

Додаток А
Текст програми

Міністерство освіти і науки України
Харківський національний університет радіоелектроніки

«ЗАТВЕРДЖУЮ»

Керівник кваліфікаційної роботи

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(підпис)

РОЗРОБКА ТА ДОСЛІДЖЕННЯ МЕТОДІВ ІНТЕЛЕКТУАЛЬНОГО
ПОШУКУ КРОС-МЕДІЙНОГО КОНТЕНТУ

Текст програми

ЛИСТ ЗАТВЕРДЖЕННЯ
ГЮИК.503200.007 – 01 12 01 – ЛЗ

УЗГОДЖЕНО:

РОЗРОБИВ:

ст. гр. ІТПМ-20-1

Мірошник С.М.

ЗАТВЕРДЖЕНО

ГЮИК.503200.007 – 01 12 01 – ЛЗ

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Текст програми

ГЮИК.503200.007 – 01 12 01

Аркушів 10

view/registration_view.php

```

<div id = "registration" class="registration_form">
<h3><center>Sign Up</center></h3>
<p id = "r_Message"><?php include "E:/OSPanel/domains/ClosedStore/reg/checkReg.php"; ?></p>
  <div id = "textReg">
    <form id="registrationForm" method="post">
      <p>
        <input id = "firstname" type="text" name = " firstname " placeholder="Firstname"/>
      </p>
      <p>
        <input id = "lastname" type="text" name = " lastname " placeholder="Lastname"/>
      </p>
      <p>
        <input id = "email" type="email" name = "email" placeholder="Email"/>
      </p>
      <p>
        <input id = "country" type="text" name = " country" placeholder="Country"/>
      </p>
      <p>
        <input id = "password" type="password" name = "password" placeholder="Password"/>
      </p>
      <p>
        <input id = "password" type="password" name = "password2" placeholder="Repeat password"/>
      </p>
      <div id="loginButton">
        <input type = "submit" name="loginButton1" id = "loginButton1" value = "Sign Up">
      </div>
    </form>
  <br/>
</div>

```

Обробка даних з форми реєстрації та реєстрація користувача

```

<?php
public function validate($registrationData) {
    $firstname = $registrationData['firstname'];
    $lastname = $registrationData['lastname'];
    $pass = $registrationData['password'];
    $pass2 = $registrationData['password2'];
    $email = $registrationData['email'];
    $country = $registrationData['country'];
    if (!filter_var($email, FILTER_VALIDATE_EMAIL)) {
        $this->systemMessage->errorMessage("Email entered incorrectly!");
        throw new \Exception("Incorrect Email");
    }
    $result = mysqli_query($this->link, "SELECT email FROM user WHERE email = '$email'");
    if (mysqli_num_rows($result) > 0 ) {
        $this->systemMessage->errorMessage("This email is already registered!");
        throw new \Exception("Email: " . $email . " already registered.");
    }

    if (strlen($pass) < 8 or strlen($pass) > 30) {
        $this->systemMessage->errorMessage("Enter a password between 8 and 30 characters!");
        throw new \Exception("Incorrect password format");
    }
    if ($pass != $pass2) {
        $this->systemMessage->errorMessage("The passwords you entered do not match!");
        throw new \Exception("Entered passwords don't match.");
    }
}

```

```

if (strlen($pass2) < 8 or strlen($pass2) > 30) {
    $this->systemMessage->errorMessage("Enter a password between 8 and 30 characters!");
    throw new \Exception("Incorrect password format");
}
if (strlen($firstname) < 1 || strlen($lastname) < 1 ) {
    $this->systemMessage->errorMessage("Firstname or Lastname is empty");
    throw new \Exception("Empty firstname or lastname");
} elseif (strlen($firstname) > 255 || strlen($lastname) > 255) {
    $this->systemMessage->errorMessage("Firstname or Lastname is too long");
    throw new \Exception("Firstname or lastname is too long.");
}
return true;
}
public function createNewCustomer($customerData) {
    try {
        $this->validate($customerData);
    } catch (\Exception $exception) {
        $this->logger->critical($exception->getMessage());
    }
    $pass = md5($pass);
    $pass = strrev($pass);
    $pass = "clothes".$pass."shop";
    $ip = $_SERVER['REMOTE_ADDR'];
    $this->userRepository->save($email, $pass, $firstname, $lastname, $country);
    $this->systemMessage->successMessage("You are successfully registered");
}
?>

```

Додавання даних про тарифний план та розв'язання проблеми холодного старту

<?php

```

public function updateCustomerData($customerData) {
    if (!$customerData['plan']) {
        $this->systemMessage->errorMessage("Subscription Plan didn't choose");
        throw new Exception ("Sub Plan didn't choose");
    }
    $likeActionId = $this->actionTypeRepository->getByCode('like')->getId();
    if (isset($customerData['music']) {
        foreach($customerData['music'] as $song) {
            $this->mediaActionHistoryRepository->save($song['id'], $likeActionId, $this->session->getCurrentUser()->getId());
        }
    }
    if (isset($customerData['movies']) {
        foreach($customerData['movies'] as $movie) {
            $this->mediaActionHistoryRepository->save($movie['id'], $likeActionId, $this->session->getCurrentUser()->getId());
        }
    }
    if (isset($customerData['series']) {
        foreach($customerData['series'] as $seriesItem) {
            $this->mediaActionHistoryRepository->save($seriesItem['id'], $likeActionId, $this->session->getCurrentUser()->getId());
        }
    }
}

```

Сторінка авторизації (auth_view.php)

```

<div id = "authorization" class="auth_form">
<h3><center>Sign In</center></h3>
<p id = "r_Message"><?php include "E:/OSPanel/domains/ClosedStore/reg/checkReg.php"; ?></p>
    <div id = "textReg">
    <form id="authForm" method="post">
    <p>
        <input id = "email" type="email" name = "email" placeholder="Email"/>
    </p>
    <p>
        <input id = "password" type="password" name = "password" placeholder="Password"/>
    </p>
    <div id="loginButton">
    <input type = "submit" name="loginButton1" id = "loginButton1" value = "Sign In">
    </div>
    </form>
    <br/>
</div>

```

Обробка даних з форми авторизації та аутентифікація користувача

```

<?php
public function authentication($authData) {
    $email = $authData['email'];
    $password = $authData['password'];

    if (!filter_var($email, FILTER_VALIDATE_EMAIL)) {
        $this->systemMessage->errorMessage("Email entered incorrectly!");
        throw new \Exception("Incorrect Email");
    }
    $result = mysqli_query($this->link, "SELECT email FROM user WHERE email = '$email'");
    if (mysqli_num_rows($result) = 0 ) {
        $this->systemMessage->errorMessage("User with current email doesn't exist!");
        throw new \Exception("Email: " . $email . ". User doesn't exist.");
    }
    $password = md5($password);
    $password = stripslashes($password);
    $password = "wqw".$password."wfqfw";
    $user = $this->userRepository->getUserByEmail($email);
    if ($user->getPassword() == $password) {
        session_start();
        $currentUser = [
            'is_auth' => true,
            'user_id' => $user->getId(),
            'email' => $user->getEmail(),
            'firstname' => $user->getFirstname(),
            'lastname' => $user->getLastname(),
            'avatar' => $user->getAvatar(),
            'subscription_plan_id' => $user->getSubscriptionPlanId(),
            'country' => $user->getCountry()
        ];
        $this->session->setCurrentUser($currentUser);
        exit("<meta http-equiv='refresh' content='0; url= $_SERVER[PHP_SELF]>");
    }
}

```

music_view.php

```

<?php
    $musicList = $this->block->getMusiclist();
    $recomendedMovies = $this->block->getRecomendedMovies();
?>

<script type="text/javascript" src="/js/player.js"></script>

<div class="music_page_content">
    <div class="left_playlist_block">
        <div class="block_title">
            Queue
        </div>
        <div class="playlist">
            <div class="playlist_items" id="playlist_items">
                <?php $inc = 1; ?>
                <?php foreach($musicList as $music): ?>
                    <div class="playlist_item song_item_<?= $inc ?>" id="<?= $inc ?>">
                        <div class="song_poster" onclick="play_aud_id(<?= $inc ?>)">
                            
                            <div class="play_playlist">
                                <div class="play_button">
                                    <input type="image" src="/media/image/p/l/play.PNG" id="play_button">
                                </div>
                            </div>
                        </div>
                        <div class="song_info">
                            <div class="song_title"><?= $music->getTitle() ?></div>
                            <div class="singer">
                                <a href="<?= $this->block->getSingerUrl() ?>"><?= $this->block->getSinger() ?></a>
                            </div>
                        </div>
                    </div>
                <?php $inc++; ?>
                <?php endforeach; ?>
            </div>
        </div>
        <div class="music_control_block">
            <div id="wrapper">
                <div id="player">
                    <audio id="music_player" autoplay></audio>
                    <div class="top_music_control_block">
                        <div class="top_music_control_block_item dislike">
                            
                        </div>
                        <div class="top_music_control_block_item previous">
                            <input type="image" src="/media/image/p/r/previous.PNG" onclick="previous()" id="play_button">
                        </div>
                        <div class="top_music_control_block_item play" id="play_music_button">
                            <input type="image" src="/media/image/p/l/play.PNG" onclick="play_aud()" id="play_button">
                        </div>
                        <div class="top_music_control_block_item pause" id="pause_music_button" hidden>
                            <input type="image" src="/media/image/p/a/pause.PNG" onclick="pause_aud()" id="play_button">
                        </div>
                        <div class="top_music_control_block_item next">
                            <input type="image" src="/media/image/n/e/next.PNG" onclick="next()" id="play_button">
                        </div>
                        <div class="top_music_control_block_item like">
                            
                        </div>
                    </div>
                    <div class="middle_music_control_block">
                        <div class="timeline">
                            <div class="middle_music_control_block_item middle_music_control_block_soundline">
                                <input type="range" id="aud_change_time" onchange="change_time()" step="0.005" min="0" max="1" value="0">
                            </div>
                        </div>
                        <div class="time">
                            <span class="current_time" id="music_current_time">
                                0:00
                            </span>
                            /
                            <span class="fulltime" id="music_fill_time">
                                00:00
                            </span>
                        </div>
                    </div>
                </div>
            </div>
        </div>
    </div>

```

```

</div>
<div class="bottom_music_control_block">
  <div class="bottom_music_control_block_item repeat" id="repeat_music">
    <input type="image" src="/media/image/r/e/repeat.png" onclick="repeat_aud()" id="play_button">
  </div>
  <div class="bottom_music_control_block_item mix">
    <input type="image" src="/media/image/m/i/mix.png" onclick="mix_aud()" id="play_button">
  </div>
  <div class="bottom_music_control_block_item sound">
    <input type="image" src="/media/image/s/o/sound_music.png" onclick="sound_aud()" id="play_button">
  </div>
  <div class="bottom_music_control_block_item bottom_music_control_block_soundline">
    <input type="range" id="change_vol" onchange="change_vol()" step="0.01" min="0" max="1" value="1">
  </div>
</div>
</div>
</div>
</div>
<div class="center_song_block" id="center_song_block"></div>
<div class="right_recommended_movies_block">
  <div class="block_title">
    Recommended movies
  </div>
  <div class="right_recommended_movies_items">
    <div class="music_page_content_row">
      <div class="music_page_content_row_content carousel_vertical">
        <div class="carousel_vertical-button-top"></div>
        <div class="carousel_vertical-wrapper">
          <div class="carousel_vertical-items">
            <?php foreach ($recomendedMovies as $movie): ?>
              <div class="row_item carousel_vertical-block">
                <a href="<?=$movie->getUrl()?>">
                  <div class="row_item_poster">
                    
                  </div>
                </a>
                <div class="row_item_info">
                  <div class="content_item_name">
                    <?=$movie->getTitle() ?>
                  </div>
                  <div class="content_item_year">
                    <?=$movie->getReleaseYear() ?>
                  </div>
                </div>
              </div>
            <?php endforeach; ?>
          </div>
        </div>
      </div>
    </div>
    <div class="carousel_vertical-button-bottom"></div>
  </div>
</div>
</div>
</div>
</div>

```

movie_view.php

```

<?php
    $currentMovie = $this->block->getCurrentMovie();
    $recomendedMovies = $this->block->getRecomendedMovies();
    $musicFromMovie = $this->block->getMusicFromMovie();
?>

<script type="text/javascript" src="/js/video-player.js"></script>

<div class="video_page_content">
  <div class="left_video_page_block">
    <div class="video_wrapper">
      <div class="video_player_wrapper">
        <video id="my-video" class="video_player video-js" controls width="840px" height="480px" poster="<?=$currentMovie->getVideoPoster()?>" preload="auto" data-setup="{}">
          <source src="<?=$movie->getSource()?>" type="video/webm">
        </video>
        <script src="https://vjs.zencdn.net/7.7.5/video.js"></script>
      </div>
    </div>
  </div>

```

```

</div>
<div class="movie_info_block">
  <div class="movie_info_title">
    <?= $currentMovie->getTitle() ?>
  </div>
  <div class="movie_actors_block">
    Actors:
    <?php foreach($currentMovie->getActors() as $actor): ?>
      <a href="<?= $actor->getPage() ?>"><?= $actor->getName() ?></a>;
    <?php endforeach; ?>
  </div>
  <div class="movie_countries_block">
    Countries:
    <?php foreach($currentMovie->getCountries() as $country): ?>
      <?= $country ?>
    <?php endforeach; ?>
  </div>
  <div class="movie_year_block">
    <?= $currentMovie->getReleaseYear() ?>
  </div>
</div>
</div>
<div class="right_video_page_block">
  <div class="right_top_video_page_block">
    <div class="left_right_top_video_page_block">
      <div class="movie_poster">
        
      </div>
      <div class="movie_info">
        <p>Director: <a href="<?= $currentMovie->getDirector()->getPage() ?>"><?= $currentMovie->getDirector()->getName()
?></a></p>
        <p>Views: <?= $currentMovie->getView() ?></p>
        <p>Rating: <?= $currentMovie->getRating() ?>%</p>
        <div class="rating_movie_block">
          <div class="top_music_control_block_item dislike">
            
          </div>
          <div class="top_music_control_block_item like">
            
          </div>
        </div>
      </div>
    </div>
  <div class="right_right_top_video_page_block">
    <div class="block_title">
      Recommended movies
    </div>
    <div class="right_recommended_movies_items">
      <div class="music_page_content_row">
        <div class="music_page_content_row_content carousel_vertical">
          <div class="carousel_vertical-button-top"></div>
          <div class="carousel_vertical-wrapper">
            <div class="carousel_vertical-items">
              <?php foreach($recommendedMovies as $movie): ?>
                <div class="row_item carousel_vertical-block">
                  <a href="<?= $movie->getUrl() ?>">
                    <div class="row_item_poster">
                      
                    </div>
                  </a>
                  <div class="row_item_info">
                    <div class="content_item_name">
                      <?= $movie->getTitle() ?>
                    </div>
                    <div class="content_item_year">
                      <?= $movie->getReleaseYear() ?>
                    </div>
                  </div>
                </div>
              <?php endforeach; ?>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
  <div class="carousel_vertical-button-bottom"></div>
</div>
</div>
</div>
</div>
<div class="right_bottom_video_page_block">

```

```

<div class="playlist_title">
    Music Playlist
</div>
<div class="playlist">
    <div class="playlist_items" id="playlist_items">
        <?php foreach($musicFromMovie as $music): ?>
            <div class="playlist_item">
                <div class="song_poster">
                    
                </div>
                <div class="song_info">
                    <div class="song_title"><?= $music->getTitle() ?></div>
                    <div class="singer"><a href="<?php $music->getSinger()->getPage() ?>">
                        <?= $music->getSinger->getName() ?>
                    </a></div>
                </div>
            </div>
        <?php endforeach; ?>
        <div class="play_playlist">
            <a href="#">
                <div class="play_playlist">
                    <div class="play_button">
                        <input type="image" src="/media/image/p/l/play.PNG" id="play_button">
                    </div>
                </div>
            </a>
        </div>
    </div>
</div>
</div>
</div>
</div>
</div>

```

Визначення ознак схожості контенту

```

<?php
public function calculateSimilarity($currentMedia) {
    $mediaItems = $this->mediaRepository->getAllItems();
    $currentMediaCortege = $this->getCortegesByMediaAsArray($currentMedia);
    $currentMediaMaxWeight = max($currentMediaCortege);
    $currentMediaAttributeCount = count($currentMediaCortege);
    foreach ($mediaItems as $mediaItem) {
        $mediaCortege = $this->getCortegesByMediaAsArray($mediaItem);
        $mediaMaxWeight = max($currentMediaMaxWeight, max($mediaCortege));
        $sameCorteges = array_intersect_key($mediaCortege);
        $result = 0;
        foreach ($sameCorteges as $cortege) {
            $result += (($cortege / $mediaMaxWeight) * 0.75);
        }
        $similarity = $result / $currentMediaAttributeCount * (array_sum($sameCorteges) / $mediaMaxWeight);
        $this->similarityRepository->save($currentMedia->getId(), $mediaItem->getId(), $similarity);
    }
}

public function getCortegesByMediaAsArray($media) {
    $corteges = $this->getAttributesAsCoteges($media);
    $mediaAttributes = [];
    foreach ($corteges as $cortege) {
        $mediaAttributes[$cortege['subject']] = $cortege['weight'];
    }
    return $mediaAttributes;
}

public function getAttributesAsCoteges($media) {
    $mediaAttributes = $media->getAttributes();
    $cotreges = [];
    foreach($mediaAttributes as $mediaAttribute) {
        $cotreges[] = [
            'subject' => $mediaAttribute->getTitle() . ' ' . $media->getValue(),
            'predicate' => $mediaAttribute->getPredicate() ?? 'is',
            'object' => $media->getId(),
            'weight' => $mediaAttribute->getWeight() ?? 0
        ]
    }
    return $media;
}
?>

```

Використання схожості в рамках побудови системи рекомендацій

```

<?php
public function getRecomendation($customer) {
    $customerId = $customer->getId();
    $customerHistory = $this->userActionRepository->getByUserId($customerId);
    $similarityContent = [];

    foreach ($customerHistory as $content) {
        $similarityContent = array_merge($similarityContent, $this->similarityRepository->getSimilarContent($content->getId(), $this->config->getMinSimilar()));
    }

    $contents = $this->mediaRepository->getByIds($similarityContent);
    $contentAttributeFrequency = $this->attributeRepository->getFrequencyByAttributeValue($customerId, $similarityContent);
    $contentAttributeFrequency = $this->attributeRepository->getFrequencyByAttribute($customerId, $similarityContent);

    foreach ($contentAttributeFrequency as $contentAttribute) {
        $networkValue = $contentAttribute['count'] / $customerActionsByAttributeType[$contentAttribute['attribute_type']]['count'];
        $positiveAction = array_filter($contentAttribute, 'getPositive');
        $negativeAction = array_filter($contentAttribute, 'getNegative');
        $networkWeight = ($positiveAction - $negativeAction) / 2 * $customerActionsByAttributeType[$contentAttribute['attribute_type']]['count'];
        $contentAttribute['network_input_value'] = $networkValue*$networkWeight;
    }

    $resultMedia = [];
    $networkParams = $this->config->getNetworkParams();

    foreach ($contents as $content) {
        $resultValue = 0;
        $attributeIds = $content->getAttributeIds();
        foreach ($networkParams as $param) {
            foreach ($attributeIds as $attributeId) {
                $resultValue += (($contentAttributeFrequency[$attributeId]['network_input_value'] * $param['weight']) / count($networkParams));
            }
        }

        if ($resultValue > $this->config->getMinRecomendationValue()) {
            if ($content['type'] = $this->config->getMusicContentType()) {
                $resultContent = $this->generatePlaylist($content);
            }
            $resultMedia[] = $resultContent ?? $content;
        }
    }

    return $resultMedia;
}

public function generatePlaylist($content) {
    $content = $this->similarityRepository->getSimilarContent($content->getId(), $this->config->getMinSimilar());
    shuffle($content);
    return array_slice($content, 0, $this->config->getPlaylistSize());
}

public function getNegative($var) {
    return in_array($var['action_type'], $this->config->getNegativeContentAttrType());
}

public function getPositive($var) {
    return in_array($var['action_type'], $this->config->getPositiveContentAttrType());
}

```

Код консольного застосування

```

$similarityList = [];
$weight = [
    'duration' => 0.05,
    'title' => 0.06,
    'artist' => 0.15,
    'album' => 0.15,
    'year' => 0.02,

```

```

    'bitrate'=> 0.07,
    'bpm'=> 0.07,
    'genre'=> 0.17,
    'sound by'=> 0.11,
    'lyric'=> 0.05,
    'tonality'=> 0.05,
    'fret'=> 0.05
  ];
  $currentMedia = json_decode('{
    "type_id": 1,
    "path": "/media/audio/b/i/billie_eilish_bad_guy.mp3",
    "duration": "'00:03:14'",
    "title": "Bad Guy",
    "picture": "/media/image/b/i/billie-eilish-when-we-all-fall-asleep.jpg",
    "created_at": "2020-06-07",
    "artist": 1,
    "artist": "",
    "artist": "",
    "artist": "",
    "album": 1,
    "year": 2018,
    "bitrate": 320,
    "bpm": 135,
    "genre": "Electropop",
    "genre": "Dance pop",
    "genre": "Pop trap",
    "genre": "Nu goth pop",
    "genre": "Pop",
    "sound_by": "Finneas O'Connell",
    "lyric": "Billie Eilish O'Connell",
    "tonality": "C minor",
    "fret": "5A"
  }');

  $mediaItems = ALL_CONTENT_ARRAY;
  $time1 = microtime(true);
  $mediaAttributes = $currentMedia;
  $corteges = [];
  foreach($mediaAttributes as $title => $mediaAttribute) {
    $corteges[] = [
      'subject' => $title . ' ' . $mediaAttribute,
      'predicate' => $mediaAttribute['predicate'] ?? 'is',
      'object' => 0,
      'weight' => $weight[$title] ?? 0
    ];
  }
  $currentMediaCortege = [];
  foreach ($corteges as $cortege) {
    $currentMediaCortege[$cortege['subject']] = $cortege['weight'];
  }
  $currentMediaMaxWeight = max($currentMediaCortege);
  $currentMediaAttributeCount = count($currentMediaCortege);

  foreach ($mediaItems as $mediaItem) {
    $tempcorteges = [];
    foreach($mediaItem as $tempTitle => $tempmediaAttribute) {
      $tempcorteges[] = [
        'subject' => $tempTitle . ' ' . $tempmediaAttribute,
        'predicate' => $tempmediaAttribute['predicate'] ?? 'is',
        'object' => 0,
        'weight' => $weight[$tempTitle] ?? 0
      ];
    }

    $tempmediaAttributes = [];
    foreach ($tempcorteges as $tempcortege) {
      $tempmediaAttributes[$tempcortege['subject']] = $tempcortege['weight'];
    }

    $tempmediaCortege = $tempmediaAttributes;
    $mediaMaxWeight = max($currentMediaMaxWeight, max($tempmediaCortege));
    $sameCorteges = array_intersect_key($tempmediaCortege, $currentMediaCortege);
    $result = 0;
    foreach ($sameCorteges as $cortege) {
      $result += (($cortege / $mediaMaxWeight) * 0.75);
    }
    $similarity = $result / $currentMediaAttributeCount * (array_sum($sameCorteges) / $mediaMaxWeight);
    $similarityList[] = [

```

```
        $mediaItem->title => $similarity
    ];
}

var_dump microtime(true) - $time1;

$res = [];
foreach($similarityList as $key => $data) {
    $res[(string)array_shift($data)][] = $key;
}
krsort($res);
$finalRes = [];
foreach($res as $key => $value) {
    foreach($value as $item) {
        $finalRes[] = $similarityList[$item];
    }
}

var_dump($finalRes);
```

Додаток Б
Навчальні вибірки

Навчальна вибірка для проведення тестування на точність

type_id,path,duration,title,picture,created_at,artist,artist,artist,artist,album,year,bitrate,bpm,genre,genre,genre,genre,genre,sound_by,lyric,tonality,fret

1,/media/audio/b/i/billie_eilish_bad_guy.mp3,"00:03:14",Bad Guy,/media/image/b/i/billie-eilish-when-we-all-fall-asleep.jpg,2020-06-07,1,,,,,1,2018,320,135,Electropop,Dance pop,Pop trap,Nu goth pop,Pop,Finneas O'Connell,Billie Eilish O'Connell,C minor,5A

1,/media/audio/t/w/twenty_one_pilots_chlorine.mp3,"00:05:25",Chlorine,/media/image/t/w/Twenty_One_Pilots_Trench.png,2020-06-07,2,,,,,2,2018,320,90,Electropop,Pop,Trip hop,Rap rock,,Paul Meany,Tyler Josheph,C# major,3B

1,/media/audio/m/a/maroon_5_moves_like_jagger.mp3,"00:03:22",Moves Like Jagger,/media/image/m/a/maroon_5_moves_like_jagger.jpg,2020-06-07,3,,,,,2010,240,128,Disco,Electropop,,,,Benny Blanko,Adam Levine,E major,12B

1,/media/audio/n/i/niletto_lyubimka,"00:03:39",Любимка,/media/image/n/i/niletto_lyubimka.jpg,2020-06-07,4,,,,,3,2019,320,130,Pop,,,,,Данила Прытков,Данила Прытков,G minor,6A

1,/media/audio/p/h/pharrell_williams_freedom.mp3,"00:02:43",Freedom,/media/image/f/t/Freedom_by_Pharrell_Williams.png,2020-06-07,5,,,,,2015,320,95,Pop,Indie pop,,,,Naughty bu Nature,Pharell Williams,G# minor,1A

1,/media/audio/j/o/john_newman_love_me_again.mp3,"00:03:45",Love Me Again,/media/image/j/o/john_newman_love_me_again.jpg,2020-06-07,6,,,,,4,2013,320,126,Pop,Dance pop,Soul,Northern soul,Breakbeat,Steve Booker,John Newman,F major,7B

1,/media/audio/i/m/imagine_dragons_beliver.mp3,"00:03:23",Believer,/media/image/i/m/imagine_dragons_evolve.jpeg,2020-06-07,7,,,,,7,2018,320,125,Pop rock,Pop,Rock,,,Wayne Sermon,Den Reynolds,A# minor,3A

1,/media/audio/t/w/twenty_one_pilotes_the_judge.mp3,"00:04:57",The Judge,/media/image/t/w/Twenty_One_Pilots_Trench.png,2020-06-07,2,,,,,5,2015,320,165,Electropop,Pop,Trip hop,Rap rock,,Paul Meany,Tyler Josheph,F major,7B

1,/media/audio/b/i/billie_eilish_bury_a_friend.mp3,"00:03:14",burry a friend,/media/image/b/i/billie-eilish-when-we-all-fall-asleep.jpg,2020-06-07,1,,,,,1,2018,320,120,Electropop,Dance pop,Pop trap,Nu goth pop,Pop,Finneas O'Connell,Billie Eilish O'Connell,C minor,5A

1,/media/audio/b/i/billie-eilish-i-love-you.mp3,"00:04:52",I love you,/media/image/b/i/billie-eilish-when-we-all-fall-asleep.jpg,2020-06-07,1,,,,,1,2018,320,137,Electropop,Dance pop,Pop trap,Nu goth pop,Pop,Finneas O'Connell,Billie Eilish O'Connell,E major,7B

1,/media/audio/b/i/billie-eilish-copycat.mp3,"00:03:15",COPYCAT,/media/image/b/i/billie-eilish-dont-smile-at-me.jpg,2020-06-07,1,,,,,6,2017,320,125,Electropop,Dance pop,Pop trap,Nu goth pop,Pop,Finneas O'Connell,Billie Eilish O'Connell,G# minor,1A

1,/media/audio/b/i/billie_eilish_no_time_to_die.mp3,"00:04:03",No time to die,/media/image/b/i/billie_eilish_no_time_to_die.png,2020-06-07,1,,,,,2020,320,144,Electropop,Dance pop,Pop trap,Nu goth pop,Pop,Finneas O'Connell,Billie Eilish O'Connell,E minor,9A

1,/media/audio/i/m/imagine_dragons_thunder.mp3,"00:03:43",Thunder,/media/image/i/m/imagine_dragons_evolve.jpeg,2020-06-07,7,,,,,7,2017,320,172,Pop,Synth pop,,,,Wayne Sermon,Dan Reynolds,F major,7B

1,/media/audio/i/m/imagine-dragons-radioactive.mp3,"00:03:06",Radioactive,/media/image/i/m/imagine_dragons_night_visions.jpeg,2020-06-07,7,,,,,8,2012,240,136,Electronic rock,Rock,Alternative rock,,,Alexander Grant,Dan Reynolds,A major,11B

1,/media/audio/i/m/imagine_dragons_natural.mp3,"00:03:09",Natural,/media/image/i/m/imagine_dragons_origins.png,2020-06-07,7,,,,,9,2018,320,100,Electronic rock,Rock,Alternative rock,,,Justin Tranter,Dan Reynolds,D minor,7A

1,/media/audio/m/a/Maroon-5-Sugar.mp3,"00:03:05",Sugar,/media/image/m/a/maroon_5_v.jpg,2020-06-07,3,,,,,10,2014,320,120,Disco,Funk pop,Pop,Soul,,Mike Posner,Adam Levine,C# major,3B

1,/media/audio/m/a/maroon_5_girls_like_you.mp3,"00:03:55",Girls Like You,/media/image/m/a/maroon_5_red_pill_blues.jpg,2020-06-07,3,48,,,11,2018,320,125,Pop,Pop rock,,,,Henry Walter,Adam Levine,F major,7B

1,/media/audio/m/a/maroon-5-animals.mp3,"00:03:51",Animals,/media/image/m/a/maroon_5_v.jpg,2020-06-07,3,,,,,10,2014,320,95,Disco,Funk pop,Pop,Soul,,Benjamin Levin,Adam Levine,E minor,9A

1,/media/audio/p/h/pharrell_williams_happy.mp3,"00:03:53",Happy,/media/image/p/h/pharrell_williams_happy.png,2020-06-07,5,,,,,2013,320,162,Soul,Neo soul,,,,Pharrell Willians,Pharrell Willians,F minor,4A

1./media/audio/b/r/bruno-mars-24k-magic(mp3ritm.top).mp3,"00:03:46",24K Magic,/media/image/b/r/bruno_mars_24k_magic.jpg,2020-06-07,8,,,,12,2016,320,107,Funk,Disco,R&B,,,Philip Lawrence,Bruno Mars,A# major,6B

1./media/audio/b/r/bruno-mars-the-lazy-song(pod-muzyku.club).mp3,"00:03:15",The Lazy Song,/media/image/b/r/bruno_mars_doo_wops_and_hooligans.jpg,2020-06-07,8,,,,13,2011,320,172,Reggae,Reggae-pop,Pop,Ska,,Philip Lawrence,Bruno Mars,E major,12B

1./media/audio/b/r/Bruno_Mars_-_Thats_What_I_Like.mp3,"00:03:26",That's What I Like,/media/image/b/r/bruno_mars_24k_magic.jpg,2020-06-07,8,,,,12,2017,320,134,Hip hop soul,Soul,New Jack Song,R&B,Funk,Philip Lawrence,Bruno Mars,A minor,8A

1./media/audio/p/i/pitbull-feat-kesha-timber(mp3ritm.top).mp3,"00:03:24",Timber,/media/image/p/i/pitbull_kesha_timber.jpeg,2020-06-07,9,49,,,14,2013,320,130,Dance pop,EDM,Pop,Folktronica,,Armando C. Perez,Kesha Sebert,B Major,1B

1./media/audio/p/i/pitbull-feat-marc-anthony-rain-over-me(mixmp3.club).mp3,"00:03:51",Rain Over Me,/media/image/p/i/pitbull_planet_pit.jpg,2020-06-07,9,50,,,15,2011,320,128,Eurodance,Dance pop,Pop,Latin pop,,Armando C. Perez,RedOne,F major,7B

1./media/audio/p/i/pitbull_ft_ne-yo_afrojack_nayer_-_give_me_everything_(zf.fm).mp3,"00:04:12",Give Me Everything,/media/image/p/i/pitbull_planet_pit.jpg,2020-06-07,9,51,59,62,15,2011,320,129,Eurodance,Dance pop,Pop,Latin pop,,Armando C. Perez,Nick van de Wall,G# major,4B

1./media/audio/m/a/Macklemore & Ryan Lewis - Thrift Shop.mp3,"00:03:55",Thrift Shop,/media/image/m/a/Macklemore_&_Ryan_Lewis_The_Heist.jpeg,2020-06-07,10,52,60,,16,2012,320,100,Pop-rap,Pop,Rap,Comedy hip hop,,Ban Haggerty,Ryan Lewis,A minor,8A

1./media/audio/e/d/Shape Of You.mp3,"00:03:53",Shape of You,/media/image/e/d/ed-sheeran-divide-deluxe-edition.800x800.png,2020-06-07,11,,,,17,2016,320,96,Pop,Dancehall,Tropical house,House,,Steve Mac,Ed Sheeran,A major,11B

1./media/audio/e/d/Ed_Sheeran_-_Perfect_(Acoustic).mp3,"00:04:23",Perfect,/media/image/e/d/ed-sheeran-divide-deluxe-edition.800x800.png,2020-06-07,11,,,,17,2016,320,127,Pop,Dancehall,Tropical house,House,,Ed Sheeran,Ed Sheeran,G major,9B

1./media/audio/e/d/Ed_Sheeran_-_Photograph.mp3,"00:04:19",Photograph,/media/image/e/d/ed_sheeran_multiply.jpg,2020-06-07,11,,,,18,2014,320,108,Folk pop,Pop,Acoustic,,Ed Sheeran,Johnny McDaid,F# minor,11A

1./media/audio/t/h/the_weekend_blinking_lights.mp4,"00:03:22",Blinking lights,/media/image/t/h/the_weekend_blinking_lights.jpg,2020-06-07,12,,,,19,2019,320,85,Synthwave,Synth pop,Pop,Electropop,,Abel Tesfaye,Ahmad Balshe,A# major,6B

1./media/audio/d/r/Drake - God's Plan.mp3,"00:03:18",God's Plan,/media/image/d/r/Drake_-_Scorpion.jpg,2020-06-07,13,,,,20,2018,320,154,Rap,Pop,Pop-rap,Trap,,Aubrey Graham,Ronald LaTour,E minor,9A

1./media/audio/d/r/Drake - Toosie Slide.mp3,"00:04:07",Toosie Slide,/media/image/d/r/Drake_-_Scorpion.jpg,2020-06-07,13,,,,20,2020,320,82,Trap,,,,Aubrey Graham,Ozan Yildirim,C# major,3B

1./media/audio/d/r/In My Feelings - Drake.mp3,"00:03:37",In My Feelings,/media/image/d/r/Drake_-_Scorpion.jpg,2020-06-07,13,,,,20,2018,320,80,Bounce,,,,Aubrey Graham,Benny Workman,A# major,6B

1./media/audio/g/r/Green Day - Holiday .mp3,"00:03:52",Holiday,/media/image/TestScreen_square.svg,2020-06-07,14,,,,21,2010,320,147,Pop punk,Punk,Pop,,,Billie Joe Armstrong,Mike Dirnt,F minor,4A

1./media/audio/g/r/green_day_21_guns.mp3,"00:05:22",21 Guns,/media/image/TestScreen_square.svg,2020-06-07,14,,,,22,2009,320,164,Alternative Rock,Rock,,,,Billie Joe Armstrong,Mike Dirnt,F major,7B

1./media/audio/g/r/Green Day - American Idiot.mp3,"00:02:54",American Idiot,/media/image/TestScreen_square.svg,2020-06-07,14,,,,21,2010,320,93,Punk rock,Rock,Punk,Pop Rock,Pop,Billie Joe Armstrong,Mike Dirnt,C# minor,12A

1./media/audio/d/a/David Guetta ft Ne-Yo & Akon - Work hard, play hard.mp3,"00:05:12",Play Hard,/media/image/TestScreen_square.svg,2020-06-07,15,51,61,,,2010,320,130,Electro house,EDM,Dance pop,Pop,,David Guetta,Shaffer Smith,C# major,3B

1./media/audio/a/r/Blah Blah Blah Armin van Buuren.mp3,"00:02:55",Blah Blah Blah,/media/image/TestScreen_square.svg,2020-06-07,16,,,,24,2018,320,124,Trance,Psychedelic trance,,,,Armin van Buuren,Andrew Bullimore,F minor,4A

1./media/audio/a/r/Armin van Buuren - Turn It Up (Extended Mix).mp3,"00:06:45",Turn It Up,/media/image/TestScreen_square.svg,2020-06-07,16,,,,24,2019,240,138,Dance pop,Pop,Trance,,,,Armin van Buuren,Benno de Goeij,E minor,9A

1./media/audio/a/r/Armin van Buuren - Great Spirit.mp3,"00:07:38",Great Spirit,/media/image/TestScreen_square.svg,2020-06-07,16,53,,,24,2016,320,138,Dance pop,Pop,Trance,,,,Armin van Buuren,Benno de Goeij,A minor,8A

- 1,/media/audio/r/a/Rammshtein – Du hast.mp3,“00:04:27”,Du Hast,/media/image/TestScreen_square.svg,2020-06-07,17,,,,1997,240,125,Industrial metal,Metal,Nu metal,,,Richard Kruspe,Till Lindemann,E minor,9A
- 1,/media/audio/r/a/Rammstein – Engel.mp3,“00:04:24”,Engel,/media/image/TestScreen_square.svg,2020-06-07,17,,,,1997,128,96,Industrial metal,Metal,,,Richard Kruspe,Till Lindemann,D minor,7A
- 1,/media/audio/r/a/Rammstein – Deutschland.mp3,“00:05:34”,Deutschland,/media/image/TestScreen_square.svg,2020-06-07,17,,,,2019,320,120,Industrial metal,Metal,Electro industrial,,,Richard Kruspe,Till Lindemann,G minor,6A
- 1,/media/audio/q/u/Queen - Greatest Hits - 01 - Bohemian Rhapsody.flac,“00:05:55”,Bohemian Rhapsody,/media/image/TestScreen_square.svg,2020-06-07,18,,,,1975,128,143,Progressive rock,Rock,Progressive Pop,Hard Rock,Pop,Freddie Mercury,Freddie Mercury,D major,10B
- 1,/media/audio/q/u/We Will Rock You Queen.mp3,“00:02:03”,We Will Rock You,/media/image/TestScreen_square.svg,2020-06-07,18,,,,1977,128,163,Arena Rock,Rock,,,Brian May,Brian May,A major,11B
- 1,/media/audio/q/u/2-03 Radio Ga Ga Ga.mp3,“00:05:49”,Radio Ga Ga,/media/image/TestScreen_square.svg,2020-06-07,18,,,,1984,128,112,Pop Rock,Rock,Arena Rock,Synth pop,Pop,Roger Taylor,Roger Taylor,F major,7B
- 1,/media/audio/m/o/Monatik - LOVE IT ритм.mp3,“00:03:55”,Love It РИТМ,/media/image/TestScreen_square.svg,2020-06-07,19,,,,25,2019,320,128,Pop,Funk,R&B,,,Anton Chilibi,Dmytro Monatik,G major,9B
- 1,/media/audio/m/o/Кружит голову Монатик.mp3,“00:02:34”,Кружит,/media/image/TestScreen_square.svg,2020-06-07,19,,,,26,2016,320,124,Pop,Funk,R&B,,,Anton Chilibi,Dmytro Monatik,G minor,6A
- 1,/media/audio/a/e/Vechnye_Hity-Aerosmith - Crazy (GET.MP3-MUSIC.CLUB).mp3,“00:05:17”,Crazy,/media/image/TestScreen_square.svg,2020-06-07,20,,,,28,1993,128,163,Soft rock,Rock,Blues rock,,,Joe Perry,Steven Tayler,C major,8B
- 1,/media/audio/a/e/aerosmith_aerosmit_-_amazing_(zf.fm).mp3,“00:05:56”,Amazing,/media/image/TestScreen_square.svg,2020-06-07,20,,,,28,1993,128,140,Blues rock,Rock,,,Steven Tayler,Richie Supa,D major,10B
- 1,/media/audio/b/o/It s My Life Bon Jovi.mp3,“00:03:44”,It’s my Live,/media/image/TestScreen_square.svg,2020-06-07,21,,,,29,2000,240,120,Hard Rock,Rock,,,Max Martin,Jon Bon Jovi,C minor,5A
- 1,/media/audio/b/o/Always.mp3,“00:05:55”,Always,/media/image/TestScreen_square.svg,2020-06-07,21,,,,30,1994,128,143,Hard Rock,Rock,,,Jon Bon Jovi,Jon Bon Jovi,E major,12B
- 1,/media/audio/b/o/Bon Jovi – Bad of roses.mp3,“00:05:38”,Bed of Roses,/media/image/TestScreen_square.svg,2020-06-07,21,,,,31,1992,128,120,Hard Rock,Rock,,,Jon Bon Jovi,Jon Bon Jovi,A major,11B
- 1,/media/audio/t/h/01-Come Together Remastered 2009.mp3,“00:04:19”,Come Together,/media/image/TestScreen_square.svg,2020-06-07,22,,,,32,1969,128,163,Blues rock,Rock,Swamp Rock,,,John Lennon,Paul McCartney,D minor,7A
- 1,/media/audio/t/h/The Beatles 1969 Abbey Road – Here Comes The Sun.mp3,“00:03:06”,Here Comes The Sun,/media/image/TestScreen_square.svg,2020-06-07,22,,,,32,1969,128,129,Folk pop,Pop,,,John Lennon,Paul McCartney,A major,11B
- 1,/media/audio/t/h/21666_The-Beatles-Hey-Jude.mp3,“00:08:09”,Hey Jude,/media/image/TestScreen_square.svg,2020-06-07,22,,,,33,1968,128,143,Pop rock,Pop,Rock,,,John Lennon,Paul McCartney,A# major,6B
- 1,/media/audio/r/a/02. Creep.flac,“00:03:55”,Creep,/media/image/TestScreen_square.svg,2020-06-07,23,,,,34,1993,128,92,Alternative Rock,Rock,Grunge,Post Grunge,,Albert Hammond,Albert Hammond,C major,8B
- 1,/media/audio/e/m/Eminem, Juice WRLD - Godzilla (Lyrics).mp3,“00:03:36”,Godzilla,/media/image/TestScreen_square.svg,2020-06-07,24,55,,,35,2019,320,111,Hip hop,Rap,,,Marshall Mathers,Jarad,A# major,3A
- 1,/media/audio/e/m/Eminem Lose Yourself (House Beats Remix).mp3,“00:03:23”,Lose Yourself,/media/image/TestScreen_square.svg,2020-06-07,24,,,,36,2004,240,102,Hip hop,Rap,Rap Rock,Rock,,Marshall Mathers,Marshall Mathers,G minor,6A
- 1,/media/audio/e/m/Love the way you lie_ Eminem ft. Rihanna.mp3,“00:04:26”,Love The Way You Lie,/media/image/TestScreen_square.svg,2020-06-07,24,56,,,37,2010,320,87,Hip hop,Rap,Pop,,,Marshall Mathers,Marshall Mathers,A# major,6B
- 1,/media/audio/l/i/02. XO Tour Life.mp3,“00:02:59”,XO Tour Llif3,/media/image/TestScreen_square.svg,2020-06-07,25,,,,38,2017,320,155,Emo rap,Rap,,,Symere Woods,Bryan Simmons,E minor,9A
- 1,/media/audio/l/i/04-migos_feat_lil_uzi_vert-bad_and_boujee-573c481e.mp3,“00:05:43”,Bad And Boujee,/media/image/TestScreen_square.svg,2020-06-07,25,57,,,39,2017,320,127,Hip hop,Rap,Trap,,,Symere Woods,Robert Mandell,A minor,8A
- 1,/media/audio/p/o/Sunflower Post Malone Swae Lee.mp3,“00:02:38”,Sunflower,/media/image/TestScreen_square.svg,2020-06-07,26,,,,40,2019,320,90,Hard Rock,Dream pop,Pop,R&B,,Austin Post,Khalif Brown,G major,9B

- 1./media/audio/p/o/Post Malone – Circles(MP3_70K).mp3,“00:03:46”,Circles./media/image/TestScreen_square.svg,2020-06-07,26,,,,40,2019,320,120,Rap Rock,Rap,Rock,,,,Austin Post,Adam Feeney,F major,7B
- 1./media/audio/l/a/10_Lady_Gaga_&_Bradley_Cooper-Shallow.mp3,“00:03:35”,Shallow./media/image/TestScreen_square.svg,2020-06-07,27,58,,,,41,2018,320,95,Country,Rock,Folk rock,,,,Andrew Wyatt,Lady Gaga,G major,9B
- 1./media/audio/l/a/Lady_Gaga_BLACKPINK_Sour_Candy_Audio_.hd.mp3,“00:02:38”,Sour Candy./media/image/TestScreen_square.svg,2020-06-07,27,,,,42,2020,320,120,Dance pop,Pop,Deep House,Electropop,Bubblegum pop,Michael Tucker,Stefani Germanotta,A minor,8A
- 1./media/audio/l/a/Lady_Gaga - Rain On Me.mp3,“00:03:02”,Rain On Me./media/image/TestScreen_square.svg,2020-06-07,27,29,,,,42,2020,320,123,Dance pop,Pop,House,Electropop,Disco,Ariana Grande,Stefani Germanotta,A major,11B
- 1./media/audio/j/u/392139768.mp3,“00:03:31”,Yummy./media/image/TestScreen_square.svg,2020-06-07,28,,,,43,2020,320,146,R&B,Pop,,,,Jason Boyd,Justin Bieber,F major,7B
- 1./media/audio/j/u/DJ Snake ft Justin Bieber – Let Me Love You.mp3,“00:03:02”,Let Me Love./media/image/TestScreen_square.svg,2020-06-07,28,29,,,,44,2019,320,99,EDM,Tropical House,House,,,,Andrew Wyatt,Justin Bieber,A# major,6B
- 1./media/audio/a/r/Ariana-Grande-7-Rings-128.mp3,“00:02:59”,7 rings./media/image/TestScreen_square.svg,2020-06-07,29,,,,45,2019,320,70,Trap pop,Pop,Hip Hop,R&B,,Victoria Monet,Ariana Grande,C# minor,12A
- 1./media/audio/m/a/Малый Повзрослел Макс Корж.mp3,“00:03:25”,Малый повзрослел./media/image/TestScreen_square.svg,2020-06-07,30,,,,46,2016,320,140,Rap,Electropop,Pop,Hip Hop,,Макс Корж,Макс Корж,E major,12B
- 1./media/audio/m/a/2 типа людей Макс Корж.mp3,“00:04:15”,2 типа людей./media/image/TestScreen_square.svg,2020-06-07,30,,,,2019,320,172,Rap,Electropop,Pop,Hip Hop,,Макс Корж,Макс Корж,F major,7B
- 1./media/audio/m/a/Малиновый закат Макс Корж.mp3,“00:02:58”,Малиновый закат./media/image/TestScreen_square.svg,2020-06-07,30,,,,47,2017,320,111,Rap,Electropop,Pop,Hip Hop,,Макс Корж,Макс Корж,F# minor,11A
- 1./media/audio/m/a/Макс Барских – Неверная.mp3,“00:03:46”,Неверная./media/image/TestScreen_square.svg,2020-06-07,31,,,,48,2016,320,123,Pop,Electropop,Dance pop,Indie pop,,Макс Барских,Макс Барских,A minor,8A
- 1./media/audio/t/h/The Hardkiss – Антарктида.mp3,“00:03:58”,Антарктида./media/image/TestScreen_square.svg,2020-06-07,32,,,,49,2014,240,132,Pop rock,Pop,Rock,Alternative Rock,,Юлия Санина,Юлия Санина,F minor,4A
- 1./media/audio/t/h/The Hardkiss – Stones.mp3,“00:03:18”,Stones./media/image/TestScreen_square.svg,2020-06-07,32,,,,50,2017,320,150,Pop rock,Pop,Rock,Alternative Rock,,Юлия Санина,Юлия Санина,D major,10B
- 1./media/audio/a/r/2000 Артём Пивоваров.mp3,“00:03:53”,2000e./media/image/TestScreen_square.svg,2020-06-07,33,,,,2019,320,128,Pop,,,,Артем Пивоваров,Артем Пивоваров,F major,7B
- 1./media/audio/a/l/alyona alyona – Пушка.mp3,“00:03:17”,Пушка./media/image/TestScreen_square.svg,2020-06-07,34,,,,51,2019,320,112,Hip hop,Rap,,,,Alyona Alyona,Alyona Alyona,D# major,5B
- 1./media/audio/a/l/alyona_alyona - litak.mp3,“00:03:50”,Літак./media/image/TestScreen_square.svg,2020-06-07,34,,,,51,2019,320,139,Hip hop,Rap,,,,Alyona Alyona,Alyona Alyona,A minor,8A
- 1./media/audio/s/k/Скриптонит_feat_104_Мультибрендовый.mp3,“00:03:10”,Мультибрендовый./media/image/TestScreen_square.svg,2020-06-07,35,,,,2018,320,156,Hip hop,Rap,,,,Скриптонит,Скриптонит,A minor,8A
- 1./media/audio/o/l/Эй, секундочку Оля Полякова.mp3,“00:03:51”,“Эй, секундочку”./media/image/TestScreen_square.svg,2020-06-07,36,,,,2019,320,124,Pop,,,,Оля Полякова,Оля Полякова,B minor,10A
- 1./media/audio/o/l/Оля Полякова-Ночная жрица.mp3,“00:03:28”,Ночная жрица./media/image/TestScreen_square.svg,2020-06-07,36,,,,2019,320,128,Pop,,,,Оля Полякова,Оля Полякова,F minor,4A
- 1./media/audio/p/o/Порнофильмы - Уроки любви.mp3,“00:05:16”,Уроки любви./media/image/TestScreen_square.svg,2020-06-07,37,,,,52,2020,320,143,Punk rock,Rock,Alternative rock,,Владимир Котляров,Владимир Котляров,C# minor,12A
- 1./media/audio/b/r/Bring Me The Horizon - Can You Feel My Heart – QJJYpsA5tv8.m4a,“00:03:48”,Can you feel my heart./media/image/TestScreen_square.svg,2020-06-07,38,,,,53,2013,240,128,Metal,Post Hardcore,Alternative rock,,Terry Date,Terry Date,E minor,9A
- 1./media/audio/f/r/I Will Wait For You - Frank Sinatra.m4a,“00:02:16”,I will wait for your./media/image/TestScreen_square.svg,2020-06-07,39,,,,1963,128,89,Traditional Pop,Pop,,,,Dean Key,Kelly Gordon,C# minor,12A
- 1./media/audio/n/e/Louis_Armstrong_What_A_Wonderful.mp3,“00:02:18”,What A Wonderful World./media/image/TestScreen_square.svg,2020-06-07,40,,,,54,1987,128,106,Traditional Pop,Pop,Jazz,,Bob Thiele,George David Weiss,F major,7B

1,/media/audio/n/e/Ella Fitzgerald and Louis Armstrong - Cheek To Cheek.mp3,"00:05:40",Cheek to Cheek,/media/image/TestScreen_square.svg,2020-06-07,40,,,,55,1985,128,123,Traditional Pop,Pop,Jazz,,,Bob Thiele,George David Weiss,F major,7B

1,/media/audio/l/i/Linkin-Park-In-The-End.mp3,"00:03:41",In The End,/media/image/TestScreen_square.svg,2020-06-07,41,,,,56,2000,128,105,Nu metal,Metal,Rap Rock,Alternative Rock,Rock,Brad Delson,Chester Bennington,A# minor,3A

1,/media/audio/d/u/Dua Lipa Don't Start Now Offi.mp3,"00:03:05",Don't Start Now,/media/image/TestScreen_square.svg,2020-06-07,42,,,,57,2020,320,124,Nu disco,Disco,Pop,,,Caroline Ailin,Dua Lipa,G major,9B

1,/media/audio/d/u/01. Break My Heart.mp3,"00:03:57",Break My Heart,/media/image/TestScreen_square.svg,2020-06-07,42,,,,57,2020,320,113,Dance pop,Pop,Disco,,,Andrew Watman,Dua Lipa,E minor,9A

1,/media/audio/z/i/001. Zivert - Life.mp3,"00:03:08",Life,/media/image/TestScreen_square.svg,2020-06-07,43,,,,58,2019,320,120,Electropop,Pop,,,,Юлия Зиверт,Юлия Зиверт,B minor,10A

1,/media/audio/z/i/Zivert - Fly _ Vinyl _1 infdQ-ZHgD4.m4a,"00:03:13",Fly,/media/image/TestScreen_square.svg,2020-06-07,43,,,,58,2019,320,120,Electropop,Pop,,,,Юлия Зиверт,Юлия Зиверт,A major,11B

1,/media/audio/t/v/08 Мова Тіла.m4a,"00:03:34",Мова тіла,/media/image/TestScreen_square.svg,2020-06-07,44,,,,59,2019,320,124,Electropop,Electro,House,,,Творчі,Творчі,D minor,7A

1,/media/audio/o/t/Два нуль один вісім O.Torvald.mp3,"00:03:40",Два Нуль Один Вісім,/media/image/TestScreen_square.svg,2020-06-07,45,,,,2018,320,108,Pop punk,Pop,Alternative rock,Metal,,Женя Галич,Женя Галич,C# minor,12A

1,/media/audio/b/a/01 Backstreet Boys - I Want It That Way.mp3,"00:03:35",I Want It That Way,/media/image/TestScreen_square.svg,2020-06-07,46,,,,60,1999,128,99,Pop,,,,Andreas Carlsson,Max Martin,A major,11B

1,/media/audio/c/a/Shawn_Mendes_Señorita_Lyrics_Ft_Camila_Cabello.128.mp3,"00:03:04",Señorita /media/image/TestScreen_square.svg,2020-06-07,47,,,,61,2019,320,117,Latin pop,Pop,,,,Show Mendes,Camila Cabello,F major,7B

Результуюча навчальна вибірка з вихідними даними для проведення тестування на точність

title

burry a friend

I love you

КОПУСАТ

No time to die

Chlorine

Natural

Girls Like You

God's Plan

Shallow

In My Feelings

Додаток В
Графічний матеріал

Міністерство освіти і науки України
Харківський національний університет радіоелектроніки

«ЗАТВЕРДЖУЮ»

Керівник кваліфікаційної роботи

_____ проф. Гребеннік І.В.
(підпис)

РОЗРОБКА ТА ДОСЛІДЖЕННЯ МЕТОДІВ ІНТЕЛЕКТУАЛЬНОГО
ПОШУКУ КРОС-МЕДІЙНОГО КОНТЕНТУ

Графічний матеріал

ЛИСТ ЗАТВЕРДЖЕННЯ

ГЮИК.503200.007 – ЛЗ

УЗГОДЖЕНО:

РОЗРОБИВ:

ст. гр. ІТПМ-20-1

Мірошник С.М.

ЗАТВЕРДЖЕНО

ГЮИК.503200.007 – ЛЗ

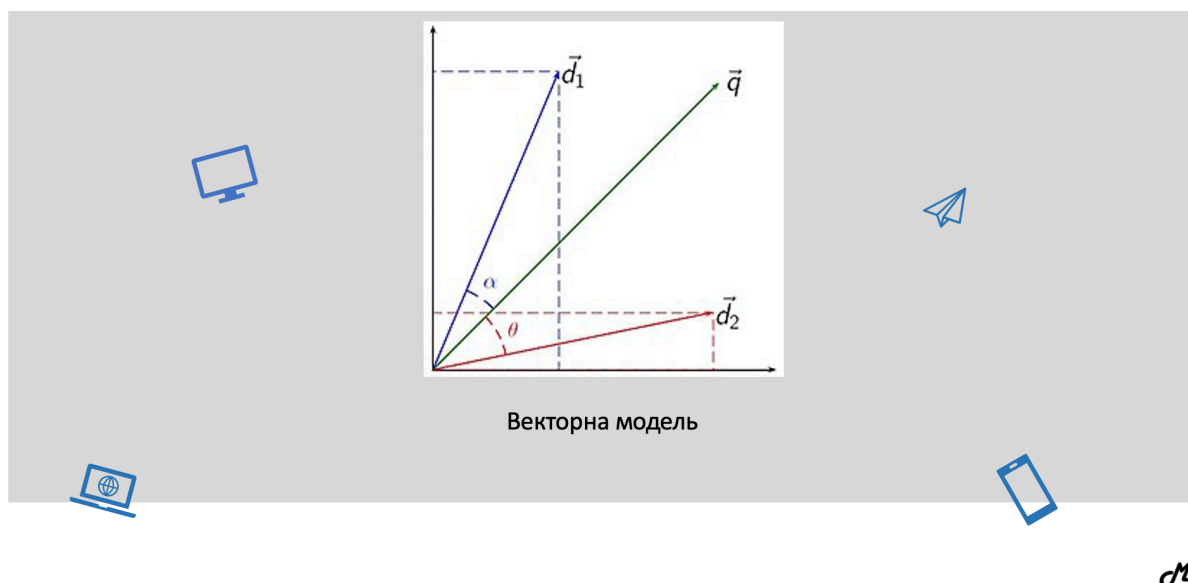
РОЗРОБКА ТА ДОСЛІДЖЕННЯ МЕТОДІВ ІНТЕЛЕКТУАЛЬНОГО
ПОШУКУ КРОС-МЕДІЙНОГО КОНТЕНТУ

Графічний матеріал

ГЮИК.503200.007

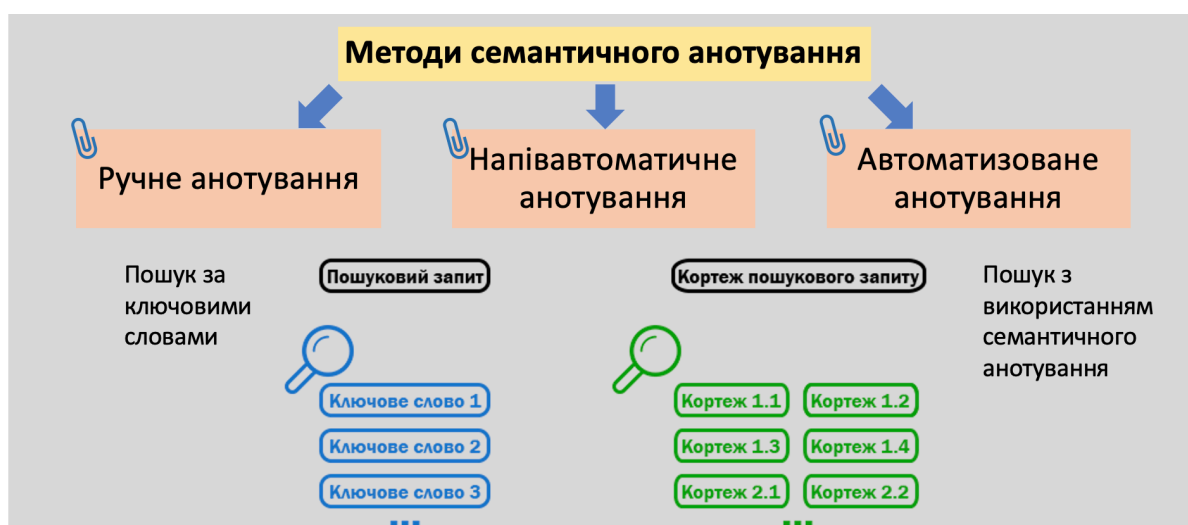
Аркушів 6

Аналоги алгоритму



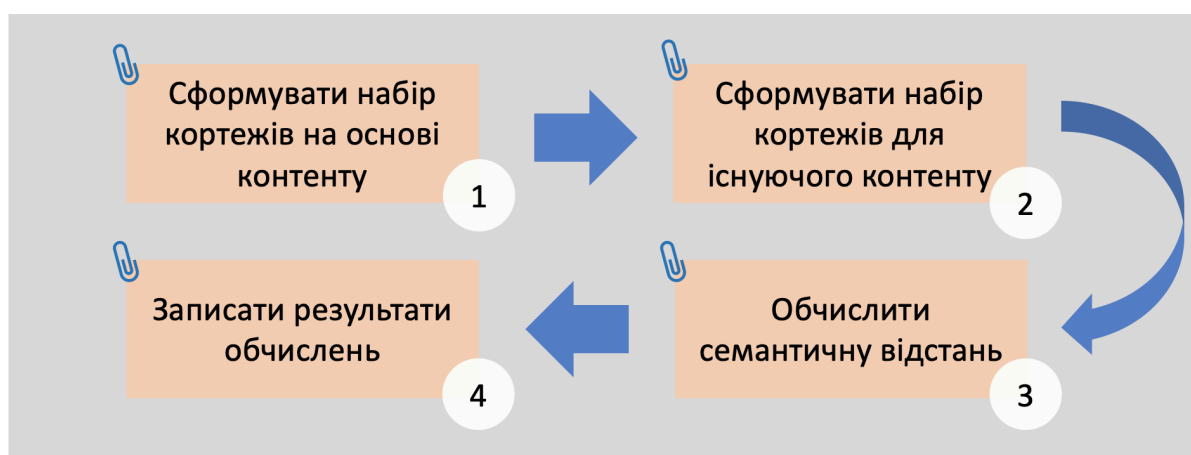
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| Перевішив | Гребеннік І.В. | | | | | 1 | 1 |
| Н.контр. | | | | | | ХНУРЕ
кафедра СТ | |
| Затв. | Гребеннік І.В. | | | | | | |

Технологія семантичного анотування



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| Перевішив | Гребеннік І.В. | | | | | 1 | 1 |
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**Алгоритм пошуку крос-медійного контенту.
Виявлення схожості крос-медійного контенту**



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| Змін. | Арк. | № докум. | Підп. | Дата | | | |
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| Н.контр. | | | | | | ХНУРЕ | |
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Алгоритм пошуку крос-медійного контенту. Використання схожості у процесі пошуку



| | | | | | | | |
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| Перевірив | Гребеннік І.В. | | | | | 1 | 1 |
| Н.контр. | | | | | | ХНУРЕ | |
| Затв. | Гребеннік І.В. | | | | | кафедра СТ | |

**Результати дослідження програмним шляхом
для визначення точності пошуку**

| Музична композиція | Міра схожості |
|---|-------------------------|
| Billie Eilish – burry a friend | 0.68528330449827 |
| Billie Eilish – I love you | 0.40549307958478 |
| Billie Eilish - COPYCAT | 0.19869160899654 |
| Billie Eilish – No time to die | 0.19869160899654 |
| Twenty One Pilots – Chlorine | 0.10137326989619 |
| Imagine Dragons – Natural | 0.10137326989619 |
| Drake – God’s Plan | 0.10137326989619 |
| Maroon 5 - Girls Like You | 0.10137326989619 |
| Drake – In My Feelings | 0.10137326989619 |
| Lady Gaga & Bradley Cooper –
“Shallow” | 0.10137326989619 |

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| | | | | | ГЮОИК. 503200.007 ДЗ | | |
| Змін. | Арк. | № докум. | Підп. | Дата | | | |
| Розробив | Мірошник С.М. | | | | Розробка та дослідження методів інтелектуального пошуку крос-медійного контенту | Аркуш | Аркушів. |
| Перевірив | Гребеннік І.В. | | | | | 1 | 1 |
| Н.контр. | | | | | | ХНУРЕ | |
| Затв. | Гребеннік І.В. | | | | | кафедра СТ | |

Результат дослідження на основі веб-застосунку

| Ім'я | Якість рекомендацій | Якість формування добірок | Якість пошуку | Зручність сервісу | Середня оцінка |
|----------------|---------------------|---------------------------|---------------|-------------------|----------------|
| Антон Ф. | 5 | 4 | 5 | 4 | 4.5 |
| Костянтин І. | 4 | 5 | 5 | 5 | 4.75 |
| Ірина Т. | 5 | 5 | 5 | 5 | 5 |
| Антон П. | 5 | 5 | 5 | 3 | 4.5 |
| Юлія К. | 5 | 5 | 4 | 5 | 4.75 |
| Єгор Г. | 5 | 5 | 5 | 5 | 5 |
| Андрій М. | 5 | 5 | 5 | 5 | 5 |
| Галина М. | 5 | 4 | 5 | 5 | 4.75 |
| Богдан Д. | 5 | 5 | 5 | 3 | 4.5 |
| Володимир Д. | 4 | 4 | 5 | 5 | 4.5 |
| Вікторія В. | 5 | 5 | 5 | 5 | 5 |
| Загалом | | | | | 4.75 |

| | | | | | | | |
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| Перевірив | Гребеннік І.В. | | | 1 | | 1 | |
| Н.контр. | | | | ХНУРЕ
кафедра СТ | | | |
| Затв. | Гребеннік І.В. | | | | | | |

Додаток Г
Програма конференції



UNIVERSITY OF NATIONAL AND WORLD ECONOMY
The Spirit Makes The Power

**11TH INTERNATIONAL CONFERENCE ON APPLICATION OF
INFORMATION AND COMMUNICATION TECHNOLOGY AND STATISTICS
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(ICAICTSEE – 2021)**

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| PAPER | TITLE |
|-------|---|
| FA-21 | DIGITAL COMPONENTS OF DEVELOPING A MODERN BUSINESS MODEL IN AN INNOVATIVE ECONOMY
Tetiana Bochulia
State Biotechnological University, Kharkiv, Ukraine |
| FA-16 | INTELLIGENT SEARCH OF CROSS-MEDIA CONTENT
Stanislav Miroshnyk, Igor Grebennik
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine |
| FA-23 | NEW PARADIGMS OF ECONOMIC DEVELOPMENT IN THE CONTEXT OF THE EPIDEMIOLOGICAL CRISIS
Crustian Marian Barbu
ARTIFEX University of Bucharest, Romania |
| FA-24 | QUALITY MANAGEMENT IN UNIVERSITY EDUCATION IN THE CONTEXT OF ONLINE EDUCATION
Alexandru Lucian Manole
ARTIFEX University of Bucharest, Romania |
| FA-25 | THE SPATIO-TEMPORAL CONCEPTION IN THE CONTEXT OF A NEW PARADIGM OF THE LABOR MARKET
Ghenadie Ciobanu,
ARTIFEX University of Bucharest, Romania |
| FA-26 | OCCUPATIONAL MOBILITY IN EU MEMBER STATES IN THE CONTEXT OF THE CHALLENGES OF THE PANDEMIC CRISIS
Ghenadie Ciobanu, Elena Bugudui
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| FA-27 | ONLINE MARKETING IN THE NEW CONDITION OF EVOLUTION AND OF THE PANDEMIC CRISIS
Catalin Deatcu
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| FA-04 | DIFFICULTIES IN ORGANIZING SME BUSINESS DURING COVID-19 MEASURES AND RESTRICTIONS IN THE REPUBLIC OF SERBIA
Ivana Marinovic Matovic¹, Milos Pavlovic^{2,3}
¹ PUC Parking Service, Nis, Serbia
² Belgrade Business and Arts Academy of Applied Studies, Belgrade, Serbia
³ University of Pristina, Faculty of Economics, Kosovska Mitrovica, Serbia |
| FA-17 | ASSESSING NURSES' EMOTIONAL EXHAUSTION FROM A REGIONAL TEACHING HOSPITAL IN TAIWAN BY A LONGITUDINAL STUDY
Yu-Ning Chao¹, Chih-Hsuan Huang², Yii-Ching Lee³, Hsin-Hung Wu¹
¹ Depart. of Business Administration, National Changhua University of Education, Changhua, Taiwan
² School of Business Administration, Hubei University of Economics, Hubei, China
³ Department of Health Business Administration, Hung Kuang University, Taichung City, Taiwan |

Додаток Г

Відомість кваліфікаційної роботи

