A logo with red blue and white text

Description automatically generated

**Assessment Guide**

**for Competency No.: ECU-SD-4-07**

**Competency: Developing Different Web applications**

|  |  |
| --- | --- |
| Version No.: | 1 |
| Level No.: | 3 |
| Number of Credit Points: | 10 |

**Assessment of Competency Unit No. ECU-SD-4-07**

**Competency: Developing Different Web applications**

The learner has been informed that if they complete this assessment in a manner that is satisfactory to you, the credit points of this competency will be documented in their achievement records. They have been informed that when they are ready for the assessment, they should meet their assessor to set the time and place for their assessment. This meeting can be conducted during the training period. In fact, you can approach them and ask whether they are ready for the assessment.

Learning Outputs (or tasks the learner needs to be capable of to complete this competency): Develops different desktop applications.

1. Prepares the working environment for different web applications.
2. Programs a web application according to the most modern technology available
3. Creates a building block from ready programs and programming parts
4. Verifies that the outputs of the building blocks match the specifications
5. Ensure using version control.

The learner is requested to write the required details in their evaluation sheets

|  |  |
| --- | --- |
| Name: |  |
| Date of Birth: |  |
| Student Number: |  |
| Signature: |  |

Only the Assessor can fill this information:

|  |  |
| --- | --- |
| Name: |  |
| Assessor Number: |  |
| I certify that the learner has achieved the ………………… competency. | |
| Signature: |  |
| Date: |  |

\*\*When you write your comments, please use a different color pen than the learner’s. Please write the date on which the learner has completed any part of the assessment. Kindly include in your notes a brief description of what you have seen or heard, and the reason they have fulfilled the requirements of this competency.

Informative and explanatory remarks

Scope: examples include –but are not limited to– CSS , ruby , JavaScript , html , Eclipse , cline , PyCharm, MongoDB , MySql , PHP , Web API ,ASP.net

First Task: Prepares the working environment for different web applications.

Evidence and Proof Requirements (Performance Criteria)

After completing this lesson, the student is expected to be able to:

1. Choose the suitable devices and equipment, according to the cost and availability in the target market

Scope: to name a few examples: laptop with 3G module, server VM

1. Choose the suitable operating environments, according to the cost, used devices and equipment, and dependency

Scope: to name a few examples: linux, Windows, android, IOS, Harmony, etc.

1. Chooses the programming language according to the requested options in the suggested solution.

Scope: to name a few examples: Xcode , Flutter , Ionic, JAVA, C, ASP.Net - C# - PHP -

1. Chooses the suitable applications, according to the requested technical specifications in the suggested solution.

Scope: to name a few examples: web App, Web API

1. Chooses the suitable data bases, according to the operating environment that was chosen, and the applications’ ability to connect with it.

Scope: to name a few examples: Mysql - MS sql - Oracle - MongoDB - Access - Excel - XML - Flat file - ….

1. Draws the integrated system design according to what was chosen.

Evidence and Proof Requirements 1,2,3,4,5,6:

Product Evidence

The student is requested to create an application (including but not limited to: Ecommerce web app), and they present a report on the most suited choice; in terms of cost, availability in the target market, and the application’s needs, to name a few examples.

Product Evidence

Checklist for a product presented by the student. The product is a report showing their ability to prepare the working environment for building a web application.

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Steps | Student’s Performance | |
| Passed | Not Passed |
| 1 | Chooses the best devices and equipment, according to the cost, availability in the target market, and the application’s needs |  |  |
| 2 | Chooses the best operating environment, according to the cost, used devices and equipment, and dependency |  |  |
| 3 | Chooses the best programming language according to the requested options in the suggested solution |  |  |
| 4 | Chooses the best applications, according to the requested technical specifications in the suggested solution. |  |  |
| 5 | Chooses the best databases, according to the operating environment that was chosen, and the applications’ ability to connect with it. |  |  |
| 6 | Draws the integrated system design according to what was chosen. |  |  |

Second Task: Programs a web application according to the most modern technology available

**Scope**: including but not limited to, IDEs - Python – php – C# - visual basic

Evidence and Proof Requirements (Performance Criteria):

1. Determines the purpose of the application according to the work requirements.
2. Determines the application’s inputs
3. Prepares the suitable environment for programming the application.
4. Prepares the necessary databases for the application.
5. Programs an application that uses web programming technology

Scope: includes but not limited to, PHP on apache on linux - ASP.Net on IIS on windows - .net core on apache on linux

Evidence and Proof Requirements 1,2,3,4,5

Product Evidence

Checklist for an application presented by the student. The application uses web programming technology, an example would be: a simple conversation application

Scope: includes but is not limited to html JavaScript CSS PHP on Apache on Linux - ASP.Net on IIS on windows - .net core on Apache on Linux

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Steps | Student’s Performance | |
| Passed | Not Passed |
| 1 | Carries out a new project Front End |  |  |
| 2 | Modifies the project by adding the different program components. |  |  |
| 3 | Connects the application with the database of the system to be built. |  |  |
| 4 | Defines and links the inputs and outputs of the application, while aligning with the requirements of the system and the database. |  |  |
| 5 | Downloads the web server program. |  |  |
| 6 | Shares the application using the web server . |  |  |
| 7 | Opens the application through the link, and ensures it is functioning as expected. |  |  |

Third Task: Creates a building block from ready programs and programming parts

**Scope**: includes but is not limited to IDEs - Python – php – C# - visual basic

Evidence and Proof Requirements (Performance Criteria)

1. Determines the purpose of the application according to the work requirements
2. Determines the application’s inputs
3. Prepares the suitable environment for programming the application
4. Chooses the models and ready blocks suitable for the application’s purpose
5. Programs an application that uses web programming technology

**Scope**: includes but not limited to, PHP on apache on linux - ASP.Net on IIS on windows - .net core on apache on linux

Evidence and Proof Requirements 1,2,3,4,5:

Product Evidence

Checklist for an application presented by the student. The application uses web programming technology, and is built from ready blocks and models.

An example would be (but not limited to): a simple conversation application

**Scope**: includes but is not limited to PHP on Apache on Linux - ASP.Net on IIS on windows - .net core on Apache on Linux

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Steps | Student’s Performance | |
| Passed | Not Passed |
| 1 | Downloads and installs the equipment used and the dependency |  |  |
| 2 | Carries out a new project Back End |  |  |
| 3 | Chooses the model suited for the application’s purpose |  |  |
| 4 | Modifies the project by adding the different program components. |  |  |
| 5 | Connects the application with the data base of the system to be built |  |  |
| 6 | Defines and links the inputs and outputs of the application, while aligning with the requirements of the system and the data base |  |  |
| 7 | Downloads the web server program |  |  |
| 8 | Shares the application using the web server |  |  |
| 9 | Opens the application through the link, and ensures it is functioning as expected |  |  |

Forth Task: Verifies that the outputs of the building blocks match the specifications

**Scope**: includes but not limited to: Debugging

Evidence and Proof Requirements (Performance Criteria)

1. Reviews the test plan to ensure that the building block fulfills the design’s specifications
2. Tests the building block according to the design’s priorities
3. Fixes any programming mistakes in the building block, if any

Evidence and Proof Requirements 1,2,3:

Product Evidence

Checklist for an application presented by the student, for example, Python application. The student uses a dataset and runs some data processing and analysis using Pandas

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Steps | Student’s Performance | |
| Passed | Not Passed |
| 1 | Reviews the program test plan |  |  |
| 2 | Enters the data required to carry out the program |  |  |
| 3 | Records the results of implementing the program |  |  |
| 4 | Verifies the data produced by the program implementation is correct and logical, and that the code is clean |  |  |
| 5 | Identifies the logical mistakes in the code, if any, using break points |  |  |
| 6 | Fixes the logical mistakes in the code, if any |  |  |
| 7 | Test the program after modification |  |  |

Fifth Task: Ensures using the version control

**Scope**: includes but is not limited to (GIT, TFS, SVN)

Evidence and Proof Requirements (Performance Criteria)

1. Recognizes the different types of version control
2. Creates a source code repository
3. Clones the project from the cloud (clone)
4. Commits each stage of the project (commit)
5. Pulls the other updates from the cloud (pull)
6. Requests pulling what was updated to the cloud (pull request)
7. Pushes the latest update to the cloud (push)

Evidence and Proof Requirements 1,2,3,4,5,6,7

Product Evidence

Checklist of an application presented by the student, for example web application or web API, while using one of the version control methods, using GUI or CLI as a method controlling different clones of applications

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Steps | Student’s Performance | |
| Passed | Not Passed |
| 1 | Recognizes the different types of version control |  |  |
| 2 | Creates a source code repository |  |  |
| 3 | Clones the project from the cloud (clone) |  |  |
| 4 | Commits each stage of the project (commit) |  |  |
| 5 | Pulls the other updates from the cloud (pull) |  |  |
| 6 | Requests pulling what was updated to the cloud (pull request) |  |  |
| 7 | Pushes the latest update to the cloud (push) |  |  |

**Table (1) Assessment for Egyptian Competency No.: ECU-SD-4-07**

**Competency: Developing Different Web Programming**

|  |  |  |
| --- | --- | --- |
| **Issue: 1** | **Grade: 3** | **Credit Points: 15** |
| **Learning Outcomes, and Evidence and Proof Requirements** | **Evidence** | **Decision** |
| First Task: Prepares the working environment for different web programming  Evidence and Proof Requirements (Performance Criteria)  After completing this lesson, the student is expected to be able to:   1. Choose the best devices and equipment, according to the cost and availability in the target market   Scope: to name a few examples: laptop with 3G module, server VM   1. Choose the best operating environments, according to the cost, used devices and equipment, and dependency   Scope: to name a few examples: linux, Windows, android, IOS, Harmony, etc.   1. Chooses the best programming language according to the requested options in the suggested solution   Scope: to name a few examples: Xcode , Flutter , Ionic, JAVA, C, ASP.Net - C# - PHP -   1. Chooses the best applications, according to the requested technical specifications in the suggested solution   Scope: to name a few examples: web App, Web API   1. Chooses the best data bases, according to the operating environments that were chosen, and the applications’ ability to connect with it   Scope: to name a few examples: Mysql - MS sql - Oracle - MongoDB - Access - Excel - XML - Flat file - ….   1. Draws the integrated system design according to the what was chosen | Product Evidence | Fulfilling the list according to the set criteria (verification items). |
| Second Task: Programs a web application according to the most modern technology available  **Scope**: including but not limited to, IDEs - Python – php – C# - visual basic  Evidence and Proof Requirements (Performance Criteria):   1. Determines the purpose of the application according to the work requirements 2. Determines the application’s inputs 3. Prepares the suitable environment for programming the application 4. Prepares the necessary data bases for the application 5. Programs an application that uses web programming technology   Scope: includes but not limited to, PHP on apache on linux - ASP.Net on IIS on windows - .net core on apache on linux | Product Evidence | Fulfilling the test list according to the set criteria (verification items). |
| Third Task: Creates a building block from ready programs and programming parts  **Scope**: includes but is not limited to IDEs - Python – php – C# - visual basic  Evidence and Proof Requirements (Performance Criteria)   1. Determines the purpose of the application according to the work requirements 2. Determines the application’s inputs 3. Prepares the suitable environment for programming the application 4. Chooses the models and ready blocks suitable for the application’s purpose 5. Programs an application that uses web programming technology   **Scope**: includes but not limited to, PHP on apache on linux - ASP.Net on IIS on windows - .net core on apache on linux | Product Evidence | Fulfilling the test list according to the set criteria (verification items). |
| Forth Task: Verifies that the outputs of the building blocks match the specifications  **Scope**: includes but not limited to: Debugging  Evidence and Proof Requirements (Performance Criteria)   1. Reviews the test plan to ensure that the building block fulfills the design’s specifications 2. Tests the building block according to the design’s priorities 3. Fixes any programming mistakes in the building block, if any | Product Evidence | Fulfilling the test list according to the set criteria (verification items). |
| Fifth Task: Ensures using the version control  **Scope**: includes but is not limited to (GIT, TFS, SVN)  Evidence and Proof Requirements (Performance Criteria)   1. Recognizes the different types of version control 2. Creates a source code repository 3. Clones the project from the cloud (clone) 4. Commits each stage of the project (commit) 5. Pulls the other updates from the cloud (pull) 6. Requests pulling what was updated to the cloud (pull request) 7. Pushes the latest update to the cloud (push) | Product evidence | Fulfilling the test list according to the set criteria (verification items). |

**Table (2) Resources Necessary for Assessing the Egyptian Competency No.: ECU-SD-4-07**

**Competency: Developing Different Web Programming**

|  |  |
| --- | --- |
| Necessary Resources | |
| Preparations (Equipment and Tools)   1. Suitable personal computer devices 2. Internet connection 3. Verified google account 4. Printer 5. Necessary environment for developing programming 6. Necessary applications and tools for designing programming | Preparations (necessary materials)   1. Necessary softwares 2. Tools and applications used to designing programming |