().adaptTo(PageManager.class);

            if (pageManager != null) {
                Page newPage = pageManager.create("/content/sample", pageName, "cq:Page",
pageName);

                if (newPage != null) {
                    response.getWriter().write("Page created: " + newPage.getPath());
                    LOG.info("Page created at: {}", newPage.getPath());
                } else {
                    response.getWriter().write("Page creation failed.");
```

```
            }
        } else {
            response.getWriter().write("Failed to adapt to PageManager.");
        }
    } catch (Exception e) {
        LOG.error("Error creating page", e);
        response.getWriter().write("Error creating page: " + e.getMessage());
    }
  }
}
```



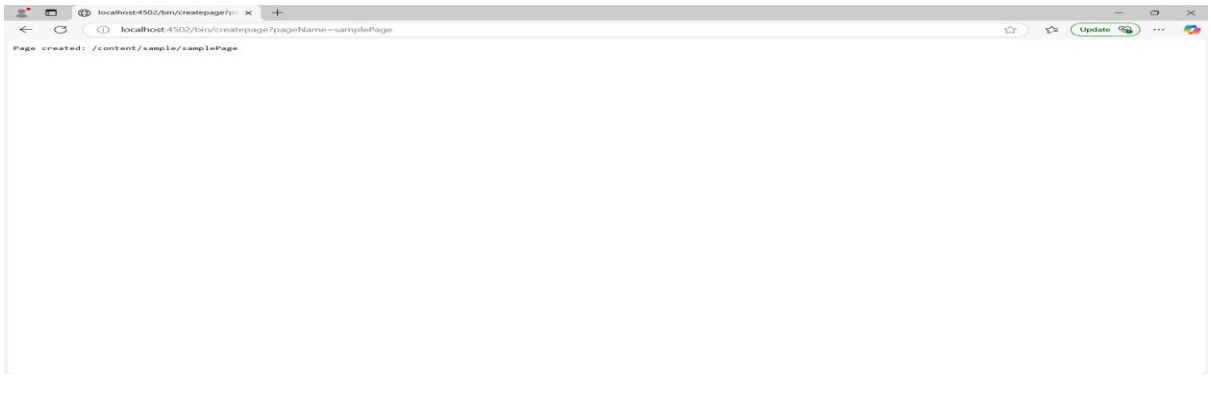
3. Take the page name from the user and create pages in aem using the above servlet.

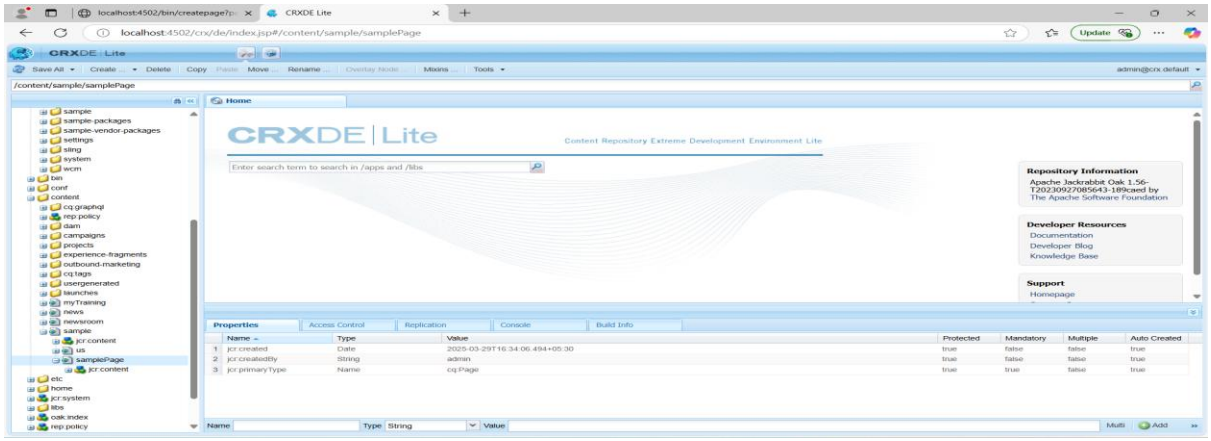
Path: /apps/sample/core/src/main/java/com/sample/core/servlets

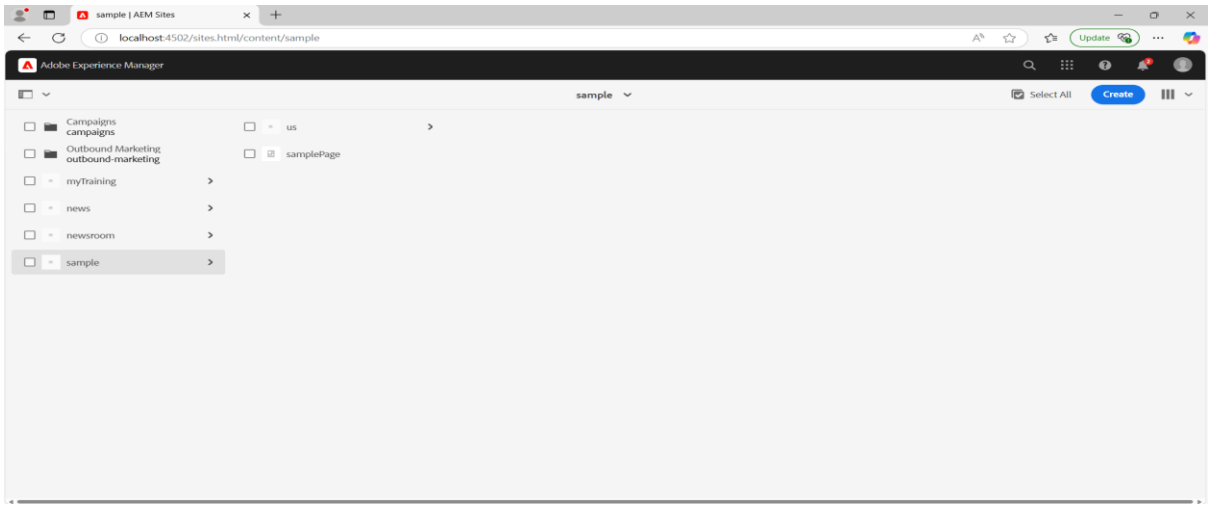
CreatePageServlet.java

```
package com.sample.core.servlets;
import com.day.cq.wcm.api.Page;
import com.day.cq.wcm.api.PageManager;
import org.apache.sling.api.SlingHttpServletRequest;
import org.apache.sling.api.SlingHttpServletResponse;
import org.apache.sling.api.servlets.SlingSafeMethodsServlet;
import org.osgi.service.component.annotations.Component;
import org.osgi.framework.Constants;
import org.slf4j.Logger;
import org.slf4j.LoggerFactory;

import javax.servlet.Servlet;
import javax.servlet.ServletException;
import java.io.IOException;

@Component(
        service = {Servlet.class},
        property = {
                Constants.SERVICE_DESCRIPTION + "= Create Page Servlet",
                "sling.servlet.paths=" + "/bin/createpage",
                "sling.servlet.methods=GET"
        }
```

```
)
public class CreatePageServlet extends SlingSafeMethodsServlet {

    private static final Logger LOG = LoggerFactory.getLogger(CreatePageServlet.class);

    @Override
    protected void doGet(SlingHttpServletRequest request, SlingHttpServletResponse response)
            throws ServletException, IOException {

        String pageName = request.getParameter("pageName");

        if (pageName == null || pageName.isEmpty()) {
            response.getWriter().write("Page name is missing!");
            return;
        }

        try {
            PageManager pageManager = request.getResourceResolver().adaptTo(PageManager.class);

            if (pageManager != null) {
                Page newPage = pageManager.create("/content/sample", pageName, "cq:Page", pageName);

                if (newPage != null) {
                    response.getWriter().write("Page created: " + newPage.getPath());
                    LOG.info("Page created at: {}", newPage.getPath());
                } else {
                    response.getWriter().write("Page creation failed.");
                }
            } else {
                response.getWriter().write("Failed to adapt to PageManager.");
            }
        } catch (Exception e) {
            LOG.error("Error creating page", e);
            response.getWriter().write("Error creating page: " + e.getMessage());
        }
    }
}
```



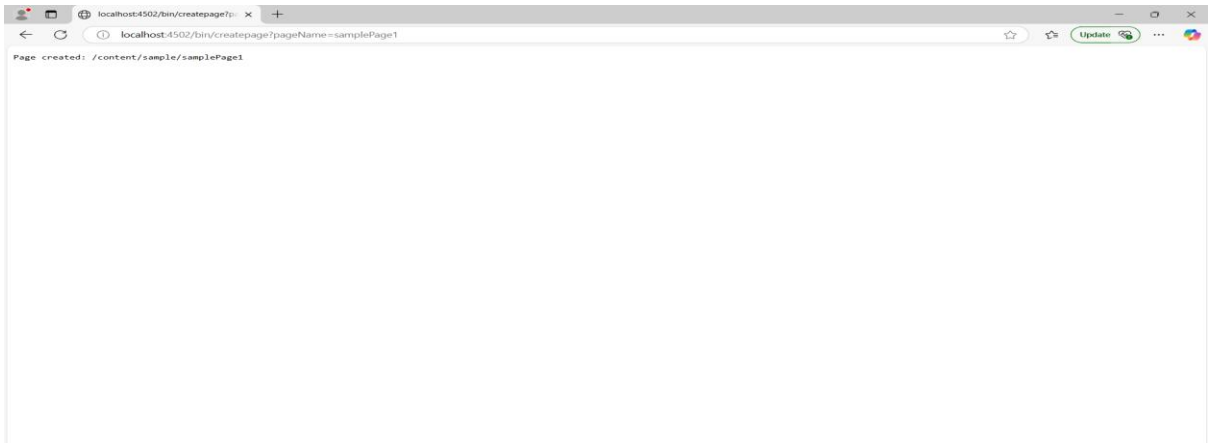


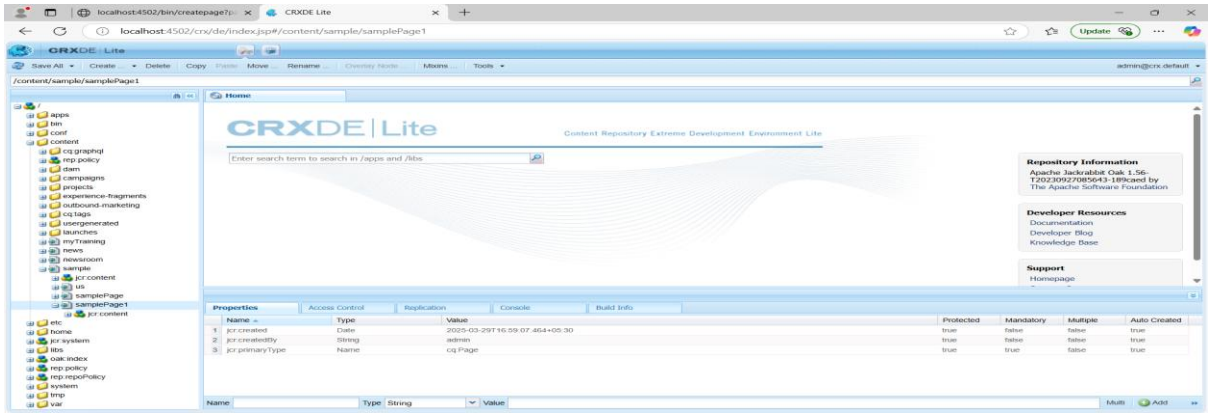


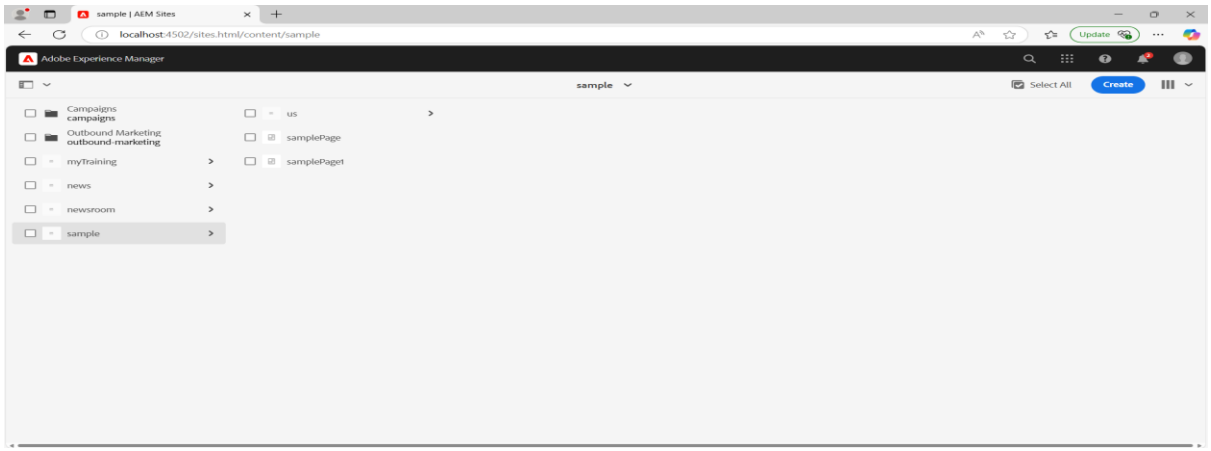
4. Use page Manager Apis for the above task.

In the CreatePageServlet.java file, the PageManager API is used to create the page:
PageManager pageManager =
request.getResourceResolver().adaptTo(PageManager.class);
Page newPage = pageManager.create("/content/sample", pageName,
"/apps/sample/templates/page", pageName);

- pageManager.create() creates the page.
- The parameters specify the parent path, page name, template, and title.
- The session is saved to persist the changes.







5. Create a SearchServlet to search for the content using PredicateMap to search the content from pages. Use this reference for the query builder: https://medium.com/@manumathew28.94/query-builder-aem-5869a1850c85

Path: /apps/sample/core/src/main/java/com/sample/core/servlets

SearchServlet.java

```
package com.sample.core.servlets;

import com.day.cq.search.Query;
import com.day.cq.search.QueryBuilder;
import com.day.cq.search.PredicateGroup;
import com.day.cq.search.result.Hit;
import com.day.cq.search.result.SearchResult;
import org.apache.sling.api.SlingHttpServletRequest;
import org.apache.sling.api.SlingHttpServletResponse;
import org.apache.sling.api.servlets.SlingSafeMethodsServlet;
import org.osgi.framework.Constants;
import org.osgi.service.component.annotations.Component;
import org.osgi.service.component.annotations.Reference;
import org.slf4j.Logger;
import org.slf4j.LoggerFactory;

import javax.jcr.Session;
import javax.servlet.Servlet;
import javax.servlet.ServletException;
```

```
import java.io.IOException;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

@Component(
        service = {Servlet.class},
        property = {
                Constants.SERVICE_DESCRIPTION + "= Search Servlet Using PredicateMap
and QueryBuilder",
                "sling.servlet.paths=" + "/bin/search",
                "sling.servlet.methods=GET"
        }
)
public class SearchServlet extends SlingSafeMethodsServlet {

    private static final Logger LOG = LoggerFactory.getLogger(SearchServlet.class);

    @Reference
    private QueryBuilder queryBuilder;

    @Override
    protected void doGet(SlingHttpServletRequest request, SlingHttpServletResponse
response)
            throws ServletException, IOException {
        String searchTerm = request.getParameter("q");
        if (searchTerm == null || searchTerm.trim().isEmpty()) {
            response.getWriter().write("Search term is missing!");
            return;
        }

        try {
            Map<String, String> map = new HashMap<>();
            map.put("path", "/content/sample");
            map.put("type", "cq:Page");
            map.put("fulltext", searchTerm);
            map.put("p.limit", "-1");
            map.put("p.nodedepth", "4");

            Session session = request.getResourceResolver().adaptTo(Session.class);

            if (session != null) {
                Query query = queryBuilder.createQuery(
                        PredicateGroup.create(map),
                        session
                );

                SearchResult result = query.getResult();
                List<Hit> hits = result.getHits();

                response.getWriter().write("Search Results:\n");
```

```
            if (hits.isEmpty()) {
                response.getWriter().write("No results found.");
            } else {
                for (Hit hit : hits) {
                    response.getWriter().write(hit.getPath() + "\n");
                }
            }
        } else {
            response.getWriter().write("Failed to adapt to JCR Session.");
        }

    } catch (Exception e) {
        LOG.error("Error while executing query", e);
        response.getWriter().write("Error: " + e.getMessage());
    }
  }
}
```